

Text book for Oral Care

The Japanese Society of Oral Care

Nagato Natsume

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Introduction




Japan has the world's longest longevity. That is because Japanese medical treatment has reached to one of the highest level in the world. However, in order to lower a mortality rate further, what we have to do is to encourage people to keep good health and to avoid infection, besides to cure patients. Among measures for avoiding infection, oral care is vital important for babies, infants and elderly people.

Since we have studied oral care for long time, we published a book about our studies in Japanese from the Science Committee of the Japanese Society of Oral Care so as to use it as an oral care standard in Japan. The book was widely used in Japan as a textbook for students to be nurses, dental hygienists, and speech therapists, and as a bible for clinicians of oral care.

We, then, decided to publish a book in English using "Grants-in-Aid for Promotion of Opening Research Results" from "Japan Society for Promotion of Science by Japanese government". We hope this book is helpful to overseas clinicians in learning our results of studies and clinical experiences.

I would like to thank Dr. Toko Hayakawa who translated this book, Professor S.M. Balaji who supported us as a language assistance, Ms. Rie Osakabe who is my secretary and Mr. Kenji Kinoshita who is a publisher.



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Certificate Test of Oral Care

Good oral health is extremely vital not only to help us eat well but also for treatment of oral inflammation & xerostomia and prevention of aspiration pneumonia. Even in the nursing field, oral health is given major importance and maintenance of good oral health & prevention of oral diseases is taught in the curriculum both as lectures and practical sessions.

Oral care is changing with the surrounding environment such as pediatric & geriatric oral care is becoming increasingly important. Various measures are implemented to curtail the growing expenditure on lifestyle-related diseases from the medical social security budget.

Without proper planning, improvement, maintenance and advancement of oral function cannot be achieved.

The Health Care Insurance System for the Elderly people was introduced in 2000 to make greater provisions for Oral Health care. In July 2005, as a move to easing regulation of "Medical Act", implementation of oral care has been opened to people without certification, for example, family members who provide nursing care at home.

In April 2010, NHI point was added on oral care during hospitalization for the specified disease. Expansion for application to other diseases is expected.

But gap between ideal and reality is large and the measures taken are not enough. Implementation of oral care without appropriate knowledge involves risk. There are some shortcomings in implementation of oral care among institutions and medical staffs. Also there are some studies reporting the reality of inappropriate oral care being provided.

We established the Japanese Society of Oral Care, and the Certificate Test aiming to improve the care quality and technique of the oral care providers since 2006. Target groups are all people in the medical field, oral health providers, students in medical fields and general people who are involved in nursing care can take this test for improving their knowledge on oral care.

For maintaining fairness, this certification system is implemented by delegated organization of Japanese Medical and Dental Network. This book is written for people taking the certification exam and people beginning their studies in Oral care, thus basic to advanced knowledge of oral care is provided.

We sincerely hope this certification system helps people who receive oral care.

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Unit *1*

Certification system

Part 1. Definition of oral care

We human beings cannot get energy directly. We take foods which gets digested and absorbed as the energy source and finally used as energy. Thus, anlage of oral cavity, the stomatodeum appears at the early stage of about 3 weeks of pregnancy. The anlage of digestive organ concurrently develops and connects to the stomatodeum to communicate outside the body and becomes primitive mouth. Thus oral cavity develops at the early stage of embryology and is an important organ which forms the basis on an individual's existence.

Detailed knowledge, anatomy and physiology of oral cavity, disease and their symptoms in turn and finally definitions are mentioned.

1. Anatomy of Oral cavity

In brief, oral cavity is the cavity present at the top (beginning) of the digestive canal. The cavity consists of lips, hard palate, soft palate, tongue, gingiva, teeth and cheeks. Foods are masticated and become alimentary bolus which can be easily swallowed after mixed with saliva.. The teeth help in mastication. There are 32 teeth of which 16 are in the maxilla and 16 in the mandible, which are central incisors, lateral incisors, cuspid, first and second premolars, and first, second, third molars. Oral cavity helps in mastication of foods, articulation and also for taste, sometimes for airway. Various organs like lips, palate, tongue, salivary gland, masticatory muscles, suprahyoid muscles, infrahyoid muscles, mandibular bone, temporomandibular joint, teeth, gingiva and alveolar bone contribute to the action.

Perception and movement of oral cavity is controlled by cerebral nerve. Among Central nerves, the olfactory nerve is for smell, trigeminal nerve is for pain and perception of oral mucosa, facial nerve and glossopharyngeal nerve for taste, hypoglossal nerve for tongue movements. More knowledge about tonsil, nasopharynx, oropharynx, and hypopharynx which communicate with oral cavity is necessary for understanding the digestive organs.

2. Physiology of Oral cavity

First of all, saliva plays an important role in the functions of oral cavity. The saliva is secreted by major salivary glands (parotid gland, sublingual gland, submandibular gland) and minor salivary gland (labial glands, buccal glands, palatine glands, lingual glands). The volume of secretion for adult is 1 - 1.5 ml per day, and 99.4 % of it consists of water and other are organic constituents such as albumin, globulin, lysozyme, amylase and mineral constituent. Decrease of saliva secretion may cause Xerostomia. Artificial saliva should be used for Xerostomia due to Sjogren's syndrome and radiation.

The condition of oral cavity is the best place for bacteria growth. Nearly 300 to 400 kinds and more than 100 billion bacteria exist in saliva, plaque, gingival sulcus, tongue, pharynx and mucosa. There are about 100 million bacteria in 1 ml of saliva and 100 billion bacteria in 1 g of plaque are reported. Mainly these are streptococcus, actinomyces, gram positive bacterium. The number of bacteria in oral cavity increases when there is decreased salivary secretion and incomplete cleaning of oral cavity, ill-fitting crown, implant, gingiva pocket and uncleaned denture.

3. Pathology related to Oral cavity

1) Oral disease

Major disease of oral cavity is dental caries and periodontal disease. They cause loss of teeth and nutrition disorder due to poor masticatory function and low intelligibility of speaking, change in facial appearance. Dental caries and periodontal disease are the major dental diseases. Abnormal findings excluding dental caries and periodontal disease are various such as erosion on tongue and mucosa, bleeding, inflammation and tumor. Also temporomandibular joint syndrome caused from malocclusion, paralysis of tongue muscle and masseter muscle, dysphagia and taste disorder should be considered.

2) Relation between oral disease and general body health

Oral disease may affect other organs in the body. Incidence of death from pneumonia among elder people is high and some cases are resulted from aspiration. There are studies reporting implementation of oral care decreased the prevalence of pneumonia. Relation between bacteria in oral cavity and endocardial inflammation, also nephritis are not deniable. Immunoglobulin, antibacterial agent, antiviral agent, hormone-like agent and cytokine analog exist in oral cavity, especially in saliva. Recently, secretory leukocyte protease inhibitor (SLPI) is focused, as it is the strong inhibitor of AIDS virus.

Malocclusion may affect various parts of body. It is well known that abnormal condition of occlusion and temporomandibular joint cause headache and shoulder stiffness. Some studies report that reduced clenching causes decreased muscle activity of upper body, and mobile teeth are one of the high risk factor of Alzheimer's disease. Snoring is recently focused. One of procedure to avoid snoring is by use of oral device but not the surgery. It is reported that the use may improve sleep apnea syndrome and chronic snoring. Sleep apnea syndrome is defined as cessation of breath which continues over 10 seconds with severe snoring during sleeping. It is not only affects breathing but also affects the cardiovascular system and nervous system due to continuous oxygen deficit for a long time. 2 to 4 % of adults in western countries are affected with sleep apnea.

3) Oral cavity-Indicator of systemic diseases

Systematic diseases affect oral cavity. When we see a patient, his oral cavity is always screened, because the sign of systematic illness appears in oral cavity. Small spots on buccal mucosa sings for measles, strawberry tongue sings for scarlet fever, thus these symptoms are so valuable to diagnose.

Halitosis also indicates the general systemic condition. Patients with liver disease have fetor hepaticus, patients with diabetes have the specific halitosis which smells like soured fruits and patients with uremia and renal insufficiency have the specific halitosis which smells like ammonia. Patients with diabetes relatively have more calculus deposition, periodontal inflammation, periodontal disease and ultimately they lose their teeth earlier. Paralysis of orbicularis oris muscle in cerebrovascular disorder is well known. In the earlier days without CT, damaged part was diagnosed from deviation of tongue, uvula, oris muscle. These paralysis affect speech and swallowing, speech therapy and eating/swallowing therapy is also important for oral care.

Recently, relation between osteoporosis and dental disease has been discussed. It is reported that osteoporosis may reduce the volume of alveolar bone and jaw bone and may cause loosening of teeth and worsening of periodontal condition. Though there are studies which objects to the former mentioned literatures, the perspective of osteoporosis which causes mobile teeth from periodontal disease should be considered while making treatment plan.

4) Adverse drug reaction in oral cavity

Drugs are commonly prescribed for older people for systemic diseases. Some drugs can cause adverse drug reactions like Xerostomia. Xerostomia may lead to mucosa disorder, increased coating of tongue, onset of candidal infection, worsening of periodontal disease. Calcium antagonist drugs prescribed for patients with angina or hypertension, or antiepileptic drug may cause multiple specific gingival overgrowth. Anticonvulsant drug may cause taste disorder and it is suggested that the taste disorder is due to Zinc deficiency.

4. Dental prosthesis

About 56% of population of people aged over 75 years old are without tooth. It is foolish to say that that oral care is not required for those populations. Contradictory, people with dental prosthesis need the constant intraoral care. For proper oral care the dental prosthesis should be checked for proper placement (existence of gingival damage, swelling and/or pain), or if a dental prosthesis appropriately functions to masticate foods. Also it is important to follow whether the care, cleaning and storing of dental prosthesis is appropriate. There are some

reports which showed that usage of dental prosthesis for bedridden patients helped them to masticate and eat and subsequently gain strength. In the case of implants, integration of collagen fiber which usually exists between natural tooth and alveolar bone is lost. Inadequate oral care may cause osteitis and osteomyelitis due to inflammation caused by the infected implant affecting the bone.

5. The Care

1) Definition

Oral care is from the English word "Care". In general, Care means that "something is important, so that you are interested in it, worried about it etc, and to be concerned about what happens to someone, because you like or love them. There is no word to mean Care in Japanese, the word of Care can be nursing or nursing care by extended interpretation. In concrete terms, care means health enhancement, disease prevention and rehabilitation in Japanese and it may include easy diagnosis and treatment. There is a word of Cure which is similar to Care though, Cure means treatment and the object of cure is the patient and cure usually targets at the treatment of specific ill organs. The care targets at improving Quality of Life (QOL) of human beings including patients and healthy population.

2) A term of Oral care in English.

The term oral care means Mouth care in Japanese. In English, the words used are oral care or mouth care, but the term mouth care is generally not used. In English the word "mouth" is usually not used commonly while referring to terms like oral, cavity, oral cancer, oral mucosa etc. "Mouth" cleansing is not the preferred term instead it is oral cleansing. In current Medical & dental dictionaries in Japan, the terms "oral" as in oral care, oral healthcare are not seen. These are only found in English. We look forward to the words oral care being used widely in text books and common usage in Japan in the future.

6. Definition of oral care

Yamanaka¹⁾ defined oral care as "oral care is a science and technique targeting at improving the quality of life by prevention of oral disease, maintaining good health and rehabilitation" and following are the recommendations for oral care;

< Recommendations for oral care >

1. Oral cleansing
 - 1) Gargling

- 2) Brushing
- 3) Flossing
- 4) Cleansing between tooth
- 5) Cleansing with the usage of cotton swab, gauze and sponges
- 6) Cleansing with the usage of suction instrument
- 7) Removal of dental plaque and Calculus
2. Application of fluoride compound
3. Fixing, care and cleaning of dental prosthesis
Cleanser, stabilizer, Fixture, storing dental prosthesis
4. Mastication
5. Feeding and swallowing
Feeding rehabilitation, swallowing rehabilitation, prevention of aspiration
6. Prevention of halitosis
7. Prevention of dry mouth
conditions that cause dehydration, artificial saliva
8. Alleviation of pain in the oral cavity
Oral rinse, ointment for oral cavity
9. Prevention of bleeding in oral cavity
10. Gum and cheek massage
11. Exercise of masticatory muscles, related to muscles of jaw movements and, tongue movements
12. Speech rehabilitation
13. Feeding care
Nursing care products
14. Oral hygiene evaluation
15. Esthetic dentistry

Several other definitions of oral care are found besides the definition and examples above. Michishige²⁾ defined the oral care lead by nurse as " it is for maintaining oral health and the technique approaching to adjusting eating, speaking and breathing".

Ueda³⁾ also defined the oral care for patients with strokes "it is to approach patients' own function/ appearance, ability, environment and psychology for oral hygiene management and smooth food intake in patients with stroke".

Reference⁴⁾ edited by Japan Dental Association defines the broad meaning of oral care as " it is to maintain or nurse all oral functions (feeding, mastication, swallowing, articulation, sensuousness, recovering facial appearance, function of salivary secretion etc.)".

As seen in several definitions above, oral care attempts to be defined as broad meaning.

Oral care requires academic team work lead by medical doctor, dentist and other medical staff. Also the other characteristic of oral care is that it is not exclusive to team work by medical and nursing professional members but also patient and his family. The objective expands to healthy people also.

The measures for oral care may prevent not only dental caries, periodontal disease and stomatitis but also may prevent general disease caused from oral disease and improve general function. In addition, implementing oral care may improve speech intelligibility which smooth relationship with other people, and this may result in improving ones esteem in their daily life.

Reference

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- 3) Koichiro Ueda: Nosochukanja no Koku kea, Ishiyaku Publication, Inc., Tokyo, 1999
- 4) Edited by Japanese Dental Association/ Shizuoka Dental Association: EBM nimotozu ita Koku kea no tameni (must read reference review), Ishiyaku Publication Inc., Tokyo, 2002.

Part 2. Development and planning of oral care

1. Introduction

It was a misconception that, the Oral care was mainly thought as "to keep oral cavity clean" when the term of Oral care was not common and the knowledge that oral care can maintain and recover oral function was not widespread. Recently along with the more advanced medical care for aged population, improvement in prevention of aspiration pneumonia, stomatitis and oral dryness are increasingly required; furthermore, oral care is now recognized with the expectation in terms of recovering oral function which provides a joy of eating.

Now wide variety of medical doctor, dentist, nurse, dental hygienist, speech-language-hearing therapist, managerial dietitian (including dietitian), care staff and volunteer staff are the professionals who involved in acute-phase disease, health facilities for recuperation, nursing home and in-home nursing are.

Since July 2005, oral care provided by non-certificated care staff has been permitted by Ministry of Health, Labor and Welfare upon strong request from actual care site, though, in an actual state which has not improved its educational system in oral care, oral care cannot be "well implemented". Also implementation of oral care without the correct knowledge may cause mishappenings, therefore proper knowledge is necessary for the improvement of the quality in oral care.

In this chapter, how the development of Oral care becomes systemized with individual efforts by medical professionals and foresight of oral care are explained.

2. The effort toward oral care and establishment of the term "oral care"

Until early 1970s, oral care and improving oral environment are done by the individuals in medical field. In the late 1970s, the importance of house visit by doctors for in-home elderly people was accepted, along with this recognition, researches on technique and development of instrument are done, though, information was exchanged only between individuals. In this situation, in-home dental network (by medical doctors, dentists, pharmacist, nurse, dental hygienist, managerial dietitian, care staff, lawyer, educational staff, patient peer group) lead by dentists in Aichi prefecture was established and from the network, communication between local study groups became active. The importance of and need to improve oral care was seen in time. With growing clinical experience and increasing needs, further communication targeting at improvement in oral health became active, and with this trend, approaches extended to patients in hospitals and nursing homes, each approach developed from symptoms, problems and complications in individual patients.

In contrast to nowadays with the help of latest technology such as internet, the list of people around the country interested in oral care were made. During this period, nursing science field which stands in the center of oral care, curriculum of educating nursing science was reduced, and frequency of lecture in the field of oral surgery was dramatically decreased. The lack of education about the

fundamental knowledge on oral field in nursing science might have led to fall in the standards of oral care in national population, on very short notice, for corresponding to the situation, the book titled "oral care" (Asahi publication) was published and 10000 copies (270 pages in a book) were freely distributed to hospitals, schools of medicine, school of dentistry, schools of nursing science, educational facilities for nursing science and dental hygienists not only in Aichi prefecture but also around the country. The Aichi Dental Association devoted to cover cost of publication and distribution. At this time, the term of "oral care" was commonly used among medical professional.

The publication triggered to establish the Japanese oral care research association in 1992 and it has developed to the Japanese society of oral care since 2004 to up to present.

At the same time, interest in oral care was developed and the formed loop of interest expanded throughout the country, and local associations such as Tokai local area association was established in 1993 (which merged with the Japanese Society of Oral Care at the time it was established,), local associations were continuously established.

Also in the dentistry field, the requests for home-visit for in-home elderly patients with stroke who were unable to visit hospitals and dentists, were rapidly increased and aggressively home-visit in dental field were launched. Along with this movement, an importance of oral care was focused and rapidly advanced with the needs from nursing field and social demand.

In 1999, the term of "Oral care" appeared in the national nursing exam for the first time. In addition "oral care" has been clearly defined as required item in National speech-language-hearing therapy exam and the importance and the term of "oral care" was finally established.

3. Present state

Professionals in Medicine and Nursing studied oral science as lectures and practical training at educational institutions. Though the level of education was generally highly-developed and complicated, corresponding to social demands, there were some limitations to oral health education. The knowledge imparted was not sufficient. Still there are only a few institutes which have appropriate education systems in oral care not only for dentists but also for medical doctors and other medical professionals.

In view of this concern about insufficient oral health education and an inadequate approach for improving quality of oral care, elderly care insurance system was established and it came into force in the year 2000. In this system, oral health is included in the checklist and required items in nursing service plan. This helped to create a social interest in oral care and an unprecedented epicurean boom pushed a social interest in foods for the elderly and disabled people. Since then an importance of nursing foods has been widely noted.

Since October 2005, the concept of multi-disciplinary nutritional care and management was brought into long-term care insurance category, the sequence of works such as nutritional screening, assessment, setting the plan for nutritional care, monitoring has been driven.. The

items for assessment include factors related to oral care and the supervising dietician is supposed to take an initiative to check the patient's oral cavity.

In addition, since April 2006, elderly care insurance system was dramatically revised, and the social security divided into both prevention security and nursing security. At the daycare/day service facility, improving health, nutrition, and oral function were added to NIH plan. Oral care is considered as the improvement of oral function and nutrition (nutritional care/management), people could receive the service for improving oral function at approximately 50 % of facilities around the country.

At the same time, the revision of medical and technical service cost under medical insurance service, regulation regarding feeding and swallowing therapy was dramatically eased and many people could have benefitted from this revision.

As seen above, many people around the country can receive oral care at various opportunities and occasions by multi-disciplinal professions and it is a big glory.

4. Foresight for the future

The Japanese society of oral care aims to improve the quality and expansion of oral care, and along with this, we should make efforts to research at high standard levels, to analyze the data based on EBM for strengthening oral care as an academic and to establish concrete assessment, not just for the purpose of only acquiring technique of oral care among medical staffs.

On the other hand, the concept of "joy of eating" will be brought into oral care. "Joy of eating" is considered as "to eat enjoyably and peacefully with nice conversation in the happy and blight atmosphere".

Disorder of joy of eating means having difficulty in eating enjoyably and happily. Tooth ache, loss of teeth, ill-fitting or damaged denture, oral dryness, dysphagia, paralysis, disease and its aftereffect, lame body, fear, cold atmosphere, dark and dirty room, noise and unnatural color, loneliness are taken instance and some of these combined to affect joy of eating.

Oral care challengingly targets at eliminating damages related to oral cavity and improving the function. Multi-disciplinary advance knowledge and technique is now required for the process of implementing. As the society, we have established the five-year plan regarding oral care since 2006, and the Japanese oral care foundation has been established in 2010 aiming for 1)economical assessment 2)establishment of system which make continuous implementation of oral care at hospitals and facilities, which links to familiarize oral care 3)making educational standard suitable to each field such as medicine, dentistry, nursing science, and 4) strengthening of human resource development who take up the role to educate oral care, but these are not enough and a lot other initiatives are required.

We hope oral care team, namely OCT will take part in NST and will put the concept of "to eat enjoyably from birth to the end of life" into practice.

Part 3. Oral care certification system

Aim: To increase awareness in national welfare through familiarization with knowledge and technique of oral care and improvement of quality.

- 1) To certify according to occupational field. Depending on the level of knowledge and ability, certification levels and coaching are from 5th to 1st grade. General people without medical certification and students at medical field are allowed to attend 5th grade certificate examination.
- 2) To achieve fair and equal certification, the Japanese society of oral care decided to implement certification exams to specified non-profit corporation Japanese Medical and Dental Network, and appropriate number of examination committees from the society is selected and examination committee members participate to review with the other committee members from the society.
- 3) Only Japanese Society of oral care members are allowed to take certification examination.
- 4) Academic committee members in the Japanese Society of oral care are in charge of fixing and implementing detailed regulation of certification.
- 5) Indication of certification at each grade
 - 5th:** to certificate the individual should understand elementary technical terms and knowledge of technique regarding oral care through the examination (only paper test)
 - 4th:** to certificate the individual should understand general knowledge of oral care according to disease and symptoms.
 - 3rd:** Should be a member of Japanese society of oral care for more than 3 years and more than 30 case reports of oral care are required for application. Merit certificate to individual who have appropriate knowledge on oral care in each field. Contents of examination include knowledge of available range of implementation of oral care in the field where they belong to. (Documentary examination and paper examination)
 - 2nd:** More than 5 years membership of the Japanese society of oral care and presentations at the social scientific meeting and original articles published in the society journal are required for application. Only the individuals without 3rd grade are required to submit more than 50 case reports of oral care for application.. For this certification, you have to have an edge, with vast knowledge and technique in medicine, dentistry, nursing science, law related to oral care besides general knowledge in oral care; this is appropriate for administrators in their respective fields. (Documentary examination and paper examination, oral examination).
 - 1st:** more than 10 years-member of Japanese society of oral care and, more than five presentations at the social scientific meeting or related meeting and more than 5

published original articles in the society or related journal, and 2nd grade certification are required for application. To certificate who have the work contributing to development of oral care science and who will be able to contribute to advance this field in the future. (Documentary examination and oral examination)

Certificated oral care Course: Possessing 2nd grade certification and the leading oral care practical work in the field are required for application. To certificate who are appropriate being the oral care coach in the field where they belong to. (Documentary examination and oral examination)

- 6) The examination committee members are selected by the academic committee from the society and recommend them as candidates of the Japanese Medical and Dental Network. The examination committee members from both the society and the Japanese Medical and Dental Network are incharge of making the examination and of proof reading.

Supplementary regulations:

- 1) The Japanese society of oral care and the Japanese Medical and Dental Network established to improve oral care in Japan by allotting certificated medical staff at hospitals and facilities along with implementation of the certification system.
- 2) Related scientific meeting and society include medical, dentistry, pharmacy, nursing and nutrition which are closely-related to oral care.
- 3) Application forms are specifically provided.
- 4) Examination fee is 5th and 4th: 10,000 JPY, 3rd: 20,000 JPY, 2nd: 25000JPY, 1st and Certificated oral care course: 30,000 JPY meanwhile and the cost cover 5-year registration fee.
- 5) Meanwhile examination is held annually in accordance with the scientific meeting, but it may be flexible to hold examinations in accordance with schedule of training course.
- 6) When the member with certificated oral care degree give the intensive, specific, edge-pointed lectures at graduate school or being equal to it, based on the application by the member, he/she is able to get certification as the designated educational organization from the society, and the society would give the right to take 2nd grade examination.

Unit 2

Criteria and terminology for the certification exam

Part 1. Criteria

Criteria is divided in 3 different categories of Major, Class and subclass in each field to make people understand what they need to learn for implementation of oral care. The questions in examination are based on these classifications.

This text book is edited in accordance with examination pattern.

. Medical field		
Major	Class	Subclass
1. Internal medicine	A) General internal medicine diagnosis	a) Respiratory function b) Cardiovascular function (electrocardiogram etc) c) Blood test 1) blood constituent d) Urine analysis
	B) General internal medicine treatment	a) Acute disease b) Chronic disease
	C) Cardiovascular disease	a) Congenital cardiac disease b) Valvular heart disease c) Ischemic heart disease 1) Angina pectoris 2) Myocardial infarction d) Hypertension and arteriosclerosis e) Cardiac failure and arrhythmia
	D) Respiratory disease	a) Upper airway disease b) Trachea and bronchi disease c) Pulmonary disease 1) Pneumonia 2) Pulmonary tuberculosis 3) Emphysema 4) Lung cancer
	E) Collagen disease/allergy/immune disease	a) General allergy disease b) Asthma c) General collagen disease d) Autoimmune disease e) Immunodeficiency (including AIDS)
	F) Blood disease	a) Anemia b) Leukemia c) Hemorrhagic disease (hemophilia etc)
	G) Gastrointestinal disease	a) Esophagus/stomach/intestine disease b) Liver/bile duct disease c) Pancreas disease

Part 1. Criteria

	H) kidney disease	a) Nephritis b) Renal failure c) Other kidney disease
	I) endocrine/metabolic disorder	a) Endocrine disease 1) Thyroid function disease 2) Pituitary gland disease 3) Adrenal gland disease b) Diabetes
	J) infection	a) Infection 1) Acute infection 2) Chronic infection b) Prevention and medication of infection
	K) Geriatric disease	a) Characteristic and epidemiology of geriatric disease b) Aging c) Bedrest
2. pediatrics	A) Infants development and growth	a) Neonate b) Prematurity c) Infant d) Toddler e) School child f) Physical growth g) Mental development (including interaction between mother and child) h) Motor function development i) Feeding and swallowing development (including baby food) j) Health care for handicapped child k) Battered child syndrome
	B) Cerebral palsy and motor disorder	a) Cerebral palsy b) Spinal muscular atrophy c) Myopathy (muscular dystrophy)
	C) Epilepsy and convulsive disease	a) Epilepsy b) Other convulsive disease
	D) Infection	a) Meningitis b) Encephalitis c) Encephalopathy
	E) Developmental disorder	a) Autism b) Pervasive developmental disorder
	F) Other disease	a) Cardiovascular disease b) Respiratory disease c) Gastrointestinal disease d) Endocrine/metabolic disorder

		<ul style="list-style-type: none"> e) Collagen disease/allergy disease f) Blood disease g) Urinary tract/ genital tract disease h) Psychiatric disorder (including psychophysiological disorder) i) Abnormality
	G) Function disorder related to oral care	<ul style="list-style-type: none"> a) Functions <ul style="list-style-type: none"> 1) Appetite 2) Taste 3) Vision 4) Tactile sense 5) Mastication function 6) Salivation function 7) Intraoral pressure 8) Coughing function b) Disorders <ul style="list-style-type: none"> 1) Appetite dysfunction 2) Dysphagia 3) Salivation dysfunction 4) Taste disorder c) Aspiration <ul style="list-style-type: none"> 1) Swallowing reflex 2) Cough reflex 3) Silent aspiration 4) Aspiration 5) Oral hygiene 6) Cerebrovascular accident d) Aspiration pneumonia <ul style="list-style-type: none"> 1) Mechanism 2) Treatment 3) Prevention
3. Rehabilitation medicine	A) General rehabilitation medicine	<ul style="list-style-type: none"> a) Philosophical construct b) Object and treatment
	B) Particular rehabilitation medicine	<ul style="list-style-type: none"> a) Program setting b) Team approach c) Physical therapy d) Occupational therapy e) Psychiatry f) Adaptive equipment and welfare instrument (including independence support instrument)
	C) Rehabilitation by each disorder	<ul style="list-style-type: none"> a) Brain damage (cerebrovascular accident/ brain trauma) <ul style="list-style-type: none"> 1) Pathology and dysfunction

		<ul style="list-style-type: none"> 2) Assessment and fundamental policy b) Peripheral neuropathy (facial palsy etc) <ul style="list-style-type: none"> 1) Pathology and dysfunction 2) Assessment and fundamental policy c) Cerebral palsy <ul style="list-style-type: none"> 1) Pathology and dysfunction 2) Assessment and fundamental policy d) Muscular dystrophy <ul style="list-style-type: none"> 1) Pathology and dysfunction 2) Assessment and fundamental policy e) Degenerative disease (Parkinson disease, amyotrophic lateral sclerosis, spinocerebellar ataxia etc.) <ul style="list-style-type: none"> 1) Pathology and dysfunction 2) Assessment and fundamental policy f) Spinal cord disorder (spinal cord damage) <ul style="list-style-type: none"> 1) Pathology and dysfunction 2) Assessment and fundamental policy g) Bone disease/ arthropathy <ul style="list-style-type: none"> 1) Pathology and dysfunction 2) Assessment and fundamental policy h) Respiratory disease <ul style="list-style-type: none"> 1) Pathology and dysfunction 2) Assessment and fundamental policy i) Cardiovascular disease <ul style="list-style-type: none"> 1) Pathology and dysfunction 2) Assessment and fundamental policy
4. Otolaryngology	A) Trachea and esophagus	<ul style="list-style-type: none"> a) Structure of trachea, bronchus and esophagus b) Function of trachea, bronchus and esophagus c) Examination of trachea, bronchus and esophagus d) Disease of trachea and bronchus e) Disease of esophagus f) Tracheostomy and airway management g) Dysphagia h) Foreign body in trachea and esophagus i) Others
5. Clinical neurology	A) Cerebrovascular accident	<ul style="list-style-type: none"> a) Cerebral infarction b) Intracranial hemorrhage c) Subarachnoid hemorrhage

	d) Transient ischemic attack e) Other cerebrovascular accident
B) Brain trauma	a) Brain contusion b) Diffuse axonal injury c) Intracranial hematoma d) Hydrocephalus
C) Brain tumor	a) Glioma b) Meningioma c) Metastatic brain tumor d) Nerve sheath tumor e) Other disease
D) Infection	a) Encephalitis b) Brain abscess c) Prion infection
E) Degenerative disease	a) Basal ganglia disease 1) Parkinson's disease 2) Huntington's disease 3) Others b) Motor neuron disease 1) Amyotrophic lateral sclerosis 2) Others c) Spinocerebellar ataxia and Cerebellar atrophy 1) Inherited spinocerebellar degeneration 2) Multiple system atrophy 3) Others d) Other degenerative disease
F) Dementia	a) Alzheimer-type dementia b) Vascular dementia c) Creutzfeldt-Jakob disease d) Other dementia
G) Demyelinating disease	a) Multiple sclerosis b) Leukodystrophy c) Other demyelinating disease
H) Peripheral neuropathy	a) Polyneuropathy b) Polyradiculoneuritis c) Other neuropathy
I) Myopathy	a) Myasthenia gravis b) Mitochondrial myopathy c) Progressive muscular dystrophy d) Polymyositis e) Other myopathy

Part 1. Criteria

Dental Medicine and oral surgery		
Major	Class	Subclass
1. Clinical Dental Medicine	A) Tooth and periodontal tissue	a) Embryology b) Structure c) Function (mastication and articulation) d) Disease e) Elementary technique and knowledge 1) Caries 2) Periodontitis
	B) Oral care	a) Prevention b) Disease c) Elementary technique and knowledge d) Necessary dental terminology for oral care e) Others
2. Oral surgery	A) Mouth/ jaw/ face	a) Embryology b) Structure c) Function (mastication, feeding and articulation) d) Disease e) Fundamental policy for oral care
	B) Jaw joint	a) Embryology b) Structure c) Function (mastication and articulation) d) Disease e) Fundamental policy for oral care
	C) Salivary gland	a) Embryology b) Structure c) Function (mastication and feeding) d) Disease e) Fundamental policy for oral care
	D) Points of attention during oral care	a) Cleft lip and palate and related disorders b) Abnormality of tongue, base of mouth, cheek and lips c) Jaw deformity d) Congenital anomaly and developmental anomaly of jaw e) Temporomandibular joint disorder f) Salivary gland disease g) Peripheral nerve abnormality h) Mouth dryness i) Oral mucosa disease j) Others

E) Knowledge about dental treatment for mastication, feeding and articulation	a) Surgical treatment b) Function recovery with artificial material c) Therapy d) others
F) Inflammation of teeth/ oral/ jaw/ face, tumor, cyst, injury, and deficiency after surgical treatment and oral care	a) Dysfunction b) Fundamental policy for oral care c) Reconstruction and function recovery
G) Oral dysfunction caused from central nervous system disease	a) Disorder b) Fundamental policy for oral care c) Assessment
H) Oral dysfunction caused from aging	a) Disorder b) Fundamental policy for oral care c) Assessment

. Pharmacy

Major	Class	Subclass
1. Oral care and medical agent	A) Medical agent for cleansing	a) Medical agent for cleansing 1) Gargle 2) Mouthwash 3) Dentifrice 4) Lozenge 5) Medication for dry mouth 6) Artificial saliva 7) Stomatitis medicine 8) Others
	B) Medical agent for management of denture	a) Medical agent for denture cleansing
	C) Oral disease due to medical agent	a) Dry mouth b) Oral candidiasis c) Feeding disorder d) Oral Hemorrhage e) Oral Dyskinesia f) Others

Part 1. Criteria

. Nursing science		
Large	Middle	Small
1. Basic knowledge about oral care	A) Oral care	a) Role of each professionals in oral care b) Expansion of oral care c) Role allotment in Oral care and NST, management of infection d) Oral care and risk management e) Oral care and hospital management f) The treatment fees of oral care paid to medical institutions under the medical insurance system g) Oral care under nursing-care insurance program h) constituent member in oral care team and management
	B) How to do oral care	a) Kinds of instrument and how to use b) Body positioning c) Complications caused from oral are and provision • • • aspiration d) Complications caused from oral are and provision • • • infection
2. Basic knowledge about oral cleanse	A) Teeth and gingiva	a) Tooth brushing
	B) Pale • tongue • mucosa	a) Gargle/care of mucosa
	C) Saliva	a) Drool care
	D) Denture	a) Denture care
	E) Dryness	a) Moisturizing care
3. Oral health	A) Oral function B) Oral anatomy C) Eating D) Speaking	
4. Oral dysfunction	A) Feeding disorder B) Articulation disorder C) Respiratory disorder	
5. Regional symptoms and nursing	A) Teeth and periodontal tissue B) Oral mucosa C) Saliva D) Tongue E) Jaw and jaw joint F) Face	
6. Major disease in oral region		a) Caries b) Periodontal disease c) Dry mouth d) Malocclusion e) Temporomandibular disorder

		f) Cyst g) Inflammation h) Malignant tumor
7. Problem caused from oral care	A) Negative effect from excessive-oral care B) Negative effective from oral care instrument	
8. Oral care for handicapped people		
9. General condition and oral care	A) Children	a) Pre/post- operation b) ICU c) Respiratory system d) Cardiovascular system e) Digestive organ f) Brain/nerve g) Implant (artificial material) h) Psychiatric disorder i) Autoimmune disease j) Diabetes k) Malignant tumor l) Chemotherapy m) Radiotherapy n) Transplant (organ transplant/stem cell transplant) o) HIV p) Palliative care q) Terminal care
	B) Adult	a) Pre/post- operation b) ICU c) Respiratory system d) Cardiovascular system e) Digestive organ f) Brain/nerve g) Implant (artificial material) h) Psychiatric disorder i) Autoimmune disease j) Diabetes k) Malignant tumor l) Chemotherapy m) Radiotherapy n) Transplant (organ transplant/stem cell transplant) o) HIV

		<p>p) Palliative care</p> <p>q) Terminal care</p>
	C) Older age groups	<p>a) Pre/post- operation</p> <p>b) ICU</p> <p>c) Respiratory system</p> <p>d) Cardiovascular system</p> <p>e) Digestive organ</p> <p>f) Brain/nerve</p> <p>g) Implant (artificial material)</p> <p>h) Psychiatric disorder</p> <p>i) Autoimmune disease</p> <p>j) Diabetes</p> <p>k) Malignant tumor</p> <p>l) Chemotherapy</p> <p>m) Radiotherapy</p> <p>n) Transplant (organ transplant/stem cell transplant)</p> <p>o) HIV</p> <p>p) Palliative care</p> <p>q) Terminal care</p>
10. Oral care by life stage		<p>a) Infancy</p> <p>b) School-age</p> <p>c) Puberty</p> <p>d) Adolescence</p> <p>e) Perinatal period</p> <p>f) Adulthood</p> <p>g) Late middle age</p> <p>h) Climacteric</p> <p>i) Early adulthood</p> <p>j) Late- adulthood</p> <p>k) Self-contained period</p>

. Speech		
Large	Middle	Small
1. Oral care related to speech therapy	A) Structure of mouth, jaw and face	a) Structure b) Function (feeding, swallowing, articulation) c) Change by aging
	B) Development of feeding and swallowing function	a) Fetal stage b) Infancy (suckling period) c) Infancy (weaning period) d) Childhood
	C) Feeding and swallowing function	a) Oral stage of deglutition (the first phase of swallowing) b) Pharyngeal swallowing stage (the second phase of swallowing) c) Esophagus swallowing stage (the third phase of swallowing)
	D) Factor causing oral dysfunction	a) Central nervous system disease b) Anomaly of articulation organs (form/function of oral cavity including velopharyngeal function) c) Aging d) Others
	E) Oral dysfunction	a) Feeding/swallowing disorder b) Speech disorder c) Others
	F) Examination of function and structure (articulation organs)	a) Inspection b) Evaluation by ears c) Diagnostic imaging d) Oral hygiene
	G) Dental treatment for specifically speech, feeding and swallowing dysfunction	a) Operation b) Dental prosthesis retention c) Therapy
	H) Pediatric suckling, feeding, swallowing dysfunction	a) Disease pathogenesis/ pathology/ dysfunction of feeding/ swallowing dysfunction
	I) Adult feeding, swallowing dysfunction	a) Disease pathogenesis/ pathology/ dysfunction of feeding/ swallowing dysfunction
	J) Feeding and swallowing therapy	a) Indirect therapy b) Direct therapy
	K) Oral care management	a) Aim and meaning b) Method and framework c) Risk management d) Team approach
	L) Regulation of practice	

Part 1. Criteria

Dental hygiene		
Large	Middle	Small
1. Oral physiology, dysfunction and knowledge about disease of older age groups	A) Characteristic of oral region by aging	a) Oral cavity b) Pharyngeal and larynx c) Mastication/ feeding/ swallowing dysfunction
	B) Major disease of oral region in older age groups	a) Tooth abrasion/ attrition b) Root caries c) Periodontal disease d) Oral mucosa disease e) Feeding and swallowing disorder f) Dry mouth g) Halitosis h) Others
	C) Understanding of major disease and its dysfunction and pathology of oral region in older age groups	a) Speech/ respiratory/ aesthetic disorder b) Lifestyle disease c) Specific disease under Long-Term Care Insurance Act d) Pneumonia and others
2. Medicine for older age groups	A) Aim of prescription and observation and management	a) Information of prescription and dispensation b) Dental medicine c) Other medicine d) adverse reaction caused by combined intake of medicines
	B) Infection and disinfectant	a) Effect of disinfectant
3. Oral care for older age groups	A) Health education and health counseling about oral cavity	a) General condition b) Oral condition c) Mental condition d) Social status
	B) Oral cleanse for oral hygiene management	a) Tooth brushing b) Cleanse around dental prosthesis retention c) Tongue cleanse d) Denture cleaning and handling e) Oral health management education to caregiver and family
	C) Relation between feeding/ swallowing and food characteristic	a) Positioning and procedure for eating b) Preferable foods for patients with dysphagia c) Managing food form d) Specific cooking requirements
	D) From the view of oral functional rehabilitation and its absence	a) Gargle b) Tongue exercise c) Open/close and cheek puffing exercise

		d) Upper extremity exercise e) Cervical region exercise, massage to cervical region f) Massage to oral muscles, stimulation of salivary gland g) Voice training and music therapy h) Rehabilitation with usage of instrument
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. Nutritional science		
Large	Middle	Small
1. Nutritional science	A) Aim and meaning of nutritional management	a) Nutrition and dietary habit b) Retention and enhancement of health and nutrition c) Prevention of disease and role of nutrition as treatment d) energy and nutritional metabolism
	B) Nutritional assessment	a) Nutritional care and management b) Body measurement c) Physiological and biochemical test d) Biochemical test e) Diet survey
	C) Nutritional disorder among elderly and discipline of nutritional management to each disease	a) Nutritional disorder b) PEM c) Metabolic syndrome d) Diabetes e) Renal failure/ dialysis f) Constipation/ anemia
	D) Nutrition and foods during dysphagia	a) Foods for dysphagia b) Food characteristic c) Form d) How to use thickener

Part 2. Pattern of examination

. Basic knowledge

1	Definition of oral care	8	Oral care and infection control
2	Meaning of mastication	9	Oral care and aspiration pneumonia
3	Oral mechanism and function	10	Oral cancer and oral care
4	Aging of oral tissue	11	Oral cancer and aging
5	Microorganism in oral cavity -candida and others (changes by aging)	12	How to cleanse oral mucosa
6	Points during oral care	13	Oral care for bed-ridden older individuals
7	Precautions for implementation of oral care		

. Tooth brushing

14	Choice of tooth brush	18	Secondary cleansing instrument
15	Kinds/effect/usage of dentifrice	19	Coloring
16	Fluoride toothpaste	20	Effective assistance for tooth brushing to individuals who cannot implement tooth brushing by their own
17	Application/kinds/usage/precautions of electrical toothbrush	21	Pros and cons of dentifrice

. Gargling

22	Kinds/component of gargling	25	Precautions during gargling in older people who choke towards water
23	General direction of gargling	26	Precaution during gargling in elder people
24	How to care patients who cannot gargle		

. Denture

27	Kinds of denture	35	Malodor from denture
28	How to insert and remove denture	36	Prevention of stomatitis caused from denture
29	Management for storage of denture	37	Pollution which cannot be taken off by denture cleanser
30	Oral care after removing denture	38	Correspondence to aspiration of dentures
31	Kinds and component of Denture adhesive	39	Problem caused from the long term use of ill-fitting denture
32	Components of denture cleanser	40	Advantage and deficit of metallic denture
33	Taste and color change of denture	41	Problem due to long term edentulism
34	Precaution for patients with denture during eating		

. Halitosis

42	Prevention of halitosis	45	Indication for patients with halitosis phobia
43	Breath freshener for preventing halitosis	46	Halitosis meter
44	Oral care for elderly with heavy halitosis and the factor of halitosis		

. Patients with impairment and disease

47	Instruction to who cannot brush teeth correctly because of hemiplegia	55	Precaution and care for patients after cancer therapy
48	Oral care for patients who cannot keep appropriate seating position	56	Oral care for patients who have bleeding tendency
49	Oral care of patients who cannot flex and turn the neck easily	57	Oral care for patients with fever
50	Oral care for patients with lingual dyskinesia	58	Oral care for diabetic patients
51	Oral care for patients with dementia	59	Oral care for patients with cardiac disease
52	Oral care for patients with disturbance of consciousness who bite oral care implements	60	Oral care for patients with hemopathy
53	Oral care for patients who cannot complain pain	61	Oral care for patients with Behcet's disease
54	Oral care for patients with tube feeding		

Part 2. Pattern of examination

. Caries and periodontitis

62	Xylitol	66	Oral care of mobile tooth
63	Characteristic of tooth in elderly	67	Relation between smoking and periodontitis
64	periodontitis	68	Relation between periodontitis and related daily habit
65	Check point and prevention of periodontitis	69	Appropriate brushing method for preventing periodontitis

. Bleeding

70	Bleeding from gingiva (including malignant tumor)	74	Causes of gingival bleeding in the elderly
71	Brushing for patients who bleed easily	75	Intervention to gingival bleeding at the time of oral care
72	Oral care for patients with stomatitis or angular cheilitis	76	Post-extraction care
73	Cleaning of coated tongue		

. Oral dryness

77	Saliva	80	Artificial saliva
78	Prevention of dryness in oral cavity and lips	81	Oral dryness and oral care
79	Intervention for caked sputum on palate	82	Oral care for patients with fragile lips

. Feeding disorder and dysphagia

83	Feeding disorder and dysphagia	87	Precaution for patients with feeding disorder and dysphagia (at-home)
84	Oral care for patients with dysphagia	88	Intervention to the trouble occurred during meal
85	Precaution for decreasing dysphagia	89	Effectiveness of denture for preventing aspiration
86	Precaution of oral care for patients with dysphagia		

XI. At home

90	Oral care for individuals who are unwilling to open their mouth	91	Training for improving oral cavity functions (possibilities for home care)
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XII. Others

92	Correspondence to sialorrhea	100	Oral care for patients who are not unable to deal with sputum
93	Oral care for patients with MRSA	101	Handwashing
94	Care for elderly patients with serious bruxism	102	Improper application of steroid ointment for stomatitis
95	Treatment of temporomandibular joint (TMJ) luxation	103	Accidents that can occur during oral care in frail elderly patients
96	Causes of treatments for stomatitis	104	Points which should not implement to pre-operatively for patients with tumor
97	Ointments and patches for oral use	105	Oral cavity of patients having antiepileptic agent
98	Tooth decay and non-sugar sweeteners such as aspartame	106	Patients who require examination of tendency of bleeding
99	Selection of tooth brush by degree of impairment, shaped instrument for eating		

Unit 3

Questions and summary

Question 1**Select the right combination about the definition of oral care**

- a. Anatomical region targeted by oral care limits oral cavity.
- b. Oral care aims to improve quality of life of patients.
- c. Oral care is not applicable for the patients without teeth.
- d. Oral care is occupationally licensed to dentists and oral hygienists.
- e. The term of care in oral care means mainly nursing and caregiving.

Combination : 1. a, b 2. a, e 3. b, c 4. b, e 5. d, e

Answer : 4

Summary : a. Anatomical region targeted by oral care includes not only oral cavity but also pharyngeal and pharynx.
b. Correct description. Oral care is defined as "oral care is a science and technique targeting at improving quality of life by prevention of oral disease, maintaining good health and rehabilitation".
c. Oral care for patients without teeth is required, in terms of cleansing of dentures.
d. Oral care should be implemented by multi-disciplinary team containing not only medical doctor, dentist, oral hygienist, but also nurse, dietician, speech-language-hearing therapist and care worker.
e. Correct description

Question 2

Select the correct definition of oral care.

- a. Region targeted by oral care is oral cavity including tooth, tongue, and oral mucosa.
- b. The goal of oral care is improving oral hygiene.
- c. Objective for oral care are limited to frail elderlies who need feeding and swallowing therapy.
- d. Oral care does not include scaling which is covered by benefit of health insurance.
- e. Oral care targets at the wide range of preventing oral disease to rehabilitation.

Answer : e

Summary :

- a. Massaging salivary gland and face is accepted as a method of feeding therapy which is included in oral care and targeted region is not only limited to oral cavity.
- b. Improving oral hygiene is one of the aims of oral care though, the goal of oral care is to improve quality of life from a holistic perspective.
- c. The aim of oral care is to prevent oral disease and to improve health, and the object of oral care is human being and it is not only limited to frail elderly but also healthy independent people.
- d. In short, the meaning of oral care was regarded as keeping the oral cavity clean though, recently it includes scaling, application of fluorine, care and cleansing, adjusting or fixing of denture, and minor treatments. Therefore some cases are covered under the benefit of health insurance.
- e. Concept of oral care is wide ranging from cleansing oral cavity which aims at preventing oral disease to feeding/swallowing therapy which aims at rehabilitation.

Things to understand

In terms, oral care aiming at improving the QOL, understanding the concepts which include prevention to rehabilitation is required. Factors of oral care range among all generations, and from healthy people to patients with disease and impairment.

Keywords

oral care, rehabilitation, QOL

Question 3

Select which is NOT correct regarding aim and effect of oral care.

- a. The goal of oral care is prevention of caries and periodontitis.
- b. Oral care can improve general health and sociality.
- c. Oral care can prevent respiratory infection such as aspiration pneumonia.
- d. Patients without teeth require oral care as well.
- e. Oral care can improve oral functions.

Answer : a

Summary : a&e. Preventing caries and periodontitis is one of the important aims of oral care but it is not the goal. Effort for improving and maintaining general oral function may improve patients' general and psychological status.

- b. Improving oral function may enhance general health by eating properly, and in accordance to the effect, improving communication skill may enhance patients' sociality.
- c. Oral cavity is one of the respiratory organs. Appropriate oral care may decrease indigenous bacterium in oral cavity and at the same time, may decrease aspiration which helps in preventing respiratory infection.
- d. Oral cavity can be unhygienic even without teeth. Care and cleansing denture is required and at the same time, recovering and improving oral function but mastication is one of the aims of oral care.

Things to understand

One of aims of oral care is to maintain oral cavity clean and to prevent caries and periodontitis, but the final goal is to maintain oral function properly. To understand that it may effectively result in preventing diseases such as respiratory infections, and improves general health, is important.

Question 4

Select which is NOT correct as the definition of oral care.

- a. Oral care is one of the medical procedures to symbolize the quality of nursing.
- b. Oral care is the scientific technique targeting at improving QOL by preventing disease, maintaining and improving disease free condition, and rehabilitation.
- c. Oral care targets at keeping not only oral cavity clean but also healthy oral function.
- d. Oral care particularly includes eliminating plaque and food residue, cleansing denture, having oral massage, and oral function therapy.
- e. Oral care is not required for patients without teeth.

Answer : 5

- Summary :**
- a. "Oral care is one of the medical procedures to symbolize the quality of nursing" ("The nature of nursing", V. Henderson, 1970)
 - b. "Oral care is the scientific technique targeting at improving QOL by preventing disease, maintaining and improving disease free condition, and rehabilitation." Katsumi Yamanaka (the former president of Nagoya city nursing college)
 - c. In specific oral care is defined as improving oral hygiene and in general oral care is defined as improving oral functions such as feeding/ swallowing, articulation.
 - d. To improve oral hygiene, mechanical cleansing with use of tooth brush and interdental brush and chemical cleansing with use of mouthwash and disinfectant gargle are required. At the same time, to improve oral function, face and oral massage and functional therapy are required.
 - e. In edentulous condition, eliminating food residue and dried sputum are fundamental. The effort for keeping oral function healthy is required in the terms of improving QOL.

Things to understand

The first aim of oral care is improving oral hygiene and re-acquiring oral function. Improper oral care causes problems not only in oral cavity but also in general body, function and sociality. Particular examples are as follow;

1. Problems in oral cavity

As the result of advanced caries and periodontitis;

Tooth ache and gum pain may appear.
Bleeding from gums and oral mucosa .
Halitosis may become worse.
Denture may become ill-fitting.
Ill-fitting crown.
Oral lesion (mouth ulcer, ulcer and tumor) may occur.

2. Problems in general body

Spreading of dental infection
Aspiration pneumonia
Repeated fever
Low nutrition

3. Problems in function and sociality

Decreased physical strength due to poor feeding/swallowing and decreased appetite.
Decreased motivation for inter- communication caused from decreased language and speaking function and halitosis.

Positive effects of oral care are;

Improvement of health
Improvement of QOL
Reduced burden of care

Keywords

Oral care, QOL

Question 5

Select which is NOT correct indication when to assess degree of cleanliness of oral cavity

- a. Accumulation of coating on tongue
- b. Deposition of dental plaque on denture
- c. Deposition of calculus
- d. Halitosis
- e. Number of remaining tooth

Answer : e

Summary : a. Accumulation of tongue coating causes physiologic halitosis. 90 % of halitosis is caused from volatile sulfated compound and this choice is not the appropriate the answer.

b. Dental plaque accumulates from food residue and it produces dextrin which is the main component of indigenous bacterium in oral cavity. In addition, there are evidence that some indigenous bacterium in oral cavity cause aspiration pneumonia. From these points, this choice is not appropriate for the answer.

c. Calculus is the calcium from the salivary deposits on dental plaque and its surface is rough which helps in the formation of dental plaque. The major areas where calculus deposits are lingual side of mandibular anterior tooth and buccal side of maxillary molar. These parts are the most major cause of periodontitis, so that this choice is not appropriate for the answer.

d. The factor causing halitosis is volatile sulfated compound such as methylmercaptan and Dimethyl Sulfide Borane. Those are mainly produced by putrefaction of bacterium deposited in tongue coating which is located in the anterior part of tongue. This choice is not appropriate for the answer.

e. Loss of tooth occurs due to caries and periodontitis though; the number of retained tooth does not directly reflect degree of cleanliness of oral cavity. From this point, this choice is appropriate for the answer.

Things to understand

Presence of numerous factors related to oral hygiene and review of the mechanism is required.

Keywords

Oral hygiene

Question 6

Select which is NOT correct regarding Oral Assessment Guide (OAG).

- a. 8 assessing category including the category of swallowing are classified.
- b. 8 assessing category including the category of denture are classified.
- c. Effectiveness of OAG is accepted by oral expert committee of oncology.
- d. OAG is abbreviation of Oral Assessment Guide.
- e. Clinical examination of OAG was done on patients with bone grafting.

Answer : b

Summary : a. The 8 categories are swallowing, voice, lip, tongue, saliva, oral mucosa, gingiva, and tooth.

- b. As the OAG was made for assessing oral mucosa disorder in nursing for tumors, hence the item of denture is not included. As it is the tool for assessing changes in oral cavity for elderly nursing facility, it had the enough reliability but it was not enough to assess severe oral mucosa disorder.
- c. Effectiveness of OAG is accepted by oral expert committee of oncology.
- d. OAG is abbreviation of Oral Assessment Guide.
- e. Original clinical examination targeted at assessing changes in oral cavity of patients who had cancer therapy. Authors of OAG such as Eilers mentioned oral cavity is the origin of sepsis among patient with immunosuppression.

Things to understand

OAG is the abbreviation of Oral Assessment Guide. Original clinical examination targeted at assessing changes in oral cavity of patients who had cancer therapy. Authors of OAG such as Eilers mentioned oral cavity is the origin of sepsis among patient with immunosuppression. As it is the tool for assessing changes in oral cavity at elderly nursing facility, it had the enough reliability but it was not enough to assess severe oral mucosa disorder. To re-classify oral assessment appropriately, authors of OAG referred 10 major references from 1962 to 1983, which contained oral assessment tables. As the result of this effort, 8 category of swallowing, voice, lips, tongue, oral mucosa, gingiva, and tooth were classified. In patients who have undergone bone grafting the degree of complications in the oral cavity ranges from temporarily uncomfortable symptoms such as ulcer to symptoms which may

secondarily cause severe infections and threat to life. From this point, OAG particularly is important.

OAG is an effective assessment of clinical changes of oral mucosal disorders involving the evaluation and recording of oral condition. Secondary change triggered by Chemical therapy and radiation therapy may be quantifiable with use of OAG. Assessment of oral care using OAG, provides perspectives of degree and secondary illness of oral mucosa disorder.

Table: Table of Assessment Guide

Category	Method of assessment	Rating .1.	Rating .2.	Rating .3.
Voice	Converse with patient. Listen to crying.	Normal	Deeper or raspy	Difficulty in talking or crying, or painful.
Ability to swallow	Ask patient to swallow.	Normal swallow	Mild pain on swallowing	Unable to swallow
Lips	Observe and feel tissue.	Smooth, pink and moist	Dry or cracked	Ulcerated or bleeding
Saliva	Placing depressor into mouth, touching center of tongue and the floor of the mouth.	Watery	Thick or ropy. Excess salivation due to teething.	Absent
Tongue	Observe appearance of tissue.	Pink, moist and presence of papillae	Coated or loss of papillae with a shiny appearance with or without redness. Fungal infection.	Blistered or cracked
Mucous membrane	Observe appearance of tissue.	Pink and moist	Reddened or coated without ulceration. Fungal infection.	Ulceration with or without bleeding
Gingiva	Observe appearance of tissue.	Pink and firm	Oedematous with or without redness, smooth. Oedema due to teething.	Spontaneous bleeding or bleeding under pressure
Teeth	Visual. Observe appearance of teeth.	Clean and no debris	Plaque or debris in localised areas	Plaque or debris deposition along gum line

Andersson P. et. al.: Spec Care Dentist, 22(5): 181-186, 2002. Cited and translated. Partially revised and assessment added

Question 7

Select the right combination about the example of oral care.

- a. Oral cleansing
- b. Fitting and cleansing denture
- c. Treatment for dental caries
- d. Removal of ill-fitting dental prosthesis
- e. Observe oral cavity

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary : a. Gargling- mouthwash, brushing- tooth paste, flossing & using interdental tooth brush, cotton swab, gauze and sponge
b. cleanser, stabilizer and storage of denture
c & d. Oral care does not include extensive treatment such as surgery.
e. Observation of denture, bridge, mobile tooth, caries, scar/ ulcer in oral cavity, swelling, bleeding, gingival inflammation

Things to understand

In brief, oral care is defined as, "care for improving oral hygiene therefore oral cleansing, recently the term seems to be expanded to include elimination of dental plaque, cleansing denture, and easy treatment. In some cases feeding and mastication and swallowing are included.

Keywords

Oral care, cleansing denture, observation of oral cavity

Question 8

Select which is NOT correct about mastication.

- a. It enhances an exercise performance.
- b. It promotes appropriate development of jaw bone during growth.
- c. It promotes brain development and prevents aging.
- d. It affects taste.
- e. It makes people to detect foreign material.

Answer : d

Summary : a. Mastication is included in general exercise system. It may enhance an exercise performance and balance of occlusion may affect general equilibrium.

b. Mastication is related not only dietary habit also development of bone and muscle particularly during anagen.

c. Mastication needs to manipulate muscles and tongue consciously or reflexively; it may expansively stimulate brain and body, and promote brain development and prevent aging.

d. Taste is not directly related to mastication.

e. Mastication needs the reflexive opening movement through tooth and oral mucosa sensing foreign body in foods.

Keywords

Mastication, exercise performance

Question 9

Select the maxillofacial function which does not produce occlusal contact

- a. Feeding function
- b. Speaking function
- c. Swallowing function
- d. Mastication function
- e. Emotion function

Answer : b

Summary :

- a. Feeding function has the broad meaning and it contains mastication function. From this point, this choice is not appropriate for the answer. In addition, during last phase of mastication there will be occlusal contact of upper and lower tooth.
- b. During speaking, occlusal contact is not seen. From this view, this choice is appropriate for the answer. During articulation of /s/, the space between upper and lower tooth become the "closest speech space" though, it still remains 1mm in front teeth area.
- c. During swallowing, there is occlusal contact at lower jaw which is called swallowing position. From this point, this choice is not appropriate for the answer. Swallowing position is on the mandibular glide. It is specifically in the middle between the posterior end of mandibular occlusal contact and intercuspatation position.
- d. This is not the appropriate choice because masticate exercise advance mastication and at the late phase of mastication, upper and lower tooth contact at intercuspatation position.
- e. Emotional function is strong occlusion seen when people feel frustrated. More specifically, the action of clenching is included and the choice is not appropriate for the answer.

Things to understand

Availability of numerating meaning of mastication and explaining each item is required.

Keywords

Oral function

Question 10

Select the correct combination regarding oral structure and mechanism.

- a. Feeding, mastication, digestion and swallowing are implemented.
- b. It is divided into oral vestibule and cavitas oris propria.
- c. Hard palate is uncornificated sub mucosa.
- d. Dental enamel is as firm as bone.
- e. Periodontal tissues support teeth.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

- Summary :**
- a. Oral cavity functions include feeding, mastication, digestion by saliva, swallowing, airway for respiration. In addition, it plays a major role in tasting and articulation.
 - b. Oral cavity is the entrance of the digestive organ. The boundary line of oral cavity is dental arch or alveolar arch and beyond the boundary line is called oral vestibule and inside of the line is called cavitas oris propria. Oral vestibule is a space structured between inner surface of lips and cheeks, and dental arch. Cavitas oris propria is the inner side of the dental arch and it has tongue in the base and its roof is formed by the palate.
 - c. 2/3rd of the palate is hard palate and the rest 1/3rd is soft palate and posterior to soft palate, there is a velar. Hard palate is immovable mucosa and soft palate is movable mucosa. There are incisive papilla and palatine ridge on the hard palate and hard palate has cornified mucosal epithelium.
 - d. 96% of components of dental enamel are mineral and it is the hardest tissue in the body. Dentin and cementum contains 70% minerals and it is almost equal content as bone. Characteristic of dental enamel is the absence of cells.
 - e. Periodontal tissues support teeth. Embryologically, it is derived from dental follicle and it includes periodontal ligaments, alveolar bone, gingiva and cementum. Cementum is a part of hard tissue of teeth.

Keywords

Oral cavity, tooth, periodontal tissue, structure of oral cavity, oral tissue

Question 11

Select the correct choice regarding the nervous system for regulation of mandibular movement.

- a. Jaw opening reflex: The stimulation of nociceptors of first branch of trigeminal nerve triggers this reflex.
- b. Tonic periodontal masseter reflex: this reflex relates to temporomandibular joint disease type 2.
- c. Mandibular stretch reflex: when jaw-opening muscles are rapidly stretched in a passive way, this reflex occurs.
- d. Mandibular stretch reflex: this reflex works on keeping intercuspatio position.
- e. Ib inhibition: it is inhibition of alpha motor neuron of neurotendinous spindle.

Answer : e

Summary :

- a. The stimulation of nociceptors of second or third branch of trigeminal nerve causes Jaw-opening reflex. Therefore this choice is not correct.
- b. Tonic periodontal masseter reflex is when continuous pressure pushes the anterior teeth causing continuous masseter tension. This reflex relates to temporomandibular joint disease type 1 and this choice is not correct.
- c. Mandibular stretch reflex occurs when masseter and temporal muscles are rapidly stretched in a passive way and this reflex closes the jaw. This choice is not correct.
- d. Mandibular stretch reflex works on keeping mandibular resting position and the choice is not correct.
- e. Ib inhibition is inhibition of alpha motor neuron of neurotendinous spindle. This choice is correct.

Things to understand

Factors related to inhibition of mandibular movements and reviewing the mechanism is required.

Keywords

Mandibular movement

Question 12

Select the correct choice regarding mandibular condyle movements.

- a. Moving the mandibular condyle becomes the center of rotation for lateral movements.
- b. Exercise volume of balancing side condyle is smaller in comparison with working side condyle.
- c. Side shift volume of working mandibular condyle is greater than balancing side condyle.
- d. The main movement of the mandibular condyle during mastication is hinge movement.
- e. The lateral condyle path angle is seen on equivalent condylar guides.

Answer : e

Summary :

- a. During lateral movements, the entire mandible shows a lateral movement and the mandibular condyle does not become the center of rotation of lateral movements.
- b. Exercise volume of balancing side condyle is greater in comparison with working side condyle.
- c. Side shift means sliding gap and it does not mean the movement of working mandibular condyle.
- d. Movements of mandibular condyle during mastication are mainly rotating and sliding. Hinge movement of mandibular condyle is seen during the exercise of opening and closing the mouth.
- e. The lateral condyle path angle is seen on equivalent condylar guides. This is the appropriate choice.

Things to understand

Explaining movements of mandibular condyle is required.

Keywords

Mandibular movement

Question 13

Select the correct combination regarding oral functions.

- a. Impairment of tongue complicates mastication, swallowing and articulation.
- b. Swallowing cannot be implemented without closing the lips.
- c. Trismus is caused only from abnormality in temporomandibular joint.
- d. Soft palate paralysis causes coughing during feeding.
- e. Patients without teeth have dysgeusia.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 1

- Summary :**
- a. Tongue movement plays an important role in oral functions such as mastication, swallowing, articulation. Therefore impairment of tongue may cause mastication disorder, dysphagia and articulation disorder.
 - b. Swallowing can be implemented by a complex coordinated movement in the pharynx. The position where Alimentary bolus divides the sequence of feeding/swallowing into 3 phases such as oral phase, pharyngeal phase and esophagus phase. Closing lips are required at any phase.
 - c. Open-close movement is implemented by masticatory muscles and trismus is caused from not only abnormality in temporomandibular joint but also abnormality in masticatory muscles and jaw bone, trismus can be due to ache or psychogenic factors.
 - d. Coughing is the reflex to stimulation of submucosa of the pharynx and airway. Soft palate paralysis does not cause aspiration automatically, so Soft palate paralysis does not fatally cause coughing.
 - e. Taste perception has 4 elementary tastes of sweetness, sourness, bitterness and saltiness. There are acceptors in the taste buds distributed in the oral mucosa. Majority of taste buds exist on the tongue and loss of teeth does not result in dysgeusia.

Things to understand

Understanding function of each oral part and elementary function such as feeding/swallowing and articulation and relation with other related organs is required.

Question 14

Select the correct combination regarding aging of oral tissues.

- a. Physiological function decreases with aging.
- b. Fibroblasts in the gingiva increases with aging.
- c. Organic materials in dentin increases with aging.
- d. Thickness of periodontal ligament decreases with aging.
- e. Oral mucosal epithelium becomes thin.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary : a. Changes with the increase in age are called aging. Strehler explained aging process with 4 standards such as universality, internality, progression and harmful effect.

- b. Changes in the gingiva include subgingival retraction, submucosal epithelium becomes thin, the cell ingredients such as fibroblasts decrease in the gingival lamina propria and on the contrary, the collagen fiber increases.
- c. The formation of secondary dentin advances, and the pulp cavity becomes constricted. Because the dentin's narrow tube is calcified, mineral matter increases, and organic content decreases, it becomes transparent and fragile.
- d. The thickness of the periodontal membrane becomes light, and cell ingredient and the collagen fiber gradually decreases. The mechanical sequence for the bite pressure of periodontal ligament fibers is disturbed and becomes irregular and the cementum thickens.
- e. Generally, the oral mucosal epithelium becomes thin. In the mucous membrane of tongue in particular, thinning is seen conspicuously. The cell ingredients such as fibroblasts decrease in the gingival lamina propria and on the contrary, the collagen fiber increases. Arteriosclerosis is seen in the oral mucosa.

Things to understand

Strehler explained the aging process with 4 standards such as universality, internality, progression and harmful effect.

Changes in appearance include weight, decrease in height, a change of the posture due to the osteoporosis. With aging, the organs wither. And functioning decreases with progressive aging. Basal metabolic rate, cardiac output, lung capacity, maximum nerve conduction velocity decreases linearly. In terms of cells, the number of cells decreases. On the contrary, collagen fibers increase and the artery wall thickens and loses elasticity, causing arteriosclerosis.

Keywords

Oral cavity, aging, tissue, aging in oral tissue

Question 15

Select which is INCORRECT regarding aging in oral tissues

- a. The oral mucosa atrophies, elasticity decreases and becomes fragile.
- b. With decrease in number of taste buds and the functional decline in nerve transmission, the threshold of taste rises.
- c. By the functional decline of the salivary gland, the property of saliva changes and a decrease in quantity of salivation is seen.
- d. The muscular strength of the lingual muscle decreases, and the tongue becomes small.
- e. A change in the form of the temporomandibular joint occurs. And by loss of teeth in particular, the mandibular condyle lowers and flattens.

Answer : d

- Summary :**
- a. Like aging of the skin, the oral mucosa atrophies, elasticity decreases and becomes fragile. It may be the reason that oral ulcerations are easily caused by dentures and the decreases in quantity of secretion of saliva is also related to oral ulcerations.
 - b. The aging process is seen in the nervous system and the threshold of taste rises. By a rise in threshold, taste discrimination decreases. It is said that saltiness is most affected in fundamental tastes.
 - c. There are individual differences, but the salivary gland shows a degenerative change with aging. With the atrophy and decrease of acinous cells, and adipose tissue and change in the property of saliva with decrease in quantity of salivation is seen. Careful attention about the influence of the drug taken should be paid.
 - d. The tongue is comprised of muscular tissue and a mucous membrane which covers the surface of the tongue. With aging, the muscular strength of the whole body decreases and it may be the same for tongue muscular strength though the volume of tongue does not decrease.
 - e. As in the jaw bones, changes in the form of temporomandibular joint also occur, and particularly the form of the mandibular condyle changes dramatically due to loss of teeth. Flattening is seen not only in the lower jaw but also glenoid fossa and the articular tubercle in the temporal bone.

Things to understand

Aging is seen in the oral field. Not only understanding the change but also understanding how the change may result in and what we should be careful about implementing oral care.

Keywords

Oral tissue, aging

Question 16

Select the correct combination regarding the change in stomatognathic system due to aging.

- a. Hypercornification of the oral mucosal epithelium
- b. Angle of mandible becomes acute
- c. Flattening of the condylar process
- d. Thinning of the articular disc
- e. Drop of the taste threshold

Combination : 1 a, b 2 a, e 3 b, c 4 b, e 5 d, e

Answer : 4

Summary : a. The oral mucosa becomes thin by aging due to thinning of the submucosa. Hypercornification of the oral mucosal epithelium is not seen, so this choice is not correct.

b. The angle of mandible becomes acute during aging though, the angle of mandible becomes obtuse with aging after adult age. Therefore this choice is not correct.

c. The condylar process is sphere shaped in adulthood. There is more bone resorption of the condylar process superiorly than bone formation, and, this results in the flattening of the condylar process. Therefore this choice is correct.

d. The joint disk is mainly composed of fibrous tissues located between the glenoid fossa and articular head. It becomes thin due to aging, so this choice is correct.

e. The threshold is a term indicating the degree of stimulation that a sensory receptor captures. When the threshold is low, sensitivity is high The taste decreases with aging. In other words, the threshold increases. Therefore this choice is not correct.

Things to understand

Understanding the age-related changes of the stomatognathic system is required.

Question 17

Select the correct combination regarding intraoral infectious disease in the elderly.

- a. In the elderly, there are no specific microbes seen in abundance in the oral cavity.
- b. Elderly persons who are bedridden and on urine catheter are susceptible to oral candidiasis.
- c. Thickened tongue fur is a sign of Candida bacteria multiplying on the surface of tongue.
- d. The reason why aspiration pneumonia is often seen among elderly persons, it because of the remarkable increase in intraoral pneumococcus.
- e. In the oral cavity with thickened tongue fur and dental plaque, regardless of pathogenicity and avirulence, there is increased number of bacteria.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

- Summary :**
- a. With aging, the person is more likely to be infected with various kinds of diseases. Depending on the disease, specific microbes may multiply though, among elderly people, there is no characteristic microbe seen invariably in the oral cavity.
 - b. Patients using urine catheter have frequently urinary tract infections and frequently require antimicrobial treatments. As the result of this, fungal infections are likely as a microbial substitution phenomenon. The candidiasis is a typical disease of this phenomenon.
 - c. Tongue fur is the result of hyperplastic filiform papillae. With slight stimulation of the tongue, hyperplasia occurs. There is no relation between the existence of Candida bacteria and the origin of the fur. The black pigment attached to fur is called as black hairy tongue.
 - d. The reason why many elderly people have aspiration pneumonia is that reflex of the pharynx decreases and intraoral bacteria easily invade the lungs. The pneumococcus is an indigenous bacterium of the oral cavity, but shows pathogenicity when in the lungs.
 - e. The oral cavity with thickened tongue fur and dental plaque is a result of insufficient oral care and a great variety of bacteria propagate in large quantities in the oral cavity. Swallowing reflex often decreases in elderly persons and aspiration helps bacteria invaded the lungs and it results in pneumonia.

Things to understand

Even if the elderly person with a few oral bacteria has aspiration, he is less likely to suffer from pneumonia. Good oral cleaning can prevent many infectious diseases.

Keywords

Intraoral infection, elderly person, Candidiasis

Question 18

Select which is INCORRECT regarding intraoral bacteria.

- a. Decreased quantity of salivation and oral dryness changes bacterial flora of the mouth in elderly person.
- b. Candida is an intraoral indigenous bacterium though oral candidiasis develops in elderly people with decreased physical strength.
- c. Acute oral candidiasis is characterized by the formation of a false membrane on oral mucosa which cannot easily exfoliate by abrasion.
- d. The clinical manifestations of oral candidiasis are white moss of the mucous membrane surface, ache and dysgeusia.
- e. Cleaning the oral cavity, application of antifungal drugs and gargles are effective in the treatment of oral candidiasis.

Answer : c

Summary :

- a. Immune function in elderly person decreases and additionally the quantity of salivation decreases due to salivary gland acinar atrophy and this phenomenon results in oral dryness and decrease in self cleansing function. This oral condition causes increase in microbes and opportunistic infections.
- b. The typical weakening of microbes seen in the elderly persons are that of bacteria (*Staphylococcus aureus* such as MRSA, *Klebsiella pneumonia*, *Pseudomonas aeruginosa*, *Escherichia coli*), fungi (*Candida*) and virus (herpesvirus).
- c. Majority of oral candidiasis is acute pseudomembranous candidiasis where the oral mucosa is covered by white moss which can easily exfoliate by abrasion. In chronic conditions, the false membrane thickens showing cornification of the mucous membrane epithelium.
- d. The *Candida* bacteria habitually reside on skin, gastrointestinal tract and genitalium other than the oral cavity. The clinical manifestations of oral candidiasis are pseudomembranous white moss, a contact ache and stimulation ache, dysgeusia, a sore and flare of the mucous membrane.
- e. Cleaning the oral cavity, application of antifungal drugs and gargles are effective treatment for oral candidiasis. When there is a causative underlying disease of a fence-sitting infection in the background, the appropriate treatment for the underlying disease is necessary.

Things to understand

In a healthy oral cavity, streptococcus and Neisseria, constitute resident flora which defends pathogenic bacteria. Understanding that decrease or disappearance of intraoral indigenous bacterium occurs in elderly persons or persons with poor oral hygiene, with changes in bacterial flora of the mouth, are required. In addition, you must perform oral care after having understood about oral candidiasis which is frequently seen in elderly persons.

Keywords

Elderly person, oral candidiasis

Question 19

Select which is INCORRECT as an onset factor of oral candidiasis.

- a. Mouth dryness
- b. Malnutrition
- c. Aging
- d. Fluorine application
- e. Chemical therapy

Answer : d

Summary : Oral candidiasis develops from fence-sitting infections. Also dry mouth makes a person susceptible to oral candidiasis. Generally, oral candidiasis occurs in elderly persons and infants with poor general health or after receiving chemical therapy for cancer.

Things to understand

Understanding oral candidiasis is required.

Keywords

Oral candidiasis

Question 20

Select the major disease in oral mycosis.

- a. Aspergillosis
- b. Cryptococcosis
- c. Candidiasis
- d. Mucormycosis
- e. Nocardiosis

Answer : c

Summary : To implement oral care, understanding candidiasis is important and required. Elderly persons and infants with poor health may get oral candidiasis. The factor of oral candidiasis is the fungus of Candida. Aspergillosis, Cryptococcosis, Mucormycosis and Nocardiosis have no relation to fungus.

Keywords

oral mycosis, oral candidiasis

Question 21

Select which is not a phenomenon of oral candidiasis.

- a. Hairy tongue
- b. Angular cheilosis
- c. Dysgeusia
- d. Inflammatory erythema
- e. Multiple caries

Answer : e

Summary : Oral candidiasis develops from fence-sitting infections and it tends to be seen among elderly people and infants. At the time of implementation of oral care, confirmation of presence of oral candidiasis is required. The symptom is a white rice porridge-like mass on the palate, tongue, or the mucous membrane of cheeks. With oral candidiasis, sometimes complications like hairy tongue, angular cheilosis, dysgeusia, and inflammatory erythema may occur but not relation with multiple caries. When oral candidiasis is doubted, an intraoral examination of bacteria and the dosage of the antifungus must be carried out.

Things to understand

Understanding symptoms of oral candidiasis and importance of oral care is required.

Keywords

Oral candidiasis

Question 22

Select which is INCORRECT for the diagnosis of oral candidiasis

- a. Examination of salivary gland histology
- b. PAS stain
- c. Methenamine silver stain
- d. Immunoenzyme technique
- e. Examination of oral bacteria

Answer : a

Summary : In examination of oral bacteria, the Candida is confirmed by culturing intraoral bacteria. For the confirmation, PAS stain, methenamine silver stain, immunoenzyme technique, examination of oral bacteria is implemented. This question aims to confirm that the excision of oral cellular tissue for the diagnosis of oral candidiasis is not required.

Keywords

Oral candidiasis, diagnosis

Question 23

Select the correct factor which affects the onset of Candida.

- a. Denture
- b. Abrasion of the tooth
- c. Dentigerous cyst
- d. Traumatic dental occlusion
- e. Dental caries

Answer : a

Summary : Wearing dentures creates an intraoral environment where fungus is easy to develop, so oral care including mouth wash is fundamental and important. Abrasion of the tooth, dentigerous cyst, traumatic dental occlusion, and dental caries are not the onset factors.

Keywords

Oral candidiasis

Question 24

Select which is INCORRECT as the key point in implementation of oral care.

- a. To confirm whether the patient can open mouth enough.
- b. To confirm the existence of halitosis.
- c. To understand the place where dirt is easy to attach to.
- d. No implementation of oral care when the patients complain of ache.
- e. To pay attention to the positioning when the patient coughs during oral care.

Answer : d

- Summary :**
- a. Oral care cannot be implemented if the patient cannot fully open his mouth. In addition, it may result in articulation disorder and functional disorders in feeding/swallowing . Before implementation, massage of the muscle group that open and close the mouth to ease the tension and mouth opening exercise are required. Also as in the posterior regions of the arch, cleaning is difficult, you should pay attention to the posterior teeth .
 - b. Halitosis is one of the important indexes to gauge oral hygiene. It is useful for evaluating the effect of oral care, it should be checked during routine oral care.
 - c. There are many factors causing poor oral hygiene including brushing technique, decreased sensation due to paralysis, caries or malalignment that prevent proper brushing. You should understand the areas susceptible to poor oral hygiene.
 - d. Patients often refuse oral care because of the ache resulting from periodontitis though; avoiding oral care worsens periodontitis. You should pay attention to selection of tooth brush and brushing pressure for implementing an appropriate oral care.
 - e. If the patient coughs even for the small amount of water and saliva during oral care, dysphagia should be strongly doubted. You should pay careful attention to the positioning during oral care, instrument in use, and agent.

Things to understand

Halitosis, ache, swelling, dryness, and hyperesthesia (hypersensitivity and torpor), motor disorders are key points for the early detection of oral diseases. When these symptoms are detected during oral care, a patient should be checked by the dentist.

1: halitosis

The cause of halitosis varies. Major causes of halitosis are; 1.poor oral health
2. systemic diseases, 3. physiology, 4. Dietary causes. The cause of halitosis due to poor oral health varies such as smell of blood,the smell of, degraded

proteins in pus, the smell from various malodorous substances including volatile sulfur compounds produced by bacteria. Some diseases have a characteristic smell and the disease may be distinguished from the smell.

Systemic diseases which may produce halitosis include dehydration, disease of a nose, respiratory organs and the liver, diabetes and uremia. Physiological halitosis occurs at the time of awaking, fasting, strain or menstruation. Dietary halitosis is caused from alcohol, cigarette, garlic and cheese.

2: ache

When patients insist of pain in the oral cavity, there may be dental caries, periodontitis, denture ulcer, or the existence of intraoral diseases such as an aphthous on the labial mucosa or herpes stomatitis or Candida. Detecting the cause of ache and quick management is required.

3: swelling

The causes of swelling are infection, periodontitis, side-effect of certain medicines (hydantoin, calcium antagonist agent and cyclosporin A), oral tumor or epulis.

4: bleeding

It is seen in patients with periodontitis and leukemia, who have a tendency of bleeding. Brushing for patients with bleeding tendency should be very careful. Also eliminating calculus in periodontal pockets may be very dangerous and it should not be implemented without careful consideration.

5: dryness

Elderly patients, patients, Sjogren's syndrome, patients who take drugs such as a hypnotic sedative or antianxiety drug for a long time, or patient who have had radiation therapy show dryness of the mouth. Because self-cleansing with saliva decreases, oral hygiene tends to deteriorate.

6: hyperesthesia

Taking a hypotensive drug for a long time or abnormality of a nerve controlling the perception of the tongue results in hypersensitivity and loss of sensation on the surface side of the face or extremity of tongue. Dirt may remain on the paralyzed side and careful oral care is required. On the contrary, patients with hypersensitivity tend to refuse oral care, so the selection of instrument to be used should be carefully considered. Similar oral care is needed when there is stupor of lips, or nerve paralysis.

7: motor disorder

When the tongue's motor ability is damaged by central motor deficit after cerebrovascular disorders or functional disorders, occurrence of articulation disorders or feeding/swallowing disorders may be likely. You should be cautious not to miss these symptoms during oral care.

Keywords

The key point of oral care

Question 25

Select the correct choice as appropriate oral care for patients requiring nursing care.

- a. A caregiver renders oral care to a patient requiring nursing care with paralysis of the hand to reduce the patient's burden.
- b. The observation points required for assessment of oral care is only the patient's oral health and body function.
- c. In case of implementation of oral care for patients with dysphagia, water should not be used during oral care to avoid aspiration.
- d. In the assessment of the patient's degree of independence in oral care, the patient's ability of what he can do is evaluated.
- e. It is important that elderly persons requiring nursing care who don't have a daily habit of cleaning the mouth need to acquire the habit of cleaning their mouth 3 times a day, after each meal.

Answer : d (kindly check for the correct option)

Summary :

- a. Supporting the patient's independence considering the possibility of rehabilitation may be applied to oral care. Even in paralysis, to maintain the residual function, patients should be supported to perform daily chores as independently as possible even with modified instruments.
- b. Independence of oral care may be affected by not only the physical problems and damage by aging but also patient's will (mental aspect), good relationship with caregiver (social aspect) and living quarters (material aspect), assessment of mental and environmental aspects is required.
- c. The secretion of saliva and self-cleansing decreases in patients who cannot have oral intake of food. Therefore oral hygiene may be poor requiring good oral care. Oral care uses water depending on the situation, and careful attention to swallowing should be paid.
- d. Independence degree of oral care does not evaluate patient's can-do ability but the ability what the patient CAN already do.
- e. Elderly people do not easily accept a change in their usual customs and sometimes they refuse it. Making them familiar with oral care is important regardless of duration and frequency of oral care.

Things to understand

Assessment (physically, mentally, environmentally) of a patient before beginning oral care is important. Oral care should be begun with an understanding between the patient and the caregiver. Caregiver needs to take efforts to support a patient's independence from the aspect of rehabilitation of oral care.

Keywords

A person requiring nursing care, degree of independence, dysphagia

Question 26

Select which is NOT appropriate as a caution for oral care

- a. Start by well-preparing the instruments in advance.
- b. Do not use a pillow when oral care is implemented for a patient in face-up position.
- c. Cleaning is one of the most elementary procedures.
- d. Pay careful attention to pressure on the instrument and the part where the instrument touches the oral cavity in order to avoid vomiting reflex.
- e. Clean the oral cavity with a wet sponge or brush if the patient cannot gargle.

Answer : b

Summary :

- a. To decrease the burden of the patient and caregiver, and to complete oral care in a short time as efficiently as possible, advance preparation is needed. Oral care should be started with pre-established instruments and stable positioning.
- b. To prevent sputum, eliminated dirt and mouthwash from entering the trachea, slightly anteverted orthopneic position during oral care is preferable. In case of unilateral paralysis, taking a lateral position with the healthy side downward is also fine. When carrying out oral care with face up position due to necessity, you have to pay attention to positioning the patient's jaw down with the use of a pillow.
- c. To prevent infection, cleaning procedures and use of disposal gloves are strongly required.
- d. Hard pressure on posterior tongue and fauces causes a vomiting reflex. There are individual differences in tolerating the vomiting reflex and you have to check each time before performing oral care.
- e. Without gargle, the dirt is easily left between a molar tooth and on the buccal mucosae, so cleaning the parts with sponge brush is required. Washing procedures are risky for patients with dysphagia.

Things to understand

Caution for oral care

Do not put burden on the patient

Minimize the risk of aspiration

Perform cleaning procedure

Keywords

Caution for oral care

Question 27

Select which is an INCORRECT infection control

- a. The infection rate of HIV by a needle pad accident is lower than infection rate of HBV and HCV.
- b. When HBs antibody is positive, hepatitis does not develop with a needle pad accident.
- c. Blood, body fluid, excreted product of the patient is handled as an infectious material.
- d. In the case of rendering Oral Care, gloves are used with or without an infectious disease.
- e. MRSA is connected with the use of a cephem-based antimicrobial.

Answer : c (kindly confirm for the correct option, the explanation and the answers are not relevant)

Summary : a. The infection rate of HBV, HCV and HIV by a needle pad accident are as follows; HBV: 30%, HCV: 3%, HIV: 0.3%. Infection rate of HIV is lower than those of HBV and HCV.

b. Positive HBs antibody means the body is infected by the hepatitis B virus in the past, but it is currently healed. Even if a new antigen is in the body, the infection does not happen.

c. Blood, body fluid, excrement of the patient should be handled as a potentially-infectious material.

d. It should be assumed that all patients have an infectious disease. The concept is called "standard pre-caution".

e. MRSA is multidrug-resistant staphylococcus aureus which increases rapidly as the result of frequent use of third generation cephem system antimicrobials. Appropriate use of antibacterial agent is important.

Things to understand

The infectious disease that you should be careful of while rendering oral care is HIV, HBV, HCV and MRSA infection. Understanding how each infectious disease infects human beings is important. The elementary concept of infection control is "standard precaution".

Keywords

Infection, infection control, standard precaution

Question 28

Select which is NOT correct as infection control in oral care.

- a. It is difficult to screen infectious diseases for all patients.
- b. It is important to apply the concept of Standard precaution thoroughly.
- c. Use of a Disposal product whenever possible is necessary.
- d. Hand-washing for each patient every time is elementary.
- e. If bleeding is not seen clearly, it is not necessary to treat saliva as medical waste.

Answer : e

Summary :

- a. It is not possible to implement screening of infectious diseases for all patients for dental treatment or oral care and an interview is not enough to get all the relevant information from the patient.
- b. The screening of infectious disease is difficult so the entire staff should apply the concept of Standard precaution. However this is difficult because of various reasons.
- c. To implement Standard precautions, the use of a disposal product is very effective. But there are some products which are not available as disposal, so being familiar with the method of sterilization is important.
- d. Infectious diseases are most often transmitted through the practitioner's hand. Sterilization of instruments is essential though, the most elementary infection control is hand washing.
- e. Materials infected by blood or body fluid should be treated as garbage for preventing bloody infection. Oral cavity has resident microbiota and is the easiest part to bleed, so saliva should be treated as medical waste.

Things to understand

Infection control should be well-done with the deep understanding of oral health and oral care. The screening of infectious disease is difficult so efficiently applying the concept of Standard precaution by staff is important.

Question 29

Select which is an INCORRECT explanation of Standard precaution.

- a. The oral care needs gloves, a mask, the wearing of a plastic apron.
- b. Standard precaution is measures to be taken for patients with infectious diseases.
- c. The wearing of gloves must be carried out right before placing the hand in the oral cavity while implementing oral care.
- d. Hand washing play the most important role in terms of preventing infection.
- e. Protective measures are required to prevent spread of infection from polluted devices.

Answer : b

- Summary :**
- a. During oral care, sometimes patient's saliva scatters so the caregiver (practitioner) should wear gloves, a mask, and a plastic apron.
 - b. Standard precaution is applicable to all patients. It is applied to all patients' blood, body fluid, mucous membrane and skin with a wound regardless of kind of disease.
 - c. When there is contact with blood, body fluid, discharge or contamination, wearing gloves (not necessarily sterilized) is elementary. Preventing the spread of pathogen, should be done right before contact with a patient.
 - d. Washing hands is essential in all medical procedures and plays the most important role in preventing infection. Appropriate hand washing can decrease nosocomial infection.
 - e. Appliances polluted with blood, body fluid and discharge should be carefully treated to prevent contact with skin, cloth and spread of pathogen.

Things to understand

Standard precaution which should be performed for all patients normally to decrease the risk of nosocomial infection is the infection control measure targeting at non-specific diseases. The aim of Standard precaution is to minimize the opportunity of contacting with blood or other body fluids. Sweat, blood, body fluids, mucous membrane, damaged skin are treated as objects which may be the source of infection.

Specific procedures are as follows;

- 1: For eliminating infection from hands after touching blood, body fluids, mucous membrane or damaged skin, change gloves in between multiple patients.
- 2: Wear gloves when in contact with blood, body fluids, mucous membrane or damaged skin.
- 3: When at the risk of infection to eyes, nose, mouth, clothes and shoes through scattering of blood or body fluids, protective wear is required.
- 4: polluted devices should be handled correctly in order to prevent infection of the mucous membrane/cloths/environment.
- 5: Only in the case of a patient who might pollute the environment, a patient should be accommodated in a private room. In case of absence of a private room, observing strict infection control is required.
- 6: there is no limitation regarding transfer of infection.
- 7: a needle should not be re-capped.
- 8: proficiency on use of

devices with a needle is required. 9: hand-to-hand passing of sharp devices such as knife is prohibited.

Keywords

Standard precaution

Question 30

Select which is NOT correct for aspiration pneumonia.

- a. Aspiration pneumonia develops due to oral bacteria entering the trachea by aspiration.
- b. The majority of aspiration in elderly persons is subclinical aspiration due to the decrease in cough reflex.
- c. A patient on tube feeding because of disability of ingestion may have aspiration pneumonia.
- d. The white blood-cell counts of the aspiration pneumonia patient increases, and CRP shows a low value.
- e. The cricopharyngeus muscle resection is one of the surgical methods to prevent aspiration pneumonia.

Answer : d

Summary : a. Aspiration pneumonia develops due to oral bacteria entering into the trachea by aspiration. So decrease in number of bacteria in the oral cavity with oral care may decrease the risk of pneumonia.
b. The majority of aspiration in elderly persons is subclinical aspiration due to the decrease in cough reflex. Discharges of oral cavity or pharynx flowing into the trachea without conscious effort causes pneumonia.
c. Even with tube feeding, a patient has a risk of aspiration pneumonia by aspirating saliva containing dental bacterium and esophageal refluxed content.
d. The blood test evidence of aspiration pneumonia is the same as of other pneumonia. The white blood-cell counts of the aspiration pneumonia patient increase, and CRP shows a high value.
e. For prevention of aspiration, swallowing therapy is carried out and surgical methods aiming at improving the swallowing function and preventing aspiration are larynx elevation method and cricopharyngeal myotomy.

Things to understand

The majority of aspiration in elderly persons and patients with cerebrovascular disorders is subclinical aspiration. So decrease in number of bacteria in the oral cavity by oral care may decrease the risk of pneumonia.

Keywords

Aspiration pneumonia, subclinical aspiration, bacteria in the oral cavity

Question 31

Select the correct choice regarding oral care for a patient with oral cancer

- a. Oral care for a patient with gingival cancer is unnecessary because stimulation of the gingiva is a concern.
- b. Oral care during post-operative phase for an oral cancer patient must be performed after wound healing is completed.
- c. There might be an onset of stomatitis at the time of beginning radiation therapy, so oral care by brushing is contraindicated.
- d. Use of 4% glucuronic acid chlorhexidine for a patient with oral cancer is recommended to enhance the oral cleansing effect.
- e. Oral care of a patient with tube feeding must be performed before nourishment infusion.

Answer : e

- Summary :**
- a. A method of oral care which does not stimulate the tumor must be devised. At least it is necessary to have a combined oral care with the use of gargle.
 - b. Oral care must be performed immediately as soon as possible with the permission of the attending physician. The enforcement of oral care after complete wound healing is too late.
 - c. It is rare that lesions on the mucous membrane are seen immediately after beginning radiation therapy. In the absence of mucous membrane lesions, the use of a tender brush is preferable.
 - d. 4% glucuronic acid chlorhexidine is usually used in hand sterilization and when it is sold as a mouthwash, it is contained in low percentage. There are studies reporting that chlorhexidine causes anaphylactic shock even in low concentrations.
 - e. Oral care just after the tube feeding infusion stimulates the nourishment which is injected and may cause vomiting or reflux. Oral care for a patient with a tube feeding must be performed at fasting or more after 30 minutes after infusion.

Things to understand

Oral care should be carefully done because of the existence of focus in the oral cavity.

Keywords

Oral cancer

Question 32

Select which is NOT correct regarding oral cancer.

- a. Most of the cancer chemotherapeutic agents cause immunosuppression, so a dissection and treatment of the intraoral source of infection must be done before giving chemotherapeutic agents.
- b. Side effects of radiation therapy include dry mouth and stomatitis.
- c. The patient scheduled for surgery for cancer needs training on how to gargle, prior to surgery and must prepare for postoperative oral care.
- d. Oral care for a mandibular cancer patient with trismus by permeation of cancer to masticatory muscles requires training of forced mouth opening.
- e. A sharp carious tooth is an incentive for oral cancer.

Answer : d

- Summary :**
- a. Many anticancer agents cause a drop in immune function due to the the side effects of myeloablation, nausea and vomiting. Because of opportunistic infections, a dissection and treatment of the intraoral source of infection is very important before giving chemotherapeutic agents.
 - b. 3 major treatments for cancer are surgery, radiation therapy and chemotherapy. Head and neck cancer including oral cancer is greatly responsive to radiation therapy. Because salivary gland is included in the radiation range, dry mouth and stomatitis occur as side effects.
 - c. Various motor deficits occur due to postoperative pain and the large tissue defect after surgery for oral cancer so oral care with a device is difficult. Therefore gargling in the early stage after operation is elementary for healing wound and oral care.
 - d. Inflammation complicated with oral cancer spreading to the masticatory muscles or direct infiltration to masticatory muscles cause trismus. Mouth opening training is mechanical stimulation. Mechanical stimulation promotes metastasis to lymph nodes and to remote organs so opening mouth training is contraindicated.
 - e. Similar to alcohol and smoking, inclined tooth, tooth sharpened by dental caries, fractured crowns, ill-fitting dentures are indicated as an incentive for oral cancer.

Things to understand

To understand that teeth sharpened by dental caries and ill-fitting dental prosthesis mechanically stimulate oral mucosa and may be an incentive for oral cancer and the importance of preparation for oral care before beginning treatment is necessary. Oral care must be ingenious with an understanding of the side effects of each treatment.

Keywords

Oral cancer, oral care

Question 33

Select the right choice for general method of oral care.

- a. A patient with full dentures or without teeth does not need a toothbrush.
- b. Gargling at the time of oral care is the same as gargling which is implemented at the time of returning from an outing.
- c. The oral cavity of a patient who cannot gargle is moistened or wiped with dry gauze.
- d. Plaque is removed by mechanical cleaning with devices such as toothbrushes.
- e. The effect of Oral care is only on tooth and denture cleaning..

Answer : d

- Summary :**
- a. In patients without teeth, plaque is formed by food residue and intraoral discharge, so oral care is required. The use of a toothbrush stimulates the mucous membranes and promotes salivation, so effect of massage is expected at the same time.
 - b. During oral care, the gargle is bubbled gargling. To coat the oral cavity with water, the cheeks are supposed to actively move upward-downward, left-right and anterior-posterior in gargling. Bubbled gargling may wash the oral cavity and also be effective in enhancing the strength of the perioral muscles.
 - c. The oral cavity of a patient who cannot gargle is moistened or wiped. Wiping the oral cavity should be done only when the use of a toothbrush is not appropriate. Wiping the oral cavity needs to be done with wet and well-twisted clean gauze or sponge brush.
 - d. Dental plaque containing sticky biofilm attaches strongly to a tooth, and its surface functions as a barrier. It may be removed mechanically using a toothbrush.
 - e. Oral care prevents dental disease, aspiration pneumonia and also the rehabilitative effect on muscles around oral cavity may result in improving oral function and it eventually helps eating. The recovery of the oral function may improve the bloodstream of the brain and it works for preventing aging of the brain.

Things to understand

1: gargling (removal of residual food) 2: brushing (removal of dental plaque by mechanical cleaning) 3: wiping (for patients who cannot gargle or who are unable to use a toothbrush). Oral care has a role of preventing aspiration pneumonia and rehabilitative effect.

Keywords

Brushing, gargling, wiping

Question 34

Select which is NOT appropriate as a general oral care method

- a. The toothbrush removes dirt around teeth and tongue fur.
- b. The interdental brush removes interdental dirt
- c. Cleaning of dentures
- d. Massage of face and oral cavity
- e. There is no necessity of mechanical cleaning along with chemical cleaning.

Answer : e

Summary :

- a. The toothbrush not only removes the dirt around teeth, but also massages the gingiva, eliminates tongue fur and has a massaging effect on the buccal mucosa. It is an essential device for oral care.
- b. As the toothbrush cannot remove interdental dirt, interdental brush and floss are required for cleaning in between the teeth. In particular, gingiva recedes in adults so using an interdental brush is recommended.
- c. The fungi such as MRSA or the Candida are detected with high probability from a denture and the gingival interval. For cleaning a denture, it should be removed from the oral cavity and all the denture surfaces and metal fittings are to be washed carefully.
- d. Training of mouth opening in trismus and massage of the muscle groups that open and close the mouth are useful for performing oral care smoothly. Also oral massage for maintaining oral function and face massage for eliminating hypersensitivity are important for oral care.
- e. Chemical cleaning such as gargling and washing are adjunctive methods and an optimum effect cannot be provided with only chemical cleaning only.

Things to understand

1: Improving oral hygiene

Mechanical cleaning: eliminating dirt mechanically with the use of toothbrush and interdental brush, sponge, gauze.

Chemical cleaning: eliminating dirt chemically by gargle or washing the mouth with a mouthwash.

2: oral rehabilitation

Massage of oral cavity and face

Exercise of oral organs

Voice training/ swallowing training

Keywords

how to do oral care

Question 35

Select the correct choice regarding cleaning method for the oral cavity.

- a. Adherent tongue fur should be eliminated at once.
- b. It is most effective if the cleaning of the oral mucosa is carried out with a toothbrush similar to the one used to brush teeth .
- c. Using toothpaste as a cleaner for exclusive use for the tongue for eliminating thickened tongue fur is effective.
- d. In case there is no fur on the tongue, cleaning the tongue is not necessary in order to avoid injury.
- e. Using Isodine gargles diluted to double to 4 times is most effective.

Answer : c

Summary :

- a. It is preferable to eliminate thickened fur over several times not at once.
- b. There is a risk of damage to the oral mucosa while cleaning with a tooth brush. Cleaning with a sponge with handle is preferable.
- c. It is effective.
- d. Even if there is no visible fur on the tongue, dirt collects in gaps between small papillae of the tongue, so cleaning the tongue is always required.
- e. Isodine gargle is usually diluted to 15 - 30 times for use. You have to be careful as high concentration of iodine gargle may burn the oral mucosa and the patient complains of tingling pain.

Things to understand

Oral care is needed not only for teeth but also for oral mucosa.

Keywords

Oral mucosa, sweeping

Question 36

Select which is INCORRECT oral care for oral mucosa

- a. A steroid ointment is applied to oral candidiasis of the buccal mucosa.
- b. As for the food residue in the oral vestibule, it is wiped with a 1% oxydol tampon.
- c. Rub tongue with a soft hair toothbrush lightly.
- d. Rub tongue with a finger bound with water-moistened gauze lightly.
- e. Applying vaseline on dried lips at the end of oral care.

Answer : a

Summary : a. The steroid ointment may worsen oral candidiasis and viral stomatitis, therefore it should be applied only after appropriate diagnosis.
b. Oxydol (3% of oxygenated water) undiluted solution or diluted to 2-10 times is used for intraoral sterilization and washing. Sterilization effect is not strong.
c. There are various tongue brush available, but substitution by soft hair toothbrush or sponge brush is acceptable. You have to be careful not to rub the tongue strongly.
d. There are various tongue brush available, but instead using a finger bound with water-moistened gauze is acceptable. You have to be careful not to rub the tongue too strongly.
e. With the aim of moistening, vaseline and azulene ointment is applied to the lips and corners of the mouth at the end of oral care, but when the dryness is severe application before oral care is preferable.

Things to understand

To understand the appropriate oral care, procedures for oral mucosa is required.

Keywords

Steroid ointment, oral candidiasis, tongue brush

Question 37

Select which is INCORRECT for cleaning the oral mucosa

- a. Decreased salivation affects the oral mucosa.
- b. Tongue fur increases due to microbial substitution phenomenon and poor oral hygiene.
- c. Oral care for oral mucosa in a patient on tube feeding or intravenous nutrition is required.
- d. Self- cleansing plays a big role in cleaning the oral mucosa.
- e. Chemical cleaning is an elementary procedure to clean the oral mucosa.

Answer : e

Summary : a. 1-1.5 liters of saliva is secreted per day and it functions to moisten the oral cavity and has an antibacterial action. Decreased salivation and mouth respiration results in dry mouth. Dry mouth causes inflammation of the oral mucosa and residual foods are easily retained.

b. Tongue fur is when the dorsum of tongue is covered with white and black mossy affixes. It occurs due to food residue and bacteria accumulating in the gaps between extended and thickened filiform papillae. And it worsens due to microbial substitution phenomenon and poor oral hygiene.

c. Without ingestion, self- cleansing decreases due to a drop in the quantity of secreted saliva. Therefore intraoral indigenous bacteria multiply proliferously and oral care is necessary.

d. Cleaning function by saliva, mastication and tongue movement is called self- cleansing. Parts of teeth are self cleansed. Due to self- cleansing, there is no necessity to clean the oral mucosa in healthy persons.

e. Mechanical cleaning using a sponge brush and soft toothbrush is an elementary procedure to clean the oral mucosa. Chemical cleaning with mouthwash moistens the oral cavity and effects easy-dirt-removal, but it is an adjunct.

Things to understand

Oral mucosa is basically self- cleansed, but if dirt is left by some reason, cleaning is required. Dirt is eliminated by mechanical cleaning method of moistening the oral mucosa. Oral mucosa differs from tooth, it is soft tissue, you should be careful not to cause damage and bleeding.

Keywords

Oral mucosa, self- cleansing, saliva

Question 38

Select which is INCORRECT regarding oral care for bed-ridden elderly people.

- a. It is preferable for the person to be placed in a sitting position to perform oral care..
- b. For a person who cannot sit upright, oral care is performed in a lateral position.
- c. The preparations of a gargle basin, a towel and apron are necessary not to wet the face, clothes and the bedding.
- d. In a person with unilateral paralysis put the paralyzed side downward while performing oral care.
- e. If a patient has disturbance of consciousness and dysphagia, the use of toothpaste is not preferred.

Answer : d

Summary :

- a. During oral care, the position easily prevents an intratrachea invasion, meaning slightly anteverted orthopneic position is preferable. A pillow may be used for making the position stable.
- b. Only when a person cannot take an orthopneic position, a lateral position can be taken to prevent aspiration, accidentally swallowing saliva and dirt, sputum, mouthwash or from entering into the trachea.
- c. Major constitutions of intraoral dirt are bacteria and residual foods. Oral care should be preceded under a hygienic environment without polluting and wetting the face, clothes, and bedding.
- d. There is an increased risk of aspiration when the paralyzed side which is sensitive to sputum, saliva and mouthwash, is placed downwards. Therefore if a patient has unilateral paralysis, the healthy side should be placed downwards during oral care.
- e. A patient with disturbance of consciousness and dysphagia is at the risk of aspirating saliva and toothpaste accumulated in the oral cavity and it enters into the trachea. Therefore you must minimize the quantity of water used in the oral care procedure and also toothpaste containing blowing agent increases volume so using such a toothpaste should be avoided.

Things to understand

1: How to render oral care for the bedridden elderly people

It is preferable to take an orthopneic position to perform oral care. For a person who cannot raise the body, performing oral care in a lateral position is fine. The preparation of gargle basin, a towel and apron is necessary not to pollute and wet the face, clothes and bedding. A minimum quantity of water and toothpaste is used in the oral care procedure. Oral care for a person without teeth is implemented by gently wiping with sponge, gauze and cotton swab for absorbing gargle.

Keywords

Bed resting

Question 39

Select the correct choice regarding oral care for bedridden elderly people who need nursing care.

- a. While performing oral care in a lateral position for the elderly with unilateral paralysis, paralyzed side should be placed downward.
- b. While performing oral care for a person who cannot do oral care by himself but can take a stable position, face-up position should be taken to avoid aspiration.
- c. Functional therapy for swallowing includes ice-massage and swallowing without breathing.
- d. Independence degree of brushing in the Mouth cleaning independence degree (BDR index) is approximately equal to Daily life independence degree C.
- e. For performing oral care for a person who cannot gargle by himself due to paralysis, the healthy side should be placed upward by principle.

Answer : c

Summary :

- a. For a lateral position, paralyzed side should be placed upwards. In terms of rehabilitation, patients need to brush their teeth by themselves.
- b. Face-up position is laying down on the bed with face-up. Oral care in this position increases risk of aspiration, so turning atleast only the head to one side is better. If the patient can take a different position, anteverted orthopneic position during oral care is preferable.
- c. Ice massage includes application of applying ice to throat and skin over the on salivary glands. In swallowing without breathing, breathing before swallowing is stopped and the breath is exhaled from the mouth after swallowing. The pressure under glottis increases, and it makes it difficult for the meal lump to enter the respiratory tract while exhalation pushes the meal lump away from the respiratory tract.
- d. The Mouth cleaning independence degree (BDR index) is assessed by the 3 activities of brushing, denture wearing, and mouth rinsing. The assessment is clarified into partially nursing (a), fully nursing (b), disable nursing (c).
- e. In performing oral care for a person who cannot gargle by himself due to paralysis, the healthy side should be placed downward by principle. You pour water from patient's maxillary molar region on the paralyzed side. While you pull down the corner of the mouth, the patient cannot close lips and swallows so that aspiration rarely occurs.

Things to understand

Oral care means cleaning the mouth for improvement of oral hygiene in the narrowest sense. And in the broad sense it means improving oral function with treatment and feeding, mastication, & swallowing exercises. The specific aims of oral care are preventing aspiration pneumonia, oral diseases and improving QOL and oral function.

Oral care for bed ridden elderly persons generally includes:

Preparation devices and tools: tooth brush, auxiliary cleaning device (sponge brush, interdental brush, and tongue brush), oral cleaning tools, penlight, dental mirror, treatment sheet, and apron.

Approach and introducing the products to the patients.

Adjusting positioning: It is preferable to take an orthopneic position to perform oral care. For a person who cannot raise the body, oral care is performed in a lateral position.

Relaxation: when the patient has hypersensitivity or abnormal sensitivity in the oral cavity, to ease his tension, perform oral care in a stepwise manner using finger, cotton swab and tooth brush.

Observation of oral cavity: tooth, gingiva, palate, buccal mucosa, denture, oral hygiene condition, oral dryness, halitosis are key points of observation. Also observation of functions of lips and tongue is required.

Oral care: if the patient wears dentures, it should be removed first followed by brushing the teeth with a toothbrush and brushing tongue and oral mucosa with an auxiliary cleaning device. After this procedure, oral cleanse is implemented again. Depending on necessity, oral function therapy is carried out. After oral care, you have to check if the patient has coughing or cyanosis. If you do not see a specific finding, the oral care is completed.

Keywords

The Mouth cleaning independence degree (BDR index), body positioning, improvement of oral function

Question 2

Select the appropriate toothbrush for a patient with mostly loose teeth, poor oral hygiene and gingival bleeding.

Material	Hardness of bristles	Length of bristles	The number of fascicle
a. Pig bristle	Soft	35mm	Close planting
b. Nylon bristle	Average	35mm	3 lines
c. Nylon bristle	Average	25mm	3 lines
d. Nylon bristle	Average	25mm	close planting
e. Nylon bristle	Average	5mm	3 lines

Answer : c

Summary :

- a. Pig bristle is hard to keep clean, and the head is also too big. This kind of tooth brush is not appropriate.
- b. Material and hardness are appropriate but the length of bristle is too long. So this is not correct.
- c. The details of this toothbrush are appropriate for a standard Japanese without many missing teeth. So this is appropriate for the question.
- d. Material and hardness of toothbrush is appropriate, close planting is not appropriate.
- e. Material and hardness are appropriate, but the size is too small for those who have many teeth.

Things to understand

Selection of toothbrush requires considering the the number of remaining teeth and condition of the gingiva. Question 2 questions the standard of toothbrush selection. Moreover, shape of handle and edge of bristles, and how to brush the teeth needs to be considered.

Keywords

Tooth brush, material of bristles, hardness of bristles, size of head

Question 3

Select the correct combination explaining the choice of toothbrush.

- a. Toothbrush which is used for infants by adults do not require differentiation.
- b. Selection of toothbrush for adult should consider brushing pressure.
- c. Toothbrush with super-tapered-bristle should be used in the treatment for periodontal disease.
- d. Oral mucosa in elderly people gets cornified and hard bristle is appropriate.
- e. Handle should be thin if the patient has weak grip strength.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

- Summary :**
- a. Toothbrush used for children must be different than the one used for adults. The head and handle need to be smaller, thinner and longer because an adult can see the oral cavity of the child well.
 - b. When the brushing pressure is strong, relatively bigger toothbrush is preferred to avoid concentration of brushing pressure in the one part.
 - c. Patients with periodontal disease need a super-tapered-toothbrush to clean the periodontal pockets well.
 - d. Oral mucosa in elderly people gets weakened and stimuli of toothbrush easily damages the oral mucosa, so softer toothbrush is appropriate.
 - e. When grip strength is weak, modification of the toothbrush for friendly grip is required.

Things to understand

Selection of toothbrush with consideration of patients' age and condition of oral cavity

Keywords

Tooth brush, life stage

Question 4

Select the appropriate combination explaining about components and expected effects of tooth paste.

- a. Tranexamic acid has hemostasis effect.
- b. Ethanol is used as a disinfectant.
- c. Bamboo pipe-stem Lil sodium sulfate has humidity retention effect.
- d. Calcium carbonate has a scouring effect.
- e. Sodium fluoride is effective for preventing dental caries.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary : a. Tranexamic acid is a hemostatic agent.

- b. Ethanol is a common disinfectant, but it is compounded in low concentrations in dental rinse for resolving other components, it cannot be expected to have a disinfectant effect.
- c. Bamboo pipe-stem Lil sodium sulfate is a blowing agent and has no humidity retention effect.
- d. Scouring effect of calcium carbonate not only eliminates stains adhered to surface of tooth but also eliminates plaque.
- e. Sodium fluoride and other fluorides are effective for preventing dental caries.

Things to understand

Understanding the efficacy and components of toothpaste is required.

Keywords

Toothbrush, Tranexamic acid, fluoride

Question 5

Select the correct combination explaining about medical properties

- a. Sodium fluoride ----- promotion of remineralization
- b. Strontium chloride ----- controls calculus formation
- c. Lari Ulu sodium sulfate --- controls calculus formation
- d. Dextranase ----- Prevention of halitosis
- e. Chlorhexidine ----- Hyperesthesia relaxation

Answer : a

Summary :

- a. The fluoride contained in toothpaste is sodium fluoride and stannous fluoride and these contribute to improving remineralization.
- b. Sodium fluoride and stannous fluoride control hypersensitivity. Medical ingredient inhibiting calculus is polyphosphate.
- c. Toothpaste has fundamental components and medical properties. Fundamental components are abrasives, humectant, binder, blowing agent, seasoning. Lari Ulu sodium sulfate is used as a blowing agent and helps in cleaning function.
- d. Dextranase is an enzyme resolving dextran. It has an inhibiting effect on production of calculus. Preventing halitosis by toothpaste is due to a masking effect and psychological effect by seasoning.
- e. Bactericidal agents contained in toothpaste are chlorhexidine, isopropyl methyl phenol and cetylpyridinium chloride.

Things to understand

Toothpaste is classified into cosmetics and quasi-drug based on Pharmaceutical Affairs Act. Medicinal properties of toothpaste are due to the components of the toothpaste that have specific positive effects. Most of the medical properties aim at preventing caries and periodontitis and some of them are for hemodia. Especially fluoride is significantly effective in preventing caries. For elderly people in whom it is not easy to receive dental treatment in comparison with healthy people, selection of toothpaste which is expected to prevent caries is required. Formulations of toothpaste are pastes, liquids, dental rinse, foam, powder, and if the patient cannot gargle enough after brushing, the form which requires less dosage such as foam is preferred.

Keywords

Toothpaste, prevention of dental caries, prevention of periodontal disease

Question 6

Select the choice explaining about fluoride toothpaste sold in Japan.

- a. Over 10%
- b. Over 20%
- c. Over 40%
- d. Over 60%
- e. Over 80%

Answer : e

Summary : The product share in Japan of fluoride toothpaste is 90%. It was about 10% 20 years ago.

Things to understand

Fluoride toothpaste is the most reliable for self-care

Keywords

Toothpaste, fluoride, cleaning

Question 7

Select the choice explaining about fluoride toothpaste.

- a. Fluoride has an effect on stomatitis.
- b. Fluoride has an effect on preventing dental caries by improving tooth substance.
- c. Fluoride has no effect in adults and elderly people.
- d. Fluoride has an effect on periodontal disease.
- e. To maintain efficacy of fluoride, no gargle is required.

Answer : b

Summary :

- a. Fluoride works on enamel and is effective in preventing dental caries but has no effect on mucosa. Therefore effect on stomatitis is not expected.
- b. Fluoride prevents dental caries by improving tooth substance, acid resistance and remineralization. In addition, fluoride has an inhibitory action on bacterial enzymes and may prevent dental caries due to inhibition of production of acid.
- c. Effect of preventing caries in adolescents' right after eruption of teeth is not expected, but intake of fluoride by dental enamel is implemented through life, so the effect of preventing caries in adults is expected. Also effect of preventing caries at the root which is frequently seen among elderly people is expected.
- d. Fluoride works on hard tissues and improves tooth substance and prevents dental caries by remineralization, but has no effect on preventing periodontitis.
- e. Excess gargling should be avoided when the effect of fluoride is considered. But fluoride has recommended allowance, thus gargling after brushing teeth with toothpaste is required.

Things to understand

Fluoride strengthens tooth substance and prevents dental caries. It is also effective on root surface caries so it is used for elderly people. But there is no effect on the oral mucosa.

Keywords

Fluoride, prevention of dental caries, safety

Question 8

Select the correct choice explaining about caution with the usage of electronic toothbrush.

- a. Caregiver needs to understand how to use an electronic toothbrush for elderly people.
- b. Effective brushing by electric toothbrush is by pushing the bristles strongly onto the surface of tooth.
- c. Effective brushing by electric toothbrush is to put bristles lightly to the surface of tooth and move the bristles repeatedly from posterior to anterior tooth.
- d. Effective plaque control by brushing without toothpaste cannot be expected.
- e. No need to consider about the angle between electric toothbrush and surface of tooth.

Answer : a

- Summary :**
- a. Electric toothbrush is heavier in comparison with ordinary toothbrush. As the handle is thicker, patients need caregivers' help.
 - b. Pushing bristle too hard damages the tooth surface and causes hypersensitivity by erosion of enamel and dentin.
 - c. Place the edge of bristles touching the tooth surface and brush the same part for about 10 seconds, and move the toothbrush slightly forward. This choice is not correct.
 - d. Brushing without toothpaste still has plaque control effect.
 - e. The angle of brushing should be differentiated by targeting parts of sides of tooth and occlusal surfaces.

Things to understand

Electronic toothbrush is useful but appropriate understanding about it is required. Placing the bristles from the wrong angle, does not eliminate plaque appropriately and may damage teeth and gingiva.

Keywords

Toothpaste, how to move toothbrush

Question 9

Select the choice which DOES NOT explain correctly about electric toothbrushes.

- a. Without correct knowledge about electric toothbrush, it may damage the teeth and gingiva.
- b. Pushing strongly on the tooth surface may eliminate plaque efficiently.
- c. In comparison with ordinary toothbrush, electric one is heavier and needs to be held strongly.
- d. It is useful for those who cannot use an ordinary toothbrush.
- e. It is designed for movements like turning, vibration and back and forth movements.

Answer : b

Summary :

- a. The special characteristic is the various movements of turning, vibrating, back and forth movements and eliminating plaque effectively without touching bristles too strongly onto the tooth surfaces. Pushing bristles onto tooth surface may damage tooth and gingiva.
- b. Electric brush can eliminate plaque well without pushing bristles too strongly on the tooth surface. If pushed strongly, more plaque will be left and also cause damage to tooth and gingiva.
- c. Generally speaking, electric toothbrush is heavier and has a thicker handle in comparison with the ordinary one. Therefore it should be held stably.
- d. Using an electric toothbrush may omit human effort from teeth brushing. So it is useful for elderly people and people with disorders.
- e. The special characteristic is the various movements of turning, vibrating, back and forth movements and eliminating plaque effectively without touching bristles too strongly onto the tooth surfaces. Pushing bristles onto tooth surface may damage tooth and gingiva.

Question 10

Select the appropriate combination explaining about secondary cleaning tools.

- a. Toothpick
- b. Interdental brush
- c. Gauze
- d. Sponge brush
- e. Kleenex

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

Summary : a. There are many people who use toothpick for cleaning between teeth, but toothpick is likely to damage the gingiva and is unhygienic. Specific tools for cleaning interdental areas such as dental floss or interdental brush should be selected.

b. Dental floss or interdental toothbrush should be chosen foremost for cleaning interdental areas. Gingiva recedes after the age of 30 due to aging and interdental brush is easily inserted between teeth.

c. Gauze is widely used in oral care for cleaning the tongue and coughed-up sputum adhering to mucosa, and for the massage which compensates gargling.

d. Sponge brush is widely used as well as gauze in oral care.

e. Kleenex is useful to wipe off saliva and dirt out of the oral cavity, however it is not appropriate to be used in the oral cavity.

Things to understand

Kinds and aims of secondary cleaning tools

Interdental brush and dental floss: cleaning between teeth appropriately

Sponge brush, cotton swab: wiping and massage of oral cavity.

Gauze: wiping oral cavity and eliminating coated tongue.

Keywords

Secondary cleaning tool

Question 11

Select the choice which DOES NOT correctly explain about secondary cleaning devices.

- a. Cleaning with only toothbrush can provide perfect cleaning if the occlusion is fine.
- b. Secondary cleaning tools are required to clean interdental parts sufficiently.
- c. Using a dental floss is recommended for cleaning in cases of occlusion without any space between teeth.
- d. Interdental brush is recommended for cleaning interdental parts with spacing between teeth.
- e. Secondary cleaning tools are not necessary to clean occlusal surfaces.

Answer : a

- Summary :**
- a. Even with correct occlusion, there are some parts which are likely to be left unclean. Thus, secondary cleaning tools are necessary and this choice is appropriate for the question.
 - b. Interdental parts which remain unclean need secondary cleaning tools.
 - c. Using a dental floss is recommended for cleaning in cases of occlusion without any space between teeth.
 - d. Interdental brush is recommended for cleaning interdental parts with spacing between teeth.
 - e. Food residue is likely to remain in the occlusal surfaces but it is easy to be cleaned sufficiently with just toothbrush.

Things to understand

Toothbrush alone cannot clean the oral cavity perfectly. A usage of accessory device on occasions is required.

Question 12

Select the appropriate combination explaining about dental discoloration.

- a. The color of plaque is white just like teeth and it is hard to differentiate between each other on gross examination.
- b. Plaque discoloration can be eliminated by only the dentist or dental hygienist.
- c. Plaque discoloring solution can provide sterilization as well.
- d. Main component of plaque discoloring solution is erythrocin.
- e. Discoloring plaque can show the parts which may remain uncleaned because of occlusion and brushing habit.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary : a. Plaque is white and it is hard to differentiate from teeth visually. Thus only daily oral care cannot show the parts left unclean.
b. Plaque discoloring can be implemented not only at the dental clinic but also at home. Discoloring solution and toothpaste for discoloring are available.
c. Main component of plaque discoloring solution is erythrocin and it has no sterilization effect.
d. Main component of plaque discoloring solution is erythrocin. Erythrocin has low toxicity and no carcinogenicity and teratogenicity has been reported.
e. Understanding the parts which may remain unclean because of occlusion and brushing habit may provide more efficient way of brushing teeth.

Things to understand

Ill effects of bacteria in the oral cavity is well known, but plaque is not easy to be distinguished on gross examination and is difficult to see the parts where plaque remains. Therefore it is very effective to judge the condition of oral hygiene by discoloring plaque with pigment.

The form of discoloring agent available is commonly liquid or paste. There are some toothpastes containing discoloring agents and that show the unbrushed parts in red, and it is friendly to be used in home oral care.

Keywords

Plaque discoloring

Question 13

Select the combination explaining about discoloring plaque.

- a. Solution contains alcohol.
- b. Form of solution does not affect discoloring ability.
- c. Less usage of discoloring solution is preferred.
- d. An edible dye is used in the solution.
- e. Kind of dye may differentiate stainability.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary : a. Pigment does not easily dissolve in water but dissolves in alcohol, thus alcohol is included in the discoloring agent. In addition alcohol dehydrates the surface of the biofilm and enables easy osmosis of the pigment .
b. Discoloring agent in gel or liquid form is preferred rather than tablet because osmosis is much easy in these forms. Therefore discoloring ability may be affected by the form of the agent.
c. Little dosage of the agent may result in failure of discoloring remaining plaque evenly or perfectly. Thus enough dosage of agent should be used.
d. Pigments in agents are Erythrosine or Phloxine which are edible.
e. Kind of dye may differentiate stainability. It is because of the difference in molecular mass of pigment and permeability to plaque.

Things to understand

Composition and characteristics of plaque discoloring solution

Keywords

Plaque discoloring solution, dye

Question 14

Select which is NOT appropriate as the sufficient way of helping people who cannot implement brushing by themselves.

- a. Taking stable and tireless position is preferred.
- b. There should not be excessive use of water.
- c. A usage of mouth wash and dental rinse is sufficient.
- d. Brushing teeth can be omitted if a patient has tea after meal.
- e. Brushing the posterior oral cavity may cause gag reflex, so it should be avoided.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 5

Summary :

- a. Providing perfect oral care takes 15 minutes. During oral care, patients need to be in a comfortable position.
- b. Plaque from the oral cavity cannot be easily washed out so cleaning with toothbrush is very fundamental. An excessive use of water may increase the risk of aspiration.
- c. Sufficient oral care which can be completed in a short time requires the use of dental rinse and mouthwash.
- d. Tea contains catechin and it has a sterilizing function, but it is not enough and cleaning with devices are still required.
- e. Avoiding brushing the posterior of the oral cavity may increase hypersensitivity. It absolutely requires to be brushed every time

Things to understand

Check points during nursing

- * To prepare devices in advance and to implement quickly and effectively
- * To pay careful attention to positioning so as not to tire the patient
- * Cleaning with device is fundamental and chemical cleaning is an accessory.
- * To check patient's reaction such as choking and vomiting reflex

Keywords

Way of helping

Question 15

Select the combination which is appropriate for sufficient way of helping people who cannot implement brushing by themselves.

- a. In case of bedridden patients, spine position with thrusting the jaw forward is preferred.
- b. Implementation of oral care by caregiver may be difficult in a sitting position, so Fowler's or semi-Fowler's position is preferred.
- c. Patients with trembling hands caused from Parkinson's disease or others need to be careful to select a soft toothbrush which is not likely to damage the gingiva.
- d. After eliminating bacteria by cleaning the oral cavity, it is required to improve salivary secretion and swallowing reflex by massaging or stimulating the tongue, gingiva and cheek.
- e. Taking the same position for a long time during oral care is difficult; toothbrush should be moved dynamically to complete the oral care in a short time.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

Summary : a. Sitting position is the most preferred during implementation of oral care. But lateral position or placing the upper body straight up is better for bedridden patients.
b. The face should be aimed downward and toward the side in Fowler's position or semi- Fowler's position.
c. Patients with trembling hands due to Parkinson's disease or cerebral vascular disturbances may damage their own gingiva, so to avoid this, selecting as soft a toothbrush as possible is required.
d. Paralysis is seen in many cases and function of the oral cavity decreases in those cases. It is essential to eliminate bacteria and stimulation by massage of tongue and cheek to improve saliva secretion is needed.
e. Toothbrush should be moved minutely. Moving the toothbrush dynamically cannot eliminate plaque sufficiently and wears out the surface of tooth.

Things to understand

Understanding positioning according to the situation and understanding general illnesses are important.

Keywords

Fowler's position, saliva secretion

Question 16

Select the choice which does NOT explain about the effects of toothpaste.

- a. Remineralization
- b. Prevention of gingival inflammation
- c. Prevention of halitosis
- d. Bleaching
- e. Decreased hypersensitiveness

Answer : a

Summary : a. One of the effects of toothpaste is to precipitate calcium from saliva in teeth and promote remineralization.
b. Toothpaste has an effect of inhibiting or preventing inflammation by antiplasmin.
c. Toothpaste has an effect of inhibiting production of methylcaptan which causes halitosis.
d. Teeth become whiter after brushing with toothpaste because plaque is eliminated, not because of bleaching. Toothpastes in Japan have no bleaching effect.
e. Toothpastes contain aluminum lactate that decreases hypersensitiveness.

Things to understand

Eliminating plaque not just with toothbrush alone, but the combined use with toothpaste improves the effect. Understand components in the toothpaste helps the caregiver to select the better toothpaste.

Keywords

Fluoride, anti-inflammation agent, aluminum lactate

Question 17

Select the law which defines toothpastes.

- a. Medical law
- b. National Health Promotion
- c. The Drugs, Cosmetics and Medical Instruments Act
- d. The dietician method
- e. The food hygiene law

Answer : c

Summary : The Drugs, Cosmetics and Medical Instruments Act defines pharmaceutical products, quasi-drug, cosmetics and Instrumentation.

Things to understand

Toothpaste is classified as quasi-drug or cosmetics.

Keywords

Toothpaste, oral cleaning, The Drugs, Cosmetics and Medical Instruments Act

Question 18

Select the choice explaining about the purpose of fluoride toothpaste.

- a. Preventing deposition of plaque
- b. Preventing gingival inflammation
- c. Preventing halitosis
- d. Preventing deposition of calculus
- e. Preventing dental caries

Answer : e

Summary : Fluoride toothpaste promotes remineralization and calcium deposition. Fluoride always promotes remineralization and inhibits the production of acid which is a factor of caries.

Things to understand

Fluoride toothpaste is classified as quasi-drug. Toothpaste without fluoride is used for the purpose of cleaning and is classified as a cosmetic.

Question 1

Select which is NOT appropriate as a component for mouth rinse or gargle.

- a. Povidone iodine
- b. Benzethonium chloride
- c. Sodium bicarbonate (NaHCO_3)
- d. Glutaral
- e. Azulene

Answer : d

Summary :

- a. Povidone iodine is a major medical ingredient in Isodine gargle and it is an effective sterilizing agent. It should be carefully applied to a patient with hypersensitivity to iodine or thyroid dysfunction.
- b. Benzethonium chloride is applied for not only sterilizing the skin and submucosa but also sterilizing medical devices.
- c. Azulene and Sodium bicarbonate are contained in Hachiazule for gargles. Dissolving 1 pack into 100 CC of water makes a concentration of 2% sodium bicarbonate which is used for dissolving mucus.
- d. Glutaral is a strong antimicrobial and it is used for sterilizing medical devices. It has strong a stimulus and it is not applicable for mucosa and human body.
- e. Azulene has anti-inflammatory effects, beneficial for advancing cure of oral inflammation experimentally. It has a very mild stimulus to the human body, it is frequently applied to multiple stomatitis such as radiation stomatitis.

Things to understand

To understand components of mouth rinse and gargle and beneficial impact of each

Keywords

Mouth rinse, gargle, azulene

Question 2

Select the correct combination explaining about gargles.

- a. Gargles are used for reducing bacteria in the oral cavity.
- b. Gargles are only in liquid form.
- c. When a patient accidentally swallows the gargle, starch liquid should be taken for emetic action or washing of the stomach.
- d. Gargles containing mainly iodine have a strong sterilization and anti bacteria' action by oxidation.
- e. Cationic surface active agents have not enough detergency but strong bactericidal capacity in comparison with those of anion surfactants.

Combination : 1 a, b 2 b, d 3 c, d 4 c, e 5 d, e

Answer : 5

Summary : a. Gargles are used for sterilization and preventing infection in the oral cavity. The purpose of using gargles is not for creating an antiseptic condition in the oral cavity. The purpose of sterilization is killing bacteria or blocking development or weakening the pathogenicity to prevent infection. In a strict sense, it is not antiseptis.

- b. Gargles are in liquid, powder or granulation form.
- c. Generally speaking, gargles have low drug toxicity and accidental intake of gargle does not dramatically affect the human body.
- d, e. Correct explanation

Question 3

Select which is INCORRECT for general gargles.

- a. Rattled gargling is the way to clean posterior pharynx.
- b. Gargling may be effective in cleansing of the oral cavity to eliminate food residue if subsequent repeated for 15 seconds. .
- c. Gargling plays an important role in preventing infection of respiratory apparatus by cleaning and moistening of the oral cavity, pharynx and part of the larynx.
- d. Some conditions such as mentation, ability to bend the head backwards and of expectoration of water in a patient are required to instruct how to gargle.
- e. Several strong cleaning mouth and gargling a day do not require eliminating dental plaque and calculus. To strongly clean the mouth to eliminate dental plaque and calculus, gargling everyday is enough.

Answer : e

Summary : a. Gargling is of two kinds - bubbled gargling and rattled gargling. Generally, both bubbled gargling and rattled gargling are called "gargling".

b. In oral care field, it is recently said that gargling may be effective for eliminating food residue and bacteria from the oral cavity and may prevent aspiration pneumonia caused from silent aspiration.

c. Gargling may prevent aspiration pneumonia by reducing the number of bacteria in the oral cavity and pharynx. Cleaning of oral mucosa and brushing teeth may increase the effect.

d. In a case of difficulty of gargling, introduction of other ways of oral care, modification on the oral care plan and assimilating oral care into the patient's daily life according to the individual's pace and degree of impairment are required.

e. To clean the oral cavity with only gargling is not enough and a devised cleaning with brush, gauze and sponge is required. Cleaning the oral mucosa and tongue with soft toothbrush after removal of denture is effective.

Keywords

gargling

Question 4

Select which is NOT appropriate for bubbled gargling.

- a. Eliminating food residue
- b. Moistening oral mucosa
- c. Stretching lips, tongue and cheek
- d. Eliminating plaque
- e. Preventing halitosis

Answer : d

Summary :

- a. Bubbled gargling is efficient for washing out food residue remained in the oral cavity. This is not appropriate for the question. The other efficacy of bubbled gargling is to reduce the number of bacteria in the oral cavity.
- b. Oral mucosa may be temporarily moistened with bubbled gargling. So this choice is not appropriate for the question. It also stimulates the saliva glands by exercising the lingual muscles and buccinator muscles. .
- c. Bubbled gargling requires closed mouth and puffed cheeks. Orbicularis oris and buccinator muscles are exercised and stretched. So this choice is not appropriate for the question.
- d. There are some products emphasizing plaque elimination by chemical action though, basically only cleaning teeth with devices can be expected to assuredly eliminate plaque. This choice is appropriate for the question.
- e. Some kinds of mouth rinse prevent halitosis. So this is not appropriate for the question. In addition some mouth rinses containing fluoride can be expected to prevent dental caries.

Things to understand

This question is checking your knowledge about the difference between bubbled gargling and rattled gargling. Generally gargling is classified in to rattled gargling which requires holding water in the mouth and pulling the jaw upward (pull head-back downward) and cleansing the posterior pharynx and bubbled gargling which cleanses the oral cavity anterior to the fauces. Rattled gargling may reduce the number of bacteria and virus in the pharynx preventing respiratory infection. And also depending on agents used, it has an anti-inflammatory action in the pharynx.

On the other hand, bubbled gargling may reduce the number of bacteria in the oral cavity and eliminates food residues. Also it has a moistening effect on the oral mucosa and, depending on type of mouth rinse, prevents halitosis and dental caries.

Keywords

Bubbled gargling, gargling

Question 5

Select which is INCORRECT.

- a. Gargling with water is sufficient.
- b. Gargling has a protective effect on the mucosa.
- c. Gargling only after meal is effective.
- d. Washing hands should be implemented before gargling.
- e. Only an implementation of gargling cannot clean the oral cavity.

Answer : c

Summary : a. Gargling with water has an efficacy though, in case of inflammation in oral cavity or after removal of a tooth or in flu or cold weather, a gargle is for chemical cleaning.

b. The use of gargle prevents dryness of mucosa besides sterilization and cleansing.

c. Gargling not only after meal but also inbetween the day or before going to bed is recommended. One gargle every 3 hours can control bacterial growth in the oral cavity.

d. Washing hands before meal can prevent invasion of bacteria and viruses from fingers into gargles and maintaining the efficacy is important.

e. Cleansing the oral cavity is of two kinds chemical or by devices. Cleansing without a toothbrush or floss is not enough to make the oral cavity clean.

Keywords

gargle

Question 6

Select the correct choice regarding oral care for a patient who is unable to gargle.

- a. For a patient who is unable to gargle because of hemiplegia, the paralytic side should be placed facing down as the position for oral care.
- b. In case of cleansing oral cavity with water instead of gargling, 60 degree of water temperature is appropriate for promoting blood circulation.
- c. For a patient who cannot gargle because of tube feeding, implementing oral care right after nutrient injection is preferable.
- d. A patient who cannot gargle because of decreased consciousness, avoiding cleansing the oral cavity with water is better.
- e. Brushing teeth for a patient who cannot gargle does not require a toothpaste.

Answer : e

Summary : a. If a patient is supine due to inability to sit up, lateral position with the affected side facing downward should be taken. It may result in avoiding aspiration by the accidental intake of water in pharynx on the unaffected side by the attraction of gravity.

b. Scalding hot water may cause abrasion of the oral mucosa, 35-36 degree which is similar to human body temperature is preferable. If the temperature is still too high for a patient, the temperature should be cooled to 30 degree.

c. A stimulus by touching the tongue base/ pharynx/ larynx may evoke vomiting and it may result in asphyxiation or pneumonia by aspirating vomitus, implementing oral care right after nutrient injection should be thus avoided.

d. A patient with decreased consciousness; may have poor oral hygiene. Therefore cleansing the oral cavity is required. But there is a risk of aspiration, so suctioning of water should be carefully paid attention to.

e. Even if a patient cannot gargle, eliminating plaque sticking to teeth by device cleansing with a toothbrush is required. But using a toothpaste requires gargling, so brushing teeth without toothpaste is appropriate.

Things to understand

Factors making gargling are paralysis and dysphagia among others. Therefore the caregiver should understand the positioning in patients with paralysis to prevent aspiration during gargling. Also knowledge about the appropriate timing to give oral care for a patient on tube feeding and ways to reduce the need for gargling (such as dry brushing teeth) are required.

Keywords

Gargling, aspiration, position

Question 7

Select the correct choice regarding a patient who may not be able to gargle during oral care.

- a. A patient with osteoporosis
- b. A patient with pneumonia
- c. A patient with facial paralysis
- d. A patient with dysphagia
- e. A patient with dementia

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 5

Summary :

- a. A patient with osteoporosis may have an osteoporotic fracture caused from pathological bone loss and a bone structure breakdown though osteoporosis does not disable gargling, so this choice is not appropriate for the question.
- b. Pneumonia may cause fever and respiratory insufficiency though, unless it is severe, pneumonia does not directly inhibit gargling and this choice is not correct.
- c. When the range of facial paralysis reaches branches of buccinator muscles with marginal mandibular branch, closing the lips becomes difficult and it may result in disabling gargling. So this choice is correct for the question.
- d. Patients with dysphagia often show difficulty to close lips and pharyngeal cavity, and aspiration become easy, so it may result in disabling gargling. This choice is correct for the question.
- e. A patient with dementia often cannot understand how to gargle, so it results in disabling gargling.

Things to understand

This question is confirming your knowledge regarding the state of disabling of gargling. A patient who cannot gargle has lost function in the area of lips and larynx, especially in the first and second phase of feeding. Caregivers should understand that a patient who cannot gargle always has a risk of aspiration during oral care. Factors causing dysphagia are diseases in the oral or laryngopharyngeal cavity, cerebrovascular accident, neurological diseases and aging. If a patient with facial palsy caused from cerebrovascular accident cannot close the lips, it results in disabling gargling. On the other hand, a patient with dementia cannot understand the act of gargling and is unable to raise the mandible and, properly use the orbicularis oris muscle, zygomatic muscle and tongue muscle, and it may result in disabling gargling.

Keywords

Disabling gargling, dysphagia, dementia

Question 8

Select the right choice regarding oral care for a patient who chokes easily.

- a. A patient who chokes easily should keep his upper body slightly bent-backwards to avoid the risk of aspiration.
- b. A patient who easily chokes does not require teeth brushing with toothpaste.
- c. Oral care for a paralyzed patient lying down and who easily chokes should take the position of unaffected side facing upward.
- d. Oral care for a patient who easily chokes should be given with a feeding cup from the paralytic side of the mouth.
- e. Cleansing the oral cavity for a patient who chokes easily should be done with water pick or syringe with the head bent-backward posture.

Answer : b

- Summary :**
- a. For preventing aspiration, slightly bending the upper-body forward prevents water from easily entering the trachea by gravity.
 - b. Usage of toothpaste requires gargling to remove retained toothpaste from the oral cavity. Therefore, using toothpaste for a patient who is unable to gargle is not recommended.
 - c. In the case of a paralyzed patient lying down and easily chokes, the water goes down by gravity, so the position with the unaffected side downward is preferable.
 - d. Oral care for a patient who easily chokes should be given with a feeding cup from the unaffected side which has sensation.
 - e. Cleansing the oral cavity for a patient who chokes easily should be done with water pick or syringe with the head bent-forward posture.

Things to understand

Caregivers should understand anatomy of trachea and esophagus and position (head, upper body) which may prevent water from entering the trachea by gravity.

Keywords

Choking, aspiration, position

Question 9

Which is the most common precipitating position of choking during the oral care for an elderly who easily chokes?

- a. Sitting position
- b. Face-up position
- c. Lateral position
- d. Fowler's position
- e. Semi-Fowler's position

Answer : b

Summary :

- a. Sitting position is the best position to prevent aspiration, so this choice is not appropriate for the question. At the same time, sitting position is the most fatigable position so caregiver should consider the health of the patient.
- b. Face-up position is the most common precipitating position causing aspiration and this is the appropriate choice for the question. In case of giving oral care for a patient with face-up position, head (face) should be turned to a side and careful and sufficient suctioning is required.
- c. Lateral position with paralytic side placed upward and unaffected side placed downward during oral care may lead to aspiration and should be avoided.
- d. Fowler's position is the second most preferred position to prevent aspiration. So this choice is not appropriate for the question.
- e. Semi-Fowler's position is the preferred position to prevent aspiration. So this choice is not appropriate for the question.

Things to understand

This question inquires about the knowledge of "choking" and its management. Choking is caused by water entering the trachea accidentally which is supposed to remain in oral cavity or appropriately swallowed. It is generally called cough reflex and choking is one of the symptoms that may indicate aspiration.

The best position for preventing aspiration is a sitting position though, it fatigues the elderly. The Fowler's position is semi-sitting position of keeping the upper body and head 45 degree - inclined is less fatigable and has a less chance of causing aspiration. Lateral position with the paralytic side placed upward and the unaffected side placed downward during oral care avoids aspiration. On the other hand, face-up position is the most common precipitating position of aspiration and it has a high risk. In the case of giving oral care for a patient with face-up position, his head (face) should be turned to a side and careful and sufficient suctioning is required. Semi-Fowler's prevents aspiration by face-up position with pulling down the mandible and the head bending forward.

Caregivers are required to understand appropriately the patient's condition and choose the appropriate and safe oral care which is least harmful for the patient.

Keywords

Choking, position, face-up position

Question 10

Which is an INCORRECT consideration of age change when making the elderly gargle?

- a. Decrease of velo-pharyngeal function
- b. Decrease of lip closure function
- c. Decrease of tongue-movement & function
- d. Decrease of esophageal function
- e. Decrease of cough reflex

Answer : d

Summary : a. Velo-pharyngeal function should be considered because the function is implemented by the muscle sling such as levator veli palatini muscle, tensor palati muscle, palatoglossal muscle, pharyngopalatine muscle and uvulae muscle, which forms the soft palate. So this choice is not appropriate for the question.

b. Decrease of the function of orbicularis oris muscle, buccinator muscle, masticatory muscle group and muscular strength decreases lip and mandibular movements and decreased lip closure function should be considered. This choice is not appropriate for the question.

c. Aging atrophies intrinsic muscles of the tongue and decreases tongue-movements & function. So tongue-movement & function should be considered and this choice is not appropriate for the question.

d. Aging causes diminished peristalsis of esophageal and gastroesophageal reflux but these are not connected to "gargling", so this choice is appropriate for the question.

e. Decreased cough reflex may cause aspiration pneumonia because of a difficulty in taking out aspirated inflow from trachea. So this choice is not appropriate for the question.

Things to understand

This question inquires about the knowledge of age change in elderly. The most important age change for making the elderly gargle is age change of swallowing function. Drop of the sense threshold in oral cavity and myofunctional muscles which form the lips, oral cavity and pharynx may cause dysfunction of lip closure, tongue movement, velo-pharyngeal function and it results in aspiration. In addition, an embellishment of other general and local symptoms such as a decrease in immune function and protective airway reflex (cough reflex) may cause aspiration pneumonia.

Keywords

Elderly, gargling, age change

Question 1

Select which is INCORRECT regarding dentures

- a. A denture falls roughly into 2 categories - partial denture or full denture.
- b. A full denture falls into 2 categories of resin base denture or metallic base denture.
- c. An Immediate denture is a denture set right after dental extraction and it requires mucosa side of the baseplate to be modified on a regular basis.
- d. An Implant denture reduces the load of the baseplate with adhesion/grasping/ retention from artificial structure set in the jaw-bone located under the soft tissues.
- e. A denture which covers a residual ridge with no teeth is a mandibular and maxillary denture.

Answer : e

- Summary :**
- a. In the dentition with partial teeth loss, the denture covering the partial residual ridge is called a partial denture and the one covering the entire residual ridge is called a full denture.
 - b. The full denture falls into 2 categories of resin base denture or metallic base denture.
 - c. An Immediate denture is a denture set right after dental extraction and it requires mucosa side of the baseplate to be modified on a regular basis. And it is prepared on a pattern which is taken before dental extraction.
 - d. An implant consists of an artificial dental root embedded in the missing tooth region and a prosthetic appliance in the form of crown fixed to the embedded artificial root. An implant denture connects the denture to the artificial root.
 - e. A mandibular and maxillary denture is used in case of jaw fracture by tumor, accident, inflammation or congenital abnormality.. It aims at replacing the missing bone region. In addition it is a prosthetic appliance equipped with artificial teeth with a function and form of quasi-denture.

Things to understand

Dentures are classified by purpose, materials and form.

Keywords

Denture, kind

Question 2

Select the type of of removable prosthetic appliance.

- a. Full denture
- b. Bridge
- c. Complete cast crown
- d. Facing crown
- e. Post crown, dowel crown

Answer : a

Summary :

- a. Full denture is a denture which is given to a patient without teeth. It is basically structured with artificial teeth and baseplate and is removable.
- b. Bridge is given to a patient with few missing teeth, it is artificial teeth that replace the missing teeth using the support of adjacent natural teeth or implants as abutments.
- c. Complete cast crown is a full-covered crown prepared by a casting process. It is mostly used for a full-covered crown for the molar region and if fixed to the abutment tooth with cement.
- d. Facing crown attaches a high value to aesthetics and it is a crown with partially uses white material for facing. In many cases, it is fixed to an abutment tooth with cement.
- e. Post crown, dowel crown is a dental abutment which includes the crown and post in one and it is called post-crown and is fixed with cement.

Things to understand

Understanding characteristics of various artificial dentitions is required.

Keywords

Kinds of artificial dentitions, removable appliance, cement

Question 3

Select the appropriate choice for removable artificial dentition.

- a. Instructions to wear the artificial dentition and biting it are required.
- b. Mirror is not needed while removing an artificial dentition.
- c. Well-dried artificial dentition is appropriate for wearing.
- d. The side of artificial dentition should be turned horizontally and worn from the molar region.
- e. When removing a complete maxillary denture, pulling forward strongly makes it easy to remove the denture.

Answer : d

- Summary :**
- a. There is a risk of damage and transformation of spring (clasp), instructing not to bite an artificial dentition is thus required. Caregivers are required to check that the patient is not biting the artificial dentition while wearing it.
 - b. Checking the path of insertion and clasp-anchored tooth using a mirror is required. When setting new artificial dentition, the patient is likely to be inexperienced and practicing wearing the denture with a mirror should be instructed.
 - c. When wearing full dentures, dried mucosa side of the artificial dentition and oral mucosa may cause decreased retention, thus artificial dentition should be wet before insertion.
 - d. When wearing full dentures or large partial dentures, the side of artificial dentition is turned horizontally and inserted from the molar region. It may be easy to use a finger to pull out the angle of the mouth sideways.
 - e. When removing a complete maxillary denture, holding the ridge of artificial teeth and pulling it down with a finger by inserting air into the space between artificial dentition and the mucosa makes it easy to remove. Pulling upper lip upward may also make it easy for denture removal by the insertion of air into the space.

Things to understand

Caregivers are required to understand the proper way of placing and removing an artificial dentition depending on its kind.

Keywords

Artificial dentition, remove/set

Question 4

Select the choice which is not required to pay attention to when removing partial dentures.

- a. The form of residual ridge
- b. The form of artificial teeth
- c. The location of clasp-anchored tooth
- d. Amount of undercut of clasp-anchored tooth
- e. Quality of material of clasp

Answer : b

Summary : a. If there is an undercut on the residual ridge, path of insertion of artificial dentition is designed so as not to be obstructed by a part of undercut. It should be paid attention while wearing and removing an artificial dentition.
b. The form of artificial teeth is regardless.
c. Clasp is a dental abutment of a partial denture set to a clasp-anchored tooth. The location of a clasp-anchored tooth is well related to maintaining, sustaining and gripping the partial denture and it affects insertion and removal of the denture.
d. Clasp is a dental abutment of a partial denture; it affects maintaining, sustaining and gripping partial denture.
e. Clasp are either wire clasp or cast clasp. Wire clasp is more fragile in comparison with cast clasp.

Things to understand

Knowledge about factors affecting the removal of artificial dentition is required.

Keywords

Partial denture, removable appliance, maintaining artificial dentition

Question 5

Select the correct choice for managing an artificial dentition.

- a. Water in which the dentures are kept should be changed once a week.
- b. An artificial dentition should be removed and dried while sleeping.
- c. A predetermined container is required and it should be kept clean.
- d. An artificial dentition is dirty so it should be sterilized by boiling hot water.
- e. An artificial dentition is dirty so it should be sterilized by alcohol.

Answer : c

- Summary :**
- a. Bacterial deposit and denture plaque adhere to the artificial dentition, and water in which the dentures are placed are polluted from those and should be changed every day.
 - b. An artificial dentition easily transforms and fractures when it is dry, thus it should be stored in a wet condition.
 - c. Denture plaque adheres to the artificial dentition, a predetermined container is required and it should be kept clean.
 - d. Bacterial deposit adheres to the artificial dentition and it is unhygienic, it may transform if put into burning hot water and it may become unsuitable.
 - e. Strong agents such as alcohol may cause transformation of the artificial dentition.

Things to understand

It is predicated that artificial dentition is unhygienic and it should be kept clean as much as possible.

Keywords

Management of artificial dentition, sterilization of artificial dentition, removal of artificial dentition

Question 6

Select the correct choice of device used for mending artificial dentition at chair side.

- a. Blowlamp
- b. Dental air turbine
- c. Dental engine
- d. Heat-curing resin
- e. Flask

Answer : c

Summary : a. Blowlamp is used for the compound at impression taking.
b. Dental air turbine is used for cutting.
c. Dental engine is widely used in various situations such as repairing and polishing bonded surface for dental prosthesis repair.
d. Heat-curing resin is usually used for making the baseplate and it is mainly used in a dental laboratory.
e. Flask is sometimes used in a dental laboratory when repairing broken baseplate indirectly. It is used in a dental laboratory not at chair side.

Things to understand

Various devices and materials are used in the dental field, and you should understand devices which are used at chair side.

Keywords

Chair side, artificial dentition, restoration

Question 7

Select the correct choice for oral care after removal of artificial dentition.

- a. A special tooth brush and tooth paste is required for cleaning an artificial dentition.
- b. Cleaning artificial dentition should focus on easily soiled parts of artificial teeth .
- c. Alcohol sterilization effects cleaning an artificial dentition.
- d. Oral cavity is cleaned by brushing and gargling.
- e. Careful brushing is required of the teeth located next to artificial dentition.

Answer : e

Summary : a. A special tooth brush and tooth paste is required for cleaning an artificial dentition and after that, chemical cleansing with a denture cleanser is preferred. Toothpaste with strong polishing ability is effective for eliminating stains. However it should not be used because it causes abrasion of resin base.

b. The sides of artificial dentition facing the lips, tongue and cheek are wellly grinded, thus dirt does not easily adhere. Artificial teeth have a complicated structure; however saliva cleansing makes an artificial tooth stain-resistant. Mucosa side facing the mandibular or maxillary region has a complicated structure without cleansing, and is easy to become dirty.

c. The surface of resin becomes cloudy and hardwith use of alcohol. In addition, the use of alcohol may make alter artificial dentition it is easily broken.

d. Without proper oral sensations, , good lip seal, and and movements of tongue and cheek to spit out water, cleaning by wiping method is recommended in comparison with gargling method.

e. Teeth located next to artificial dentition and clasp-anchored tooth is especially easy to be adhered by food debris and becomes carious because of dental plaque, careful brushing is thus required.

Things to understand

Caregiver should understand cleansing method corresponding to artificial dentition and remaining teeth and the region which requires focused cleaning.

Keywords

Cleaning an artificial dentition, oral care

Question 8

Select which is the INCORRECT oral care after removing artificial dentition.

- a. An artificial dentition after removing should be deposited immediately.
- b. Cleansing of the oral cavity is required.
- c. Brushing the oral cavity is required.
- d. An artificial dentition removed requires cleansing.
- e. An artificial dentition removed requires hot water sterilization.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 2

Summary : a. Depositing an artificial dentition with dirt remaining leads to microbiological growth, thus the first requirement is to eliminate the dirt on artificial dentition.
b. Eliminating dirt remained in the oral cavity is important as well.
c. Brushing residual teeth and brushing and massaging oral mucosa is also effective.
d. Removed artificial dentition requires the elimination of dirt.
e. Pouring hot water on artificial dentition transforms the plastic and this choice is not correct for oral care.

Things to understand

The appropriate way of removing artificial dentition

Question 9

Select the correct combination which includes generally used denture adhesives.

- a. Tissue conditioner
- b. Liner
- c. Adherence agent
- d. Denture adhesive
- e. Soft liner

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 4

Summary :

- a. Tissue conditioner is used in the treatment of tissues and this is not the correct choice. It is an acryl retarder and it is placed between baseplate and mucosa and changed weekly to heal the mucosa.
- b. Liner is used for refitting dentures and it is not the correct choice. There are 2 kinds of liner namely autopolymerizing resin in direct method and heat-curing resin in indirect method.
- c. Adherence agent is used for making denture stable by the patient himself and it is the correct choice. In addition, in the use of adherence agent, the transformation of mandibular location may be expectable and abundance of caution is required.
- d. Denture adhesive is used to increase the stability of the denture by the patient himself and it is the correct choice. The material chemically reacts with starch in saliva to become sticky which is used for denture adhesiveness.
- e. Soft liner is used for refitting dentures as with liner, thus it is not the correct choice. While liner is resin, soft liner is flexible and soft and it is used for a patient with thin mucosa.

Things to understand

You are required to numerate materials used in denture adhesive and roughly explain about these materials.

Keywords

Denture, adhesive agent

Question 10

The Japanese denture adhesive network sets voluntary criteria for precautions for use and stipulates the criteria on merchandise. Select the choice which is NOT stipulated on merchandise.

- a. Long-term use has negative effects.
- b. A patient needs to go to a dentist if there is no effect with the use.
- c. A denture adhesive is ineffective if the denture with dental adhesive is dried.
- d. A denture adhesive is absolutely temporary.
- e. Mechanical cleaning with a special brush for denture is required.

Answer : e

Summary :

- a. Denture adhesive is put between denture palate and oral mucosa for improving compatibility and stability of denture. The non-appropriate use may cause changes in the mucosa and occlusal position. For this reason, long-term use is not appropriate and this choice is not the answer. It is stipulated on the product.
- b. As mentioned above, long-term use is not appropriate and if there is no effect after usage it may require fundamental adjustment and correcting the denture. It is stipulated on the product.
- c. Denture adhesive may keep materials wet by moisturizing ingredients to maintain its elasticity and viscosity. These materials are adhered to the denture in dryness, so this choice is not appropriate and it is stipulated on the product.
- d. The inappropriate use of denture adhesive may cause changes in the mucosa and occlusal position so a long-term use should be avoided. Use of denture adhesive is the first measure in view of not being able to go to a dentist and it should be understood well and not appropriate for the answer. It is stipulated on a product.
- e. A denture adhesive is compounded by soft materials and mechanical cleaning with a chemical denture cleansing agent is preferable to clean the denture well and this choice is appropriate for the answer. However this issue is not stipulated in the voluntary criteria.

Things to understand

Caution for the usage of denture adhesive.

Keywords

Denture, denture adhesive

Question 11

Select the choice for the main component of an adherence agent.

- a. Vinyl acetate
- b. Carboxymethylcellulose sodium
- c. Polyolefin
- d. Polysulfide
- e. Polycarbonate

Answer : a

Summary : a. Vinyl acetate is the main component of an adherence agent.
b. Carboxymethylcellulose sodium is a component of some kinds of denture adhesives and this is not appropriate for the answer.
c. Polyolefin is not appropriate for the answer.
d. Polysulfide is a main component of impression materials of polysulfide rubber and it is not appropriate for the answer.
e. Polycarbonate is the main component of denture base material and this choice is not appropriate for the answer.

Things to understand

Understanding kinds and components of denture adhesives and stabilizers

Keywords

Denture, adhesive, stabilizer

Question 12

Select the choice which correctly explains denture adhesives and stabilizers.

- a. Creamy type is resilient and it may provide pain relief.
- b. Denture adhesives is classified as denture adhesives and adherence agents the difference being in the way of causing stability of the denture in the oral cavity.
- c. Powdery type stabilizer is easier to use and does not thicken. It can also be used repeatedly.
- d. Sheet or tape type of stabilizer mainly composes of polyvinyl acetate resin and ethanol.
- e. Paste type stabilizer is classified as denture adhesive and it absorbers saliva to promote adhesion.

Answer : b

Summary : a. Creamy type stabilizers are classified as denture adhesives and it absorbs saliva to promote adhesion that makes the denture stable.
b. Denture adhesive absorbs saliva to promote adhesion and the adhesion makes the denture stable. Adherence agents are rubbery and cushioned. They fill the spaces between oral mucosa and dentures to make it stable.
c. Powdery type stabilizer absorbs water in the oral cavity for adhesion. It does not thicken but it is easily washed out by saliva and is undurable.
d. The stabilizer containing polyvinyl acetate resin and ethanol is cushioned. Sheet and tape type stabilizers contain CMC natrium and facula.
e. Paste type is also called cushioned type and it classified as adherence agent. It fills the spaces between oral mucosa and denture to make it stable.

Things to understand

Understanding kinds, characteristics and materials of denture stabilizers

Keywords

Denture, adhesive agent, stabilizer

Question 13

Select the correct choice on how to use denture stabilizers.

- a. Types of stabilizers are - powdery, creamy, granular and tape.
- b. Any type of stabilizer may stabilize according to the temperature in the oral cavity. It does not cause a change of occlusal position.
- c. Stabilizer is used to stabilize a denture temporarily and a long-term usage should be avoided.
- d. Stabilizer contains lots of medicinal properties for the oral mucosa, and it can provide mucosa pain relief.
- e. A long-term usage does not affect jawbone, temporomandibular joint and masticatory muscles.

Answer : c

- Summary :**
- a. Types of stabilizer are - powdery, creamy and tape. Powdery and creamy types have a defect of being easily washed out by cleansing. Repeatedly usable types has a defect of being soiled..
 - b. Most of the stabilizers stabilize according to oral cavity temperature; sheet and tape types sometimes change the occlusal position.
 - c. The usage of stabilizer should be temporary, and a long-term usage may cause some changes in the oral mucosa and jawbone and also it may make the denture dirty.
 - d. Denture stabilizer temporarily fills the gaps between oral mucosa and denture. It does not contain medicinal properties which may cure wounds.
 - e. A long-term use of stabilizer may cause a continual compression and it causes a change in jawbone and the change may result in affecting the temporomandibular joints and masticatory muscles.

Things to understand

Understanding kinds, appropriate usage and condition of use of stabilizer is required. You should appropriately use and apply stabilizer with the deep understanding of factors mentioned above.

Keywords

Stabilizer, how to use, characteristic

Question 14

Select the combination which is appropriate for denture cleanser.

- a. Denture cleansers containing enzyme system and hypochlorous acid system provide mechanical cleaning by a bubble.
- b. Denture cleansers containing hydrogen peroxide system can eliminate microorganisms clinging to denture surfaces.
- c. Cleansers with enzyme system have a strong effect in eliminating microorganisms clinging to denture surfaces.
- d. Cleanser with hypochlorous acid system kills bacteria and microorganisms by dissolving organic substance.
- e. There are some cleansers which tarnish metal and plastic used in dentures.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 5

- Summary :**
- a. Effective mechanical cleaning by a bubble is by hydrogen peroxide system. But this type of cleanser is not able to eliminate bacteria such as Candida and causes tinting.
 - b. Denture cleansers with hydrogen peroxide system utilize mechanical function of bubbles from blowing agent and oxidation from hydrogen peroxide solution. It can eliminate dirt on dentures but does not have sufficient effects on eliminating bacteria and microorganism on denture surfaces.
 - c. Cleanser with enzyme system has a strong effect in eliminating Candida and other bacteria existing in denture plaque, but does not have sufficient effect on eliminating dirt from denture surfaces and on stained teeth.
 - d. Cleanser with hypochlorous acid system discolors the stain on denture surfaces and kills bacteria and microorganisms by dissolving mucin and organic substances.
 - e. Cleanser with hypochlorous acid system tarnishes metal and plastic used in dentures. So a long-term use of this cleanser should be avoided.

Things to understand

Understanding kinds, characteristics and functional mechanism of denture cleanser is required.

Keywords

Denture cleanser, oral care

Question 15

Select which is NOT an appropriate component for denture cleanser

- a. Peroxide
- b. Hypochlorous acid
- c. Acid
- d. Oxygen
- e. Disinfectant

Answer : e

Summary : a. Porident is the most popular home-care denture cleanser.
b. Hypochlorous acid has a big effect on cleansing the denture, at the same time there is a negative effect on the dentures.
c. Acid has an effect on eliminating tartar from dentures.
d. Oxygen is used for eliminating dirt from soft materials.
e. Disinfectant is generally not a component of denture cleansers.

Things to understand

Positive and negative effects of components of denture cleansers are differentiated.

Question 16

Select the combination which is appropriate for taste disorders caused by dentures.

- a. Taste disorder is one of the physiological phenomena associated with aging.
- b. The change of taste with use of dentures is often broken off by wearing a denture.
- c. Presumptions about dentures do not influence taste.
- d. While wearing full dentures even which do not cover the palate, the taste is affected.
- e. Taste disorders with dentures also occur from disturbed tongue exercises.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

- Summary :**
- a. Taste disorders are often seen in elderly people regardless of use of dentures. There is a big difference in perception of taste in elderly people in comparison with those in younger people. From this point, it can be said that taste disorder is one of the physiological phenomena with aging.
 - b. Wearing dentures may temporarily disturb several functions and it results in disorders such as taste disorder and articulation disorder. But these generally resolve after proper adaptation to the denture.
 - c. Presumptions such as negative images about dentures are factors causing taste disorders.
 - d. Disturbances to the tongue touching the palate and disturbances in touch and taste stimuli of the palate causes taste disorders. Thus compared to the general full dentures, full dentures which do not cover the palate are less likely to cause taste disorders.
 - e. Taste occurs from pressing foods onto the hard palate and tongue. Therefore disturbed tongue movements by ill-designed and ill-fitting dentures may also cause taste disorders.

Things to understand

Understanding factors of taste disorders and influences of dentures on taste is required.

Keywords

Denture, taste disorder

Question 17

Select the correct combination which explains discoloration of denture.

- a. Cleansing by a specific brush for denture after each meal can prevent discoloration of denture.
- b. Denture cleanser with hydrogen peroxide system is effective.
- c. Bleach should be used for obvious discolorations.
- d. Discoloration is caused by water absorption by resin.
- e. Discoloring is caused by natural pigments and coloring agents included in the food.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

- Summary :**
- a. Cleansing by a specific brush for denture right after each meal can prevent discoloration of denture.
 - b. Denture cleanser with hydrogen peroxide system utilizes mechanical function of bubbles from blowing agent and oxidation from hydrogen peroxide solution. It can eliminate plaque from dentures but has not enough effect on eliminating bacteria and microorganisms from denture surfaces.
 - c. Usage of bleach is better to be avoided because it causes discoloration of resin. When the discoloration is significant, usage of cleanser with hypochlorous acid system is effective though it may sometimes change colors of and bleach the denture materials.
 - d. Natural pigment and artificial coloring agents contained in the food sticks to the denture surface and it may be absorbed into resin with water such as saliva and may results in discoloration.
 - e. Natural pigments and artificial coloring agents included in the foods stick to the denture surface and it may be absorbed into resin with water such as saliva and may results in discoloration.

Things to understand

Learning factors of discoloration of dentures and prevention, and furthermore understanding how to handle the discolored denture, are required.

Keywords

Denture, stain, discoloration

Question 18

Select the appropriate choice explaining about stains on dentures.

- a. Materials used for dentures are stable so insides of dentures do not get stained.
- b. Even if stained, dentures still have the same function so attention to stains is regardless.
- c. Absorbed pigment is temporary and can be cleansed by the specific denture cleanser.
- d. The surface of dentures does not change with the usage of denture brush.
- e. Use of denture cleansers containing abrading agents are preferred to take off dirt from denture surfaces.

Answer : c

Summary :

- a. Denture base is made from high-molecular compound, thus pigments and coloring agents in foods get absorbed with time. Taking off the denture right after each meal and cleansing it is required.
- b. Discoloration of denture base is caused from absorption of pigment and it means bacteria can get inside the denture. The stained denture may cause inflammation on oral mucosa and tongue surface so it is not regardless and should be paid attention.
- c. Denture cleanser including bleach shows a temporal effect on Sterilization and bleaching. Frequent use of this kind of denture cleanser may cause change in primary color of the denture itself.
- d. Well-polished surfaces become rough when the tooth brush is applied strongly. Especially tooth paste containing abrading agents may roughen the denture surface and the condition leads to bacteria easily adhering to the surface.
- e. Tooth pastes containing abrading agents may roughen the denture surface and the condition lead to food residues easily adhering to the surface and results in breeding bacteria that negatively affect the oral mucosa.

Things to understand

The denture surface is very smooth and inappropriate cleansing method may cause negative changes on the surface. It may result in inflammation or pain in the mucosa under the denture base.

Keywords

Denture, discoloration, how to cleanse

Question 19

Select the appropriate combination explaining about considerations for patients with dentures during meal

- a. Foods at home should be specifically cooked and different from those of other family members; food should be easy to chew and swallow
- b. Starting with soft foods right after setting the denture and making foods harder in stages is appropriate.
- c. Effort to make foods easy to eat is required.
- d. It is also important to make the dishes appear delicious.
- e. To make foods easy eat, slicing and mincing foods finely is necessary.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

Summary :

- a. Differentiating dishes from other family members is not appropriate but effort to make the same dish softer is required.
- b. Right after setting the denture, eating soft foods is appropriate. Making foods harder in stages is appropriate. Grain shaped foods cause pain when it get inserted under the denture, thus avoiding this shape at this stage is preferable.
- c. Large shaped foods require the mouth to be opened widely and chewing with anterior teeth. It easily dislocates the denture. Taking time to cook and soften general ingredients is necessary
- d. There are some special foods which are cooled for elderly people, but the appearance is not attractive and it may result in decreasing the appetite. To make the food appear delicious and to cook it so that it is easily-eaten is necessary.
- e. Both sliced and minced forms sound friendly to be eaten, but minced food is not easy to form an alimentary bolus so it spreads in the oral cavity and is difficult to swallow. Especially for a patient with full denture base, thinner foods are not easy to bite and chew.

Things to understand

Understanding what the good way of cooking is for a patients with full denture base and how to instruct them to eat is necessary.

Keywords

Denture, meal

Question 20

Select the appropriate combination explaining about stench from dentures.

- a. Using an ozone denture cleansing device is effective on stench from dentures.
- b. Adhered dirt and bacteria to the denture surfaces are the factors causing stench.
- c. Cleansing the denture with denture brush under running water can prevent stench from the denture.
- d. Stench from the denture can be eliminated by boiling disinfection.
- e. To eliminate stench from the denture, using a denture cleanser is effective.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 2

Summary : a. An ozone denture cleansing device has an added bactericidal function by ozone compared to the general ultrasonic wave cleansing device. The general tap water gets converted to ozone water and the ozone water shows great effect on preventing stench.

- b. The cause of stench from the dentures is not only adherences to denture surface but also dirt and substances produced from plaque which are absorbed into the denture resin material.
- c. Cleansing with a brush under running water can eliminate foods residues but not plaque. To prevent stench a denture cleanser is required.
- d. Boiling disinfection for the denture must not be implemented. Resin of the denture material changes in shape because of increasing water absorption which is caused by soaking in boiling water.
- e. Chemical cleanse by denture cleanser is the best way to eliminate stench from the denture. Also use of ultrasonic wave cleansing device along with a denture cleanser has more effect on preventing stench.

Things to understand

Understanding factors and ways of preventing stench from dentures and how to cope with the stench are required.

Keywords

Denture cleanser, stench from the denture

Question 21

Select the appropriate choice for preventing denture stomatitis

- a. Use of hydrogen peroxide-based denture cleanser
- b. Enforcement of mechanical cleansing using denture brush
- c. Instructions about denture removal during night to the patient
- d. Keep soft tissues clean by gargling and brushing
- e. The denture which is removed should be first cleaned then dried and stored.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

- Summary :**
- a. Hydrogen peroxide cleanser is not able to eliminate bacteria such as Candida which causes denture stomatitis. Cleanser containing enzyme system has a strong effect on eliminating Candida and other bacteria.
 - b. Mechanical cleansing with a denture brush is fundamental. Especially cleansing the mucosa in missing teeth region is very important for preventing denture stomatitis.
 - c. Dentures should be removed and after mechanical cleansing, it is chemically cleansed using a denture cleanser and then stored during night. To keep oral cavity clean, gargling and cleaning are implemented. From the point of view of keeping oral cavity clean until morning, the explanation in this choice is appropriate.
 - d. Candida easily becomes colonized on tongue and buccal mucosa. Keeping oral cavity clean by brushing the soft tissues and gargling, wiping oral cavity by care giver can prevent denture stomatitis.
 - e. There is a report which shows keeping removed dentures in water increases the bacteria on denture surfaces though to prevent deformation caused from drying, keeping the dentures in water is general.

Things to understand

Understanding cleansing methods of dentures and oral cavity for preventing denture stomatitis is required.

Keywords

Denture stomatitis, cleansing denture and oral cavity

Question 22

Select which is NOT appropriate to be used for eliminating concrete dirt adhering to dentures, which is not easily removed except only by using denture cleanser.

- a. Plastic eraser
- b. High technical scrubber
- c. Organic solvent such as chloroform
- d. Sanding sheet
- e. Flat-blade screwdriver

Answer : c

Summary :

- a. Scrubbing the surface with plastic eraser cleans only the scrubbed part. It may become uneven so careful scrubbing is required.
- b. High technical scrubber is effective in eliminating tea incrustations and nicotine cigarettes.
- c. Organic solvent such as chloroform dissolves resin in the denture. It must not be used.
- d. Fine sanding sheet can eliminate dirt adhering to the denture.
- e. Putting the edge of a flat-blade screwdriver on calculus or the border between calculus and the denture, scrubbing off or peeling off the calculus can be possible.

Keywords

Denture, denture cleanser, storing denture

Question 23

Select the combination explaining the appropriate management when a patient swallows the denture accidentally.

- a. Confirming if the patient actually swallowed a denture or not.
- b. Confirming the patient's condition
- c. To be examined by a specialist
- d. Taking drastic steps
- e. Taking rice and other fiber-rich foods

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 1

Summary :

- a. Denture users are relatively elderly, and caregivers should confirm the situation when a patient accidentally swallows the denture.
- b. After confirming the swallowing of the denture, the respiratory condition, existence of cough and other condition must be checked.
- c. If the denture enters into bronchial tubes, first aid is required immediately though, in case the denture enters into the esophagus, examination by a specialist is required.
- d. Taking drastic steps without expertise may worsen the situation.
- e. If the denture clasp pierces the mucosa, damage to the part may have severe negative side effects.

Keywords

Denture, swallowing accidentally

Question 24

Select which is NOT appropriate when a patient swallows a denture accidentally.

- a. If the denture is lost in the oral cavity, it may be in the pharyngeal cavity, esophagus or trachea.
- b. If denture aspiration is suspected, taking an x-ray of the abdomen and the chest is required to confirm the existence of denture.
- c. If the denture is in the stomach, it is automatically excreted, so there is no need to be examined by a specialist.
- d. If the denture is in the trachea, retrieval by bronchoscopy under general anesthesia is done, so sending the patient to a specialist immediately is required.
- e. Heimlich maneuver may damage abdominal organs, so back percussion is recommended especially for infants and pregnant woman.

Answer : c

- Summary :**
- a. Ill or elder people sometimes accidentally aspirate a small denture especially a partial denture due to the unexpected movement, swallowing reflex or cough. When the denture is missing in the oral cavity, missing part should be confirmed immediately.
 - b. In the absence of severe respiratory insufficiency, frontal and lateral views of chest and abdominal X-ray are taken. Thus, caregivers are required having a knowledge about hospitals and clinics which are certainly reliable.
 - c. A denture accidentally aspirated may reach into the stomach. But in the case of aspirating a partial denture, a hook may hurt the esophageal mucosa or penetrate the intestinal wall and a laparotomy may sometimes be required so X-ray on the abdomen should be taken daily.
 - d. Foreign body in trachea may be taken out by strong continuous cough if a patient is able to cough by himself though, foreign body may move gently with time, promptly sending the patient to an otorhinolaryngology and gastrointestinal medicine is important.
 - e. In Heimlich maneuver, caregiver's arms surround the patient's abdomen and compress the body to reduce the capacity of lung. The air in the lung goes out rapidly and it expels the foreign body out.

Keywords

Denture

Question 25

Select the appropriate combination explaining about the symptoms caused from long-term use of ill-fitted dentures.

- a. Dental caries on existing tooth, periodontal disease
- b. Salivary pain
- c. Xerostomia
- d. Resorption of alveolar ridge
- e. Decubitus ulcer

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary :

- a. Long-term use of ill-fitted denture may become a breeding point for dental caries and/or periodontal disease due to food residue between teeth and gingiva and/or denture.
- b. Salivary pain is a fluxion disorder caused from sialolithiasis. There is no relation with ill-fitted dentures.
- c. Long-term use of ill-fitted dentures may not cause Xerostomia.
- d. Long-term use of ill-fitted denture may cause resorption of jaw bone due to continuous unbalanced pressure to jaw bone.
- e. Long-term use of ill-fitted denture may cause ulcers on the mucosa touching the denture palate because of continuous unbalanced pressure to the jaw bone.

Keywords

Denture, ill-fitted, absorption of alveolar ridge

Question 26

Select the INAPPROPRIATE choice explaining about the symptoms caused from long-term use of ill-fitted dentures.

- a. Decrease of appetite and biased nutrition.
- b. Perception of noise or pain at temporomandibular joint
- c. Malocclusion by abrasion of artificial tooth after a long-term use
- d. Ill-fitted dentures may get fitted.
- e. Dentures damage gingiva and root of tongue and causes pain.

Answer : d

Summary : a. Malocclusion may cause decreased appetite and biased nutrition.
b. Noise or pain at temporomandibular joint are sometimes caused.
c. Abrasion of artificial tooth causes not only Malocclusion but also incorrect movements of the temporomandibular joints.
d. Ill-fitted dentures will never be fitted.
e. Dentures damage gingiva and root of tongue and causes pain.

Things to understand

A long term use of Ill-fitted dentures may damage not only gingiva but also temporomandibular joint due to malocclusion.

Keywords

Ill-fitted denture, malocclusion, ache from denture

Question 27

Select the correct combination explaining advantages of metal plate in comparison with resin plate.

- a. Designing is not very difficult.
- b. Adjustment is easier.
- c. Depression of denture plate is preventable.
- d. Sense of temperature is more easily obtainable.
- e. Less foreign-body sensation

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary : a. Metal dentures can be designed according to the condition of existing teeth and alveolar ridge.
b. Metal is strong, so plate can be thin, but in cases of pain, it is more difficult to adjust in comparison with resin denture.
c. There is no relation between material and depression of plate.
d. Metal is physically stronger than plastic and denture can be made thinner and smaller. It makes patient perceive less foreign-body sensation.

Keywords

Metal plate, denture design, resin plate

Question 28

Select which is INCORRECT as advantages and disadvantages of metal dentures.

- a. Metal denture easily gets dirty in comparison with plastic denture.
- b. Metal denture propagates change of temperature in foods.
- c. Metal dentures do not break easily.
- d. Metal denture is difficult to be adjusted.
- e. Metal denture is not covered by health insurance.

Answer : a

Summary : a. The surface of metal denture is smooth and exhibits low water absorbability, so deposits do not easily adhere to the surface.
b. Metal dentures propagate change of temperature in foods.
c. Metal dentures do not break easily.
d. Metal denture is difficult to be adjusted.
e. Metal denture is not covered by health insurance.

Things to understand

Metal denture is hard and not breakable. It can be made thinner and it is a good heat conductor, clean and with less perception of foreign body.

Keywords

Metal denture, plastic denture, kinds of denture

Question 29

Select the condition which is least likely by neglecting missing teeth.

- a. Decrease of swallowing ability
- b. Extrusion of an opposite tooth
- c. Drifting of neighboring teeth
- d. Calcification
- e. Abnormality of jaw point

Answer : d

Summary : a. Swallowing ability decreases along with loss of teeth. It is said that the loss of first molar may decrease swallowing ability by 50%.
b. Opposite teeth move in the occlusal direction.
c. Neighboring teeth lean in the mesial direction.
d. Alveolar bones become thinner.
e. Malocclusion may cause changes in mandibular movements and it results in abnormality of the jaw points.

Keywords

Loss of teeth, swallowing ability

Question 30

Select the symptoms which are NOT caused by neglecting missing teeth.

- a. Decrease of swallowing ability
- b. Abnormal perception on tongue
- c. Articulation disorder
- d. Inclination of neighboring teeth
- e. Advancement of dental caries and periodontal disorders

Answer : b

Summary :

- a. Loss of teeth may cause malocclusion and it affects swallowing ability.
- b. Lost teeth do not cause abnormal sensations on tongue and tongue muscles which are sensation receptors.
- c. Loss of teeth may cause the remaining teeth to incline it results in articulation disorder.
- d. Neglecting lost teeth may incline neighboring teeth. It results in unbalanced occlusion and swallowing and articulation disorders.
- e. Neglecting lost teeth may incline neighboring teeth. It results in unbalanced occlusion and may result in advancing caries and periodontal disorders.

Things to understand

Lost teeth may cause unbalanced occlusion and it results in not only swallowing and articulation disorders but also dental caries and periodontal disorders.

Keywords

Neglect of lost teeth, functional disorder, abnormal occlusion

Question 1

Select the choice which is an INCORRECT factor causing halitosis.

- a. Periodontitis
- b. Dental caries
- c. Tongue habit
- d. Mouth respiration
- e. Garlic

Answer : c

Summary : a, b. The phenomenon of halitosis is sometimes caused due to dental diseases such as periodontitis, acute necrotizing ulcerative gingivitis and dental caries. In addition, plaque, coated tongue, unhygienic dental prosthesis and dentures cause halitosis.

- c. Tongue habits adds pressure to the dental arch. It causes malalignment and abnormal swallowing, it may not be a direct cause of halitosis.
- d. Mouth respiration makes the oral cavity dry and it causes inflammation on the oral mucosa, marginal gingiva, and tongue and halitosis. Halitosis may be caused due to diseases of adjacent organs which are nose, tonsil, and paranasal cavity, digestive organs which are stomach and intestine, or of respiratory tract which are bronchus and lungs.
- e. Intake of foods with strong smell such as garlic and alcohol, and smoking cause halitosis by eliminating substances which are once absorbed into blood into expired air.

Keywords

Halitosis, periodontitis, mouth respiration

Question 2

Select which are NOT the appropriate factors causing halitosis.

- a. The factor causing bad smell in halitosis is volatile sulfur compound.
- b. Halitosis tends to become stronger at the time of waking-up and on empty stomach.
- c. Gram-positive bacterium in the oral cavity is related to halitosis.
- d. The cause of halitosis exists only in the oral cavity.
- e. Pathogenic bacteria causing periodontal disease is related to halitosis.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 4

- Summary :**
- a. The cause of halitosis is volatile sulfur compounds such as hydrogen sulfide (smells like rancid eggs), methylmercaptan (smells like a skunk), Dimethyl sulfide (smells like rancid cabbage). Especially hydrogen sulfide and methylmercaptan are the major cause of halitosis.
 - b. Physiological halitosis becomes stronger when the self-cleansing decreases due to reduction of saliva. Thus halitosis becomes stronger at the time of waking-up and when hungry and tired.
 - c. Decomposition of proteins and amino acids by gram-negative bacterium causes malodorous substances. Insufficient oral care changes bacterial flora from gram-positive bacterium which does not give off bad smell, to gram-negative bacterium and causes halitosis.
 - d. 80-90% of causes of halitosis exists in the oral cavity though sometimes halitosis is caused from otolaryngological diseases, digestive system diseases and respiratory system diseases.
 - e. Gram-negative bacterium which is a major periodontal pathogen increases in periodontal tissues with inflammation and generates odorous materials. Leukocytes effused from periodontal pockets contain lots of sulfur components in a patient with periodontitis and it makes halitosis stronger.

Things to understand**1 Classification of halitosis**

- 1) Physiological halitosis (at the time of waking-up)
- 2) Halitosis related to foods and drinks
- 3) Abnormal halitosis

Halitosis caused by oral diseases (periodontitis, coated tongue, dental caries, dentures, decreased salivation)

Halitosis caused by otolaryngological diseases (chronic rhinitis, sinusitis, chronic tonsil inflammation, laryngeal cancer and pharyngeal cancer)

Halitosis caused by respiratory system diseases (purulent bronchitis,

bronchiectasis, lung tumor and lung cancer)

Halitosis caused by digestive system diseases (esophageal diverticulum, esophageal stricture, chronic stomach dilatation, gastric hypoacidity, gastric cancer)

Halitosis caused by other diseases (diabetes, uremia, hepatic cirrhosis chronic hepatitis)

4) Psychogenic halitosis

Keywords

Halitosis

Question 3

Select the appropriate combination for halitosis

- a. Components of halitosis in elderly people are the same as young people.
- b. Coated tongue is one of the factors causing halitosis.
- c. The function of eating is not related to halitosis.
- d. Xerostomia is not related to halitosis.
- e. Halitosis may become a disincentive for communicating with other people.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

- Summary :**
- a. The component of halitosis in elderly people is volatile sulfur compound the same as in young people. However baseline diseases and reduction of saliva secretion frequently seen in elderly people and unhygienic dentures may cause halitosis and these factors also should be paid attention.
 - b. In 60% of the cases, cause of halitosis is coated tongue. Epithelial cells shed from the mucosa accumulate on the surface of the tongue along with a large amount of bacteria, leading to coated tongue and formation of odorous substances. Thus cleaning the tongue is important for preventing halitosis.
 - c. The function of eating is achieved by muscles around mouth and movements by pharyngeal muscles and tongue muscles. Dysfunction of these muscles may accumulate residues which causes halitosis..
 - d. Reduction of volume of saliva causes defective function of cleansing xerostomia and halitosis seem severe. Xerostomia is caused by adverse effects of drugs, defective chewing function, salivary gland disorders and general diseases of dehydration and diabetes.
 - e. Halitosis may become a disincentive for communicating with other people.

Question 4**Which is correct for halitosis?**

- a. Bacteria in the oral cavity are related to halitosis.
- b. People can check for halitosis by themselves.
- c. Healthy people do not have halitosis.
- d. Periodontal disease is the big factor for halitosis.
- e. Dental caries may be a factor for halitosis.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

- Summary :**
- a. Bacteria dissolve various materials in the oral cavity and metabolic materials become odorous materials. Mainly these odorous materials are volatile sulfur compound such as Hydrogen sulfide, Methyl mercaptan, Dimethyl sulfide.
 - b. Checking halitosis by oneself seems not easy. Many people who suffer from halitosis realize it when pointed out by others. Also people judge their halitosis by other people's gestures and signs and some people have psychogenetic halitosis in which there is no existence of halitosis.
 - c. Even healthy people have chronic bacteria in the oral cavity which definitely create metabolic materials and it becomes a factor for physiologic halitosis. It shows circadian changes and especially at the time of waking-up and fasting, it becomes stronger. Intake of foods becomes a factor for halitosis, but it becomes softer with time.
 - d. Larger volumes of calculus deposition are seen in periodontal diseases. Especially bacteria which compose plaque in periodontal pockets easily produce hydrogen sulfide and it becomes a factor for halitosis. If it becomes advanced, drainage is seen and it releases a strong odor.
 - e. Severe dental caries accumulates plaque and it becomes a factor for halitosis. When the advanced dental caries reaches the dental pulp, gangrene of the pulp tissues releases a strong odor. More advanced caries leads to focus of infection at the apex of the root of the tooth, halitosis becomes stronger by drainage.

Things to understand

Halitosis is caused by metabolic materials which are produced by bacteria in the oral cavity. Odorous materials are mainly volatile sulfur compounds. To prevent halitosis, calculus should be eliminated, which is a factor for halitosis. If there is periodontal disease and dental caries, treating them may solve the problem. Halitosis may occur even when there is no disease and oral health is relatively good, Gargling with gargling agents is effective for

such kind of halitosis. Also digestive disorders may cause halitosis.

Checking halitosis by oneself seems not easy. Many people who suffer from halitosis discover it when pointed out by others. Also people judge their halitosis by other people's gesture and sign and some people have psychogenetic halitosis in which there is no existence of halitosis.

Even healthy people have chronic bacteria in the oral cavity which definitely form metabolic materials.

Keywords

Halitosis

Question 5

Which component in saliva does not inhibit halitosis?

- a. Serum albumin
- b. Lysozyme
- c. Mucin
- d. Amylase
- e. Maltase

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 5

Summary : a. It is related to immunity.

b. It has an antibacterial action and kills harmful bacteria in the oral cavity and inhibits halitosis.

c. This choice is correct.

d,e. food residues ferment and halitosis occurs. At the same time these produce acid.

Things to understand

Understanding components of saliva which are the factors for halitosis

Keywords

Saliva, halitosis

Question 6

Select which is NOT appropriate as a factor for halitosis.

- a. 80 to 90 % of cause of halitosis exists in the oral cavity.
- b. Brushing is important for preventing halitosis
- c. The factors for halitosis may be volatile sulfur compounds which are produced by bacteria in the oral cavity.
- d. Halitosis seems to occur at the time of fasting, waking-up, when tensed.
- e. The stomach and intestines, digestive organ, nose diseases do not cause halitosis.

Answer : e

Summary :

- a. Dental disease such as plaque, food residue, gingival inflammation, periodontal inflammation, and dental caries, and inflammation of oral mucosa are quoted as causes of halitosis.
- b. The cause of halitosis is mainly periodontal disease or dental caries with the exception of physiological halitosis at the time of waking-up and fasting. Thus, brushing is the most effective way to eliminate calculus and food residue.
- c. Bacteria dissolve various materials in the oral cavity and metabolic materials become odorous materials. Mainly these odorous materials are volatile sulfur compounds such as Hydrogen sulfide, Methyl mercaptan, Dimethyl sulfide.
- d. Everybody has halitosis and at the time of fasting, waking-up or being tensed, saliva secretion decreases and halitosis becomes severe. This kind of halitosis is called as physiological halitosis.
- e. The stomach and intestines, digestive organs, nose diseases cause halitosis.

Question 7

Select which are correct in the prevention of halitosis.

- a. Only brushing cannot prevent most of the halitosis.
- b. Agents for preventing halitosis include mouthwash and liquid tooth paste.
- c. When dental health is not good, using an agent for preventing halitosis is not effective.
- d. Gargling with an agent for preventing halitosis can eliminate most bacteria which cause halitosis.
- e. Careful gargling with an agent for preventing halitosis can prevent halitosis even without brushing.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

Summary :

- a. Dental disease such as gingival inflammation, periodontal inflammation, and dental caries are quoted as main causes of halitosis. Thus eliminating plaque and food residue can mostly prevent halitosis.
- b. There are various kinds of mouthwashes and liquid toothpastes to prevent halitosis. .
- c. Dental disease such as gingival inflammation, periodontal inflammation, and dental caries are quoted as main causes of halitosis. Thus eliminating plaque and food residue can mainly prevent halitosis. Using an agent for preventing halitosis can work temporarily.
- d. Gargling with mouthwash cannot eliminate most of the bacteria which cause halitosis. Brushing is required to eliminate bacteria.
- e. Dental disease such as gingival inflammation, periodontal inflammation, and dental caries are quoted as main causes of halitosis. Thus eliminating plaque and food residue can prevent halitosis. Careful gargling with an agent for preventing halitosis can prevent halitosis only temporarily.

Question 8

Select the choice which eliminates odor.

- a. Benzethonium chloride
- b. Povidone Iodine
- c. Gluconic acid chlorhexidine
- d. Zinc chloride
- e. Dexamethasone

Answer : d

Summary :

- a. This is one of the surface acting agents. It is present in antiseptic substances and gargles. It does not affect the odor.
- b. This is a drug formulation of iodine. It is used for sterilization of skin and surgical site. It does not affect the odor.
- c. It is used for sterilization of skin and surgical site. It does not effect the odor. On gargling with specified levels of gluconic acid chlorhexidine, the surface of teeth and tongue become discolored.
- d. The bond of zinc chloride and volatile sulfur compound produces odor eliminating effect.
- e. It is used as an adrenal cortical steroidal anti-inflammatory agent. It belongs to glucocorticoid group and it has the same effect of hydrocortisone and cortisone.

Keywords

Halitosis, drug

Question 9

Select the appropriate combination explaining the cause of halitosis and treatment for the same, for elderly people with strong halitosis.

- a. Plaque- scaling
- b. Coated tongue - instructions for mouth cleaning
- c. Denture - denture cleaning
- d. residual root - use of oral rinse
- e. a decrease in saliva production - prescription of anti-anxiety agents

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

Summary :

- a. Scaling can eliminate plaque though, plaque can be eliminated with daily brushing.
- b. Coated tongue is a factor for halitosis and instruction on how to clean the mouth is thus required. Excessive brushing of the tongue causes brush burn and this also becomes a cause of halitosis.
- c. Bacteria in the oral cavity adhere to the surface of dirty dentures, it causes halitosis and inflammation. Washing dentures well and keeping it clean is important.
- d. Using an oral rise to eliminate volatile sulfur compounds has a masking effect. Cleaning residual root is not easy extraction should be considered so as not to allow plaque and food residue accumulation.
- e. For stimulating the secretion of saliva, instructions of making oral cavity moist with water or tea or prescription of artificial saliva is required. Some anti-anxiety agents cause dry mouth. Thus giving anti-anxiety agents for the purpose of preventing halitosis to elderly people whose saliva secretion is decreased should be paid attention.

Keywords

Halitosis

Question 10

Select the appropriate combination explaining the cause of halitosis and oral care, for elderly people with strong halitosis.

- a. Halitosis in elder people is mostly caused from the stomach and intestines, digestive organs or nose diseases.
- b. The best way to eliminate food residue and plaque which cause halitosis is gargling with a mouth wash.
- c. Eliminating food residue and plaque and inhibiting bacterial growth may result in eliminating halitosis and it is important.
- d. Plaque easily adheres to dentures, and this plaque is easily- overlooked.
- e. Muscular weakening in surrounding oral muscles and a decrease in saliva production affects oral health and worsens halitosis.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 5

Summary : a. Muscular depression in the surrounding oral muscles and a decrease in saliva production deteriorate oral health and worsens halitosis. Unclean dentures cause halitosis as well.

- b. Only gargling with mouth wash cannot eliminate plaque, food residue and bacteria which cause halitosis. Brushing is necessary to eliminate bacteria.
- c. Plaque, food residue, and dental diseases such as gingival inflammation, periodontal inflammation, dental caries, and inflammation of the oral mucosa are quoted as causes of halitosis. Eliminating halitosis requires eliminating food residue and plaque, and inhibiting bacterial growth.
- d. Plaque easily adheres to dentures, and this plaque is easily- overlooked. After taking off the dentures and cleaning them, they should be stored in water during sleep time.
- e. Muscular weakening in surrounding oral muscles and a decrease in saliva production affects oral health and worsens halitosis

Question 11

Select the inappropriate combination explaining how to respond to a patient with a phobia for halitosis at the initial visit.

- a. To question a patient about daily habits.
- b. To determine absence of halitosis.
- c. To prescribe anti-anxiety agents.
- d. To instruct how to clean the oral cavity.
- e. To assess the level of halitosis.

Combination : 1 a,b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

Summary :

- a. Questioning daily habits may lead to a diagnosis. At the initial visit, a patient's complaint, meaning what makes the patient suffer, and the problem should be carefully questioned.
- b. A patient with self-smell phobia believes he has halitosis even if it is not so, it takes time to make him understand the absence of halitosis. Therefore, to determine the absence of halitosis at the initial visit is not appropriate.
- c. A patient with self-smell phobia strongly believes that he has halitosis; prescription of anti-anxiety agents may not be accepted by him.
- d. Bad oral health causes halitosis. Even if oral health is not poor, instructions for good oral hygiene are recommended at the initial visit.
- e. To assess the level of halitosis at the initial visit is fundamental. Seeing a patient's reaction to the data, psychological condition of a patient can be predicted.

Keywords

Self-smell phobia

Question 12

Select the inappropriate choice explaining instructions for a patient with self-smell phobia.

- a. Carefully listening to the patient's complaint.
- b. Denying the existence of halitosis results in adverse effects. Assessing the level of halitosis after listening to the patient's complaint is important.
- c. It is one of the symptoms of neurosis and schizophrenia, referring to a counselor and psychiatrist is recommended.
- d. To explain the cause of halitosis from a medical point of view and instructing the correct way of brushing teeth and brushing after each meal.
- e. When halitosis caused from the stomach and intestines, digestive organs or nose diseases is doubted, referring to a specialist should be the first priority.

Answer : c

Summary : a. Self-smell phobia is a psychological disease. Denying the existence of halitosis results in adverse effects. Assessing the level of halitosis after listening to the patient's complaints is important.

- b. Using a halitosis assessing device is effective to understand the patient's perception of halitosis. Patients may tend to have a psychological problem, the doctor needs to listen carefully to their complaints and take time to make them believe that he does not have halitosis.
- c. This phobia sometimes includes neurosis and mental disorders, but sending the patient to a neurology or psychiatry specialist immediately without enough questioning and listening to the patient's complaint is not appropriate.
- d. Eliminating halitosis requires eliminating plaque from the oral cavity and even in a patient with self-smell phobia, plaque control is required.
- e. General diseases sometimes causes characterized halitosis. While questioning, obtaining medical history of stomach and intestine disorders and, digestive organs, nose diseases, and inspection and treatment by otolaryngologist and a general doctor are required.

Keywords

Halitosis, self-smell phobia

Question 13

Select the correct combination regarding halitosis assessment device.

- a. Oral Kuroma
- b. Moisture Checker/ Mucous
- c. Oral balance
- d. Attain
- e. MS Halimeter

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary :

- a. It is a simplified gas chromatography which assesses the consistency of hydrogen sulfide, methyl mercaptan, dimethyl sulfide.
- b. It is a device for assessing water in the oral cavity. It is not designed to assess the consistency of volatile sulfide.
- c. This is an artificial saliva not a device for checking the levels of halitosis. Decreased saliva secretion may cause difficulties in eating and speaking.
- d. This is a device to assess the volume of ammonia formation. This is not directly used for assessing halitosis though, bad oral health without appropriate oral cleaning shows high ammonia formation and it has a positive correlation with halitosis.
- e. The values differ with environmental temperature therefore specific standard conditions and modifications are required to be set.

Keywords

Halitosis

Question 14

Select the choice which is NOT appropriate as a device for assessing halitosis.

- a. It is assessed by either olfaction or a device for detecting halitosis.
- b. Sensory test method uses human olfaction and calculates strength of smell in quantitative terms.
- c. Gas chromatography calculates concentration of hydrogen chloride, methyl mercaptan, dimethyl sulfide in expired air.
- d. Concentration of volatile sulfide can be calculated by a device for detecting halitosis.
- e. A patient with positive diagnosis by olfaction may sometimes show normal results on assessing the expired air using halitosis devices.

Answer : c

Summary :

- a. Halitosis is assessed by either olfaction or a device for detecting halitosis.
- b. Sensory test method uses human olfaction and calculates strength of smell in quantitative terms. It is a popular test to assess bad odor.
- c. Gas chromatography calculates concentration of hydrogen chloride, methyl mercaptan, dimethyl sulfide in expired air.
- d. Concentration of volatile sulfide can be calculated by a device of detecting halitosis. Gas chromatography and Halimeter are among these.
- e. Halitosis assessing devices calculate concentration of hydrogen chloride, methyl mercaptan and dimethyl sulfide in expired air. A patient with positive diagnosis by olfaction may sometimes show normal results on assessing the expired air using halitosis devices

Question 1

Select the choice which is appropriate as a handle of tooth brush for hemiplegics.

- a. No modification on a ready-made product is required.
- b. Modification to make a ready-made product thinner and lighter is preferable.
- c. Modification to make a ready-made product thicker and lighter is preferable.
- d. Modification to make a ready-made product thinner and heavier is preferable.
- e. Modification to make a ready-made product thicker and heavier is preferable.

Answer : c

Summary : a. If a patient with hemiplegia with paralysis on his dominant hand side, a ready-made product may be used.
b. Generally speaking, thinner handle is not easy to grasp.
c. Generally speaking, thicker and lighter handle is comfortable to grasp.
d. Generally speaking, thinner and heavier handle is the most uncomfortable to grasp.
e. Generally speaking, heavier handle is not comfortable to brush teeth with.

Things to understand

Understanding the suitable and comfortable size, weight and formation of handle and other details of tooth brush for people with hemiplegia is fundamental. People with hemiplegia generally have lower muscle movement and in case small movement is difficult for the patient, lighter and thicker handle is used.

Keywords

People with hemiplegia, physical disorder

Question 2

Select the appropriate choice explaining oral care for people who are unable to sit up.

- a. A patient can use his arms and hands even without sitting, thus making him clean his mouth by himself with an electric tooth brush is recommended.
- b. Washing the mouth is not appropriate without being in a sitting position and a disinfectant mouth wash should not be used.
- c. Lateral position with paralyzed side facing downward is recommended.
- d. When gargling, a lateral position is implemented, with the angle of mouth facing downward pulled down by a finger; pour little warm water from the opposite side to wash out the mouth.
- e. Make the patient to lie supine at the edge of bed, and a care

Answer : d

- Summary :**
- a. Inability to sit may be caused due to functional disability from other parts of the body, Disability level may be severe, thus cleaning the mouth by themselves is not possible. Even if the patient can clean his mouth on his own, it may not be done perfectly.
 - b. Even if the patient cannot sit, mouth washing can be done in the lateral position. In case of difficulty of using tooth brush, eliminating dirt by cotton swabs and sponges along with washing mouth with antiseptic is quoted being effective. In case it is difficult to use a tooth brush, cleaning mouth using cotton swabs and sponges along with mouth washing with an antiseptic is quoted as being effective.
 - c. For a lateral position in a patient with hemiplegia, it is fundamental that paralyzed side faces upward, meaning healthy side faces downward.
 - d. If a patient cannot sit, gargling in a lateral position is effective. Placing a spit pan lower than the pillow; and angle of mouth facing downward is pulled down by a finger and pour little warm water from the opposite side to wash out the mouth.
 - e. Implementing oral care in supine position is risky because of aspiration so lateral position is safer.

Things to understand

If a patient cannot sit, the care giver needs to understand this disability and help him take a better position. it is fundamental to place the healthy side downward in a lateral position in a patient with hemiplegia. Caregiver needs to sit on the chair while rendering oral care to reduce the caregiver's burden and for stable oral care.

Keywords

Lateral position, assisted brushing, hemiplegia

Question 3

Select the appropriate choice explaining about the position for a patient who cannot sit.

- a. Giving oral care from front in a standing position
- b. Giving oral care from behind in a standing position
- c. Giving oral care from behind in a prone position
- d. Giving oral care from the front in a lateral position
- e. Giving oral care from behind in a lateral position

Answer : d

Summary : a, b Letting a patient, who cannot sit, take a standing position is much more difficult.

- c. Oral care is never given in a prone position.
- d. Giving oral care given from the front in a lateral position is most appropriate.
- e. It is very rare to give oral care from behind in a lateral position.

Things to understand

Taking a lateral or supine position is appropriate for a patient who cannot sit. But in a supine position, it is not easy to see the oral cavity well and there is a risk of aspiration. Giving oral care in a lateral position is most safe and reasonable.

Keywords

A patient who cannot sit

Question 4

Select the appropriate choice explaining about oral care for a patient with limited head mobility.

- a. If a patient cannot flex and turn his neck, brushing with suction is effective for preventing aspiration.
- b. Even if a flexure is contraindicated for a patient, to prevent aspiration, brushing should be done with the neck flexed.
- c. If a patient has hemiplegia, placing the face on the paralyzed side is effective to prevent aspiration.
- d. If a patient cannot turn the neck, oral care should be postponed to prevent symptoms from worsening.
- e. Aspiration is unavoidable in order to improve the condition of the oral cavity.

Answer : a

- Summary :**
- a. Trying not to keep saliva or water in the oral cavity is effective in preventing aspiration.
 - b. Preventing aspiration is important, but to make a patient forcibly flex the neck, even if flexure of neck is contraindicated for the patient, may result in worsening of symptoms, so it should be cautioned.
 - c. If a patient has hemiplegia, place the paralyzed side upward in a lateral position, meaning placing the face on the healthy side is effective in preventing aspiration.
 - d. Even if a patient has limitation of movement, implementing oral care as much as possible is important.
 - e. Improving the health of the oral cavity is important, but trying to prevent aspiration is the primary principle.

Things to understand

Planning oral care which may prevent aspiration for patients who cannot flex and turn the head is important.

Keywords

Flexure, turn

Question 5

Select the appropriate choice explaining oral care for a patient who cannot flex and turn the neck.

- a. Giving oral care with the patient's head fixed
- b. Giving oral care with the patient's shoulders and arms fixed
- c. Giving oral care with the patient's face facing to the side of dominant hand
- d. Giving oral care keeping the patient's mouth widely open using mouth opener
- e. Giving oral care with a sponge

Answer : a

Summary : a. To keep the patient's head fixed using the caregiver's hand or arms, headrest and cushion during oral care is important.
b. Physically fixing the shoulders and arms causes additional strain on the head.
c. There is no relation between dominant hand and comfort of oral care.
d. A patient with difficulty in flexing and turning the neck may have difficulty in opening the mouth widely and using a device for the same may cause pain.
e. Not only a sponge but also a tooth brush should be used in oral care for a patient with difficulty in flexing and turning the neck.

Things to understand

If a patient has difficulty in flexing and turning the neck, keeping him in a comfortable position, and rendering oral care without straining the head is important.

Keywords

a patient has difficulty in flexing and turning the neck, disorder

Question 6

Select inappropriate combination explaining about Oral care for patients with lingual dyskinesia.

- a. Giving oral care by forcibly inhibiting movements of tongue is appropriate.
- b. Moving tooth brush gently not against the movements of the tongue is appropriate.
- c. A tooth brush with small and soft bristles is appropriate so as not to hurt the gingiva.
- d. Severe dental caries and ill-fitting dentures and crowns require require to be treated by a dentist early.
- e. Oral dyskinesia is volitional movement.

Answer : b

Summary :

- a. Inhibiting movements forcibly results in adverse effects.
- b. While rendering oral care, removing heightened muscle tension is required.
- c. Careful observation of the oral cavity is important. Tooth brush with small and soft bristles is appropriate. While using other oral care products,,careful attention not to damage the gingiva is required.
- d. Dental caries and ill fitted dentures and crowns may injure the tongue which continually moves. Even a minor wound may cause unexpected bleeding, thus it is recommended to send the patient to the dentist soon.
- e. Oral dyskinesia is involuntary jaw and tongue movement. It is caused from damage to the brain or adverse drug reaction.

Things to understand

Oral dyskinesia is involuntary movement. Therefore the caregiver should coordinate the oral care movements with the patient's tongue movements. Forcible inhabitation of his movements should not be done during oral care.

Keywords

To coordinate the oral care movements with the patient's tongue movement,
No forcible inhabitation, involuntary movement

Question 7

Select the correct choice explaining oral care for a patient with dementia.

- a. Apart from daily care, making time for oral care is required.
- b. Making a daily habit for a patient along with caregiver's schedule is required.
- c. Making people understand the importance of oral care with forcible implementation of oral care is needed.
- d. To make a patient get used to cleaning the mouth by starting with a friendly procedure is required.
- e. A patient cannot do oral care by himself, so there is no need to consider independent support.

Answer : d

Summary :

- a. Giving oral care continuously is required. Oral care should be included in the patient's daily habit. Therefore, it should be reasonably included in daily nursing care.
- b. Giving oral care continuously is required. Oral care should be included in the patient's daily habit. Therefore, it should be reasonably included in daily nursing care. Absolutely, it should be planned along with patient's daily life and schedule.
- c. Giving oral care continuously is required. Oral care should be included in the patient's daily habit. Forcible oral care may result in it being refused and also a patient with dementia may not be able to understand the importance of oral care.
- d. The application of desensitization, to start with tea after meal and to transit to gargle in steps needs to be tried. If required, the next steps of taking off denture, wiping with cotton swab and brushing are supposed to be done.
- e. Considering individual human rights, terms of "care" and "control" should be always considered when providing service. Thus independent support should always be under consideration.

Things to understand

Giving oral care continuously is required. Oral care should be included in the patient's daily habit and independent support should always be under consideration. Even if a patient cannot understand the oral care, including oral care in daily habit may accomplish regular implementation.

Keywords

Daily habit, independent support, dementia

Question 8

Select the correct combination explaining about Oral care for patients with disturbance of consciousness who bite oral care implements.

- a. A patient has disturbance of consciousness, thus there is no need to address it before and during oral care.
- b. Using a mouth opener is recommended to prevent injury by unexpected closing of the mouth during oral care, and to keep the mouth widely open during oral care.
- c. Using a toothbrush with small head and soft bristles which may not damage and hurt the gingiva is required.
- d. Inserting finger into vestibulum oris may be risky and may be bitten during oral care with toothbrush.
- e. If a toothbrush cannot be put in the oral cavity, cleaning oral cavity with water and suctioning repeatedly may redeem incomplete oral care.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

- Summary :**
- a. Even if a patient has disturbance of consciousness, an effort to remove patient's anxiety by continuously talking to the patient about what next is done is needed. Not only talking but also massaging shoulders and hands to relax the patient is also effective.
 - b. To open the mouth, insert fingers by forming the letter 'v', it may result in making the patient open the mouth and immediately place the mouth opener to keep the mouth open. It makes oral care of the sides of the tongue, tongue and molar regions easy.
 - c. For a patient who does not open the mouth, toothbrush should have a small head and soft bristles which do not hurt the gingiva, otherwise oral care in a short time may not be possible.
 - d. Placing finger in the mouth may be relatively acceptable to the patients. Patients may feel at ease after cleaning the cheek side and may open the mouth, then a toothbrush can be used. But should be careful not to place the fingers inconsiderately in the mouth.
 - e. A patient has a disturbance of consciousness, so pouring water into the oral cavity is risky. Also cold water sometimes causes pain, thus if safe implementation is available, warm water or diluted gargle mouthwash is appropriate for oral care.

Things to understand

Inserting fingers in the oral cavity of a patient with disturbance of consciousness and increased mastication reflex should be avoided. If a caregiver can open a patient's mouth with fingers, mouth opener or Bite block or Oral Bite are useful to keep the mouth open. But these devices aim at only keeping the mouth open temporarily, and do not aim to open the mouth forcibly. Careful attention not to open the patient's mouth forcibly is required.

Keywords

Disturbance of consciousness, mastication reflex, opening mouth with fingers

Question 9

Select the correct combination explaining about a patient with disturbance of consciousness who bite oral care implements.

- a. It should not take a long time to brush teeth; the brush needs to be big for accomplishing brushing promptly.
- b. There is no need of oral care because a patient does not have oral intake.
- c. Oral care should start with massage of gingiva and cheek, not with tooth brush.
- d. Care giver should converse with the patient even if the patient has a disturbance of consciousness.
- e. Using a mouth opener, modified tooth brush and other devices may help to keep the mouth open .

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 1

Summary :

- a. Tooth brush and tools for oral care needs to be shaped so as not to damage a patient's oral cavity.
- b. A patient with tubal feeding and IVH does not use the mouth, thus secretion of saliva gets decreased. Function of organs of respiration decreases, thus health of the oral cavity becomes poor and the patient may develop aspiration pneumonia easily. Therefore oral care from the view of prevention is required.
- c. There are patients who are hypersensitive and paralyzed, thus careful observation before starting oral care is required. First of all, desensitization by conversing and massage of gingiva and cheek should be done and then secondarily a toothbrush should be used for cleaning the oral cavity.
- d. Even if a patient has disturbance of consciousness, the caregiver should not assume he is a person who cannot understand, but should respect the patient's humanity and should start by speaking to the patient. .
- e. Effort to keep the patient's mouth open is required. Some devices and tools are used, but a patient with increased mastication reflex may accidentally swallow it so careful attention is required. Caregiver needs to know how to push K-point.

Things to understand

Even if a patient has disturbance of consciousness, the caregiver should not assume he is a person who cannot understand, but should respect the patient's humanity and should start by addressing the patient. Caregiver needs to take efforts for shaping appropriate oral care tools and should know how to push K-point.

Keywords

Addressing, aspiration pneumonia, effort on keeping a patient's mouth open

Question 10

Select the correct combination explaining about "the sign of pain" in a patient who cannot express the pain.

- a. A patient refuses to wear the denture.
- b. Increased blood pressure and fast pulse are observed.
- c. Secretion of saliva becomes increased.
- d. Volume of food intake increases .
- e. The patient shouts and howls.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary : a. A patient sometimes touches his face and mouth where it is painful and and refuses to wear the denture.
b. Increased blood pressure and fast pulse are observed.
c. Secretion of saliva becomes increased because of sympathetic activity and oral cavity becomes dry.
d. Volume of food intake sometimes decreases.
e. The patient sometimes shouts and howls and seems uncomfortable.

Keywords

Disturbance of consciousness, dementia, oral care

Question 11

Select the correct combination explaining the oral care for a patient who cannot speak because of aphasia.

- a. Volume of food taken sometimes increases and mealtime gets prolonged.
- b. If a patient refuses daily oral care such as brushing teeth it may be a sign of pain.
- c. If a patient frequently moves his body or seems uncomfortable, and shows a grim countenance, it may be possible that the patient feels pain in some parts of the body.
- d. If a patient shows a sign of pain in the oral cavity, there is no need to consider whether the patient has a full denture.
- e. When caring for a patient with dementia, the caregiver always understand the condition of the patient's oral cavity if he has pain or a cause pain.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

Summary :

- a. Volume of food taken sometimes increases and mealtime gets prolonged Nutrition is affected due to this. .
- b. If a patient feels pain even just by touching, he shows a grim countenance and rejects oral care. If a patient rejects daily oral care such as brushing teeth, it is a sign of pain and should not be missed.
- c. This is a sign of not only pain in oral cavity but also in any part of the body. Fastpulse, increased blood pressure, howling, abnormal behavior should be promptly noticed.
- d. Long time use of denture may damage the mucosa and food residue which exists between denture and mucosa may also damage the mucosa. Denture may cause pain Decubitus ulcer caused due to denture is frequently observed.
- e. It is difficult to completely understand the oral cavity of a patient. Even if curative treatment is difficult, to be seen by a dentist regularly is better and the caregiver should be prepared to manage an emergency condirion like swelling or fever.

Things to understand

Even if a patient cannot express his pain verbally, he tries to express it in some other way. Caregiver should be cautious to catch his sign of pain.

Keywords

Pain, sign, aphasia

Question 12

Select the correct choice explaining about management procedure for a patient who cannot express pain.

- a. The patient rejected oral care, but he regularly received dental check up, so the caregiver did not look at the patient's oral cavity.
- b. The patient shouted and rejected oral care; the caregiver considered that the patient is out of emotional control so the oral care was cancelled.
- c. Volume of food intake and speed of eating decreased, the caregiver thought the patient has dysphagia and the meal was left off.
- d. The patient refused oral care so he might have pain in the oral cavity, so his oral cavity must be examined with clean tools.
- e. The patient refused dental check up, the caregiver respected his feelings and his oral hygiene was not checked.

Answer : d

- Summary :**
- a. To prevent pain, regular check-ups by the dentist is needed. If a patient refuses oral care, it may be a sign of pain, the caregiver should assess the existence of dental caries, inflammation or wound in the oral cavity.
 - b. If a patient refuses oral care, it may be a sign of pain, the caregiver should not assume that a patient is out of emotional control. First of all, checking the oral cavity is required and then should assess the relation between his behavior and pain.
 - c. The patient's eating speed and intake volume may be decreased due to pain & dysphagia. Thus observation of oral cavity and relation between his condition and dysphagia is required.
 - d. In oral examination, existence of dental caries, periodontal disease and gingival disease, or wounds from denture or self-injury should be checked. At that time to prevent secondary disability, clean tools should be used.
 - e. Communication with patients with dementia and aphasia requires being respectful of their feelings and pace. Oral examination is required for preventing pain and for early treatment.

Things to understand

Careful observation to catch the signs of pain in patients with dementia or aphasia who cannot express their pain properly is required. If a patient has pain in the oral cavity, food intake decreases, he refuses to be touched and refuses oral care, brings finger to mouth frequently and refuses wearing the denture. These may be signs of pain. There are some patients who do not express their pain at all, so careful attention to patients is required.

Keywords

Select the appropriate choice explaining about tube feeding.

Question 13

Select the appropriate choice explaining about tube feeding.

- a. Patients without consciousness disorders require tube feeding for preventing aspiration.
- b. Intermittent tube feeding is required for patients with consciousness disorders.
- c. Time of infusion is short in case of gastric fistula.
- d. Intermittent tube feeding can allow good oral hygiene.
- e. Tube feeding is required for patients with strong reflex of soft palate and pharynx.

Answer : d

Summary :

- a. Tube feeding is required for patients with consciousness disorders.
- b. Intermittent tube feeding is not required for patients with consciousness disorders.
- c. It is almost the same with gastric tube feeding.
- d. Gastric tube feeding [C1] may allow good oral hygiene.
- e. Tube feeding is not required for patients with strong reflex of soft palate and pharynx.

Things to understand

Characteristics of tube feeding and careful points on oral care

Keywords

Tube feeding, intermittent tube feeding, gastric tube feeding

Question 14

Select the correct combination explaining about patients on tube feeding.

- a. Oral care is required
- b. Oral cavity becomes dry
- c. No bacteria is found in the oral cavity
- d. No aspiration pneumonia occurs
- e. Tube is clean

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 1

Summary :

- a. Oral care aims at not only cleaning food residue but also plaque.
- b. Oral cavity of patients on tube feeding becomes dry. Dryness of the oral cavity may result in decreased self-cleansing action..
- c. Tube feeding results in dryness of the oral cavity and it may result in decrease of self- cleansing.
- d. Patients with swallowing disorders may aspirate saliva or gastro fluid during sleep or in consciousness disorders.
- e. Inside and outside of tube become dirty. Bacteria grows and leaves a biofilm on the surface.

Things to understand

Understanding of importance of oral care for patients with tube feeding is required.

Keywords

Oral care, tube feeding, aspiration

Question 15

Select the correct choice explaining oral care for a patient on tube feeding.

- a. Self - cleansing is active because the patient does not perform mastication.
- b. During tube feeding, denture is not worn.
- c. Stomach tube does not require to be checked if the tube was not moved during oral care.
- d. Oral care is given in lateral or sitting position.
- e. Rendering oral care right after tube feeding is preferable.

Answer : d

Summary :

- a. A patient on tube feeding has decreased self- cleansing and the mucosa is easily -damaged by dryness which results in inflammation. Therefore non-use of mouth functions results in a fragile oral health with risk of inflammation and oral care is especially important.
- b. If a patient on tube feeding has no problems in the oral cavity, he can wear denture for anti-aging purpose. Cleaning of the dentures should be done at least twice a day and the mucosa under denture needs to be massaged with toothbrush with soft bristles.
- c. Stimulation and carelessness by the caregiver has a risk to displace the tube. Thus stomach tube absolutely requires to be checked even if the tube was not moved during oral care. Also during oral care, careful attention not to displace the tube is required.
- d. Many patients on tube feeding have dysphagia. To prevent aspiration, the position during oral care should be slouching, sitting position or in slight lateral position.
- e. Implementation of oral care may stimulate gag reflex and have the risk of aspiration pneumonia caused from asphyxia or aspiration. Thus implementation of oral care should be avoided right after tube feeding intake and should wait for a given interval.

Things to understand

Many patients on tube feeding have disturbances of consciousness and dysphagia, thus they cannot perform oral care by themselves. Also they do not chew so secretion of saliva and self- cleansing of the oral cavity decreases. In addition these patients have mouth respiration or no speech which result in making dry mouth and susceptibility to infection. Thus oral care is important. Implementation of oral care may stimulate gag reflex and have the risk of aspiration pneumonia caused from asphyxia or aspiration. Thus implementation of oral care should be avoided right after tube feeding but instead should be done in between the feeds. Stomach tubes do require to be checked even if the tube did not get dislocated during oral care.

Keywords

Tube feeding, oral care

Question 16

Select the inappropriate combination explaining about procedure for patients with tongue tumor.

- a. Rehabilitation therapies for chewing disorders, dysphagia and articulation disorders are required.
- b. The part of the bone from which a tooth was extracted which is in the area irradiated should be an open wound.
- c. If inflammation in submandibular and neck region is confirmed by palpation, it should be allowed to subside.
- d. Checking the existence of sharp teeth or dentures touching the tongue is required.
- e. Having patients check their mouth by themselves is required.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

Summary :

- a. It depends on the treatment the patient received, but the patient may have cicatricial contracture, transfiguration or dysesthesia of tongue. It is important to pay careful attention so that the patient does not develop aspiration pneumonitis.
- b. Jaw bones which are irradiated may develop radiation osteomyelitis. Therefore, exposing the bone should be avoided and at the time of radiation the wound should be closed.
- c. Not only tongue tumor but also oral cancer is likely to metastasize to lymph nodes. Therefore with findings of swelling or lump in the region of lower jaw or neck, metastasis should be suspected and a thorough investigation is required.
- d. Tongue mobility may be affected due to the treatment of tongue tumor. It is necessary to ensure there are no sharp edges of teeth or dentures hurting the tongue and whether dentures are well-fitting.
- e. A patient with oral tumor can see his mouth in the mirror. . Thus for early detection, a daily habit that the patient sees his own mouth to check for any recurrence, , ulcer or erosion of tongue is required.

Things to understand

Understanding symptoms and word of caution after treatment on tongue tumor is required.

Keywords

Tongue tumor, extraction, metastasis

Question 17

Select the choice which is NOT seen after treatment of tongue cancer.

- a. Dysphagia
- b. Anosmia
- c. Articulation disorder
- d. Taste disorder
- e. Mastication disorder

Answer : b

Summary : a, c, e. Dysphagia, articulation disorder and swallowing disorder may be caused by the change of tongue structure and limited tongue motor functions.

- b This has no relation to the treatment of tongue cancer. But on its own , inflammation of the nose and decreased appetite due to chemotherapy and radiation may cause anosmia.
- d Inflammation on tongue and zinc deficiency due to decreased appetite as a result of chemotherapy and radiation may cause taste disorders.

Question 18

Select which is INCORRECT regarding precautions after treatment of tongue cancer.

- a. Risk of aspiration increases depending on extent of resection.
- b. Appropriate oral care should be planned according to patient's condition and severity after operation.
- c. Patient with tracheostomy does not require suction of stomach tube. Only suction of upper cuff after cleaning the oral cavity is enough.
- d. The device supporting swallowing should not be taken off even for cleaning.
- e. Oral cleansing by water gun is appropriate if oral care may damage the wound right after surgery.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 4

Summary : a. Correct
b. Correct
c. Stimuli by oral care may insert air into the stomach, so suction is required.
d. It is useful for preventing aspiration, but the device should be taken off to be cleaned.
e. Correct

Things to understand

General care is required and appropriate oral care can prevent complications such as pneumonia.

Keywords

Tongue cancer

Question 19

Select the correct combination explaining about oral care for patients with bleeding

- a. Wiping with cotton swab to absorb the mouth wash or antiseptic substance
- b. Checking for bleeding at the time of brushing
- c. Positive elimination of calculus
- d. Treatment under conduction anesthesia
- e. Implementation under monitoring

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 1

Summary : a. Even small physiological stimuli may cause bleeding, thus selecting tools with less stimuli for oral care is required
b. To understand the current state, checking for bleeding is required.
c. Positive elimination of calculus may advance bleeding, thus it should be avoided.
d. Conduction anesthesia may cause internal bleeding and it is a contraindication for patients with bleeding.
e. Monitoring bleeding tendency all the time is difficult

Keywords

Bleeding tendency, oral care

Question 20

Select the correct combination explaining diseases which require careful caution on bleeding during oral care.

- a. Encephalorrhagia
- b. Diabetes
- c. Cirrhosis
- d. Hemodialysis
- e. Cerebral infarction

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 5

Summary : a. Encephalorrhagia itself does not have a tendency of bleeding except with existence of baseline disease which causes encephalorrhagia. This explanation is not appropriate for the question.
b. Diabetes causes capillary disorders in peripheral nerve tissue and functional disorders of white blood cells. It shows a tendency of protracted healing and increased susceptibility to infection but not bleeding, thus this choice is not appropriate for the question.
c. Cirrhosis causes a bleeding tendency because of thrombopenia, blood clotting factors derived from liver (factors 2, 7, 9, 10) and decreased fibrinolysis. Thus this choice answers the question.
d. For hemodialysis, systemic heparinization is implemented to prevent blood clotting. Thus this choice answers the question.
e. Cerebral infarction has a bleeding tendency due to antiplatelet therapy (Panaldine , Bayaspirin) and anticoagulant therapy (warfarin). Thus this choice answers the question.

Things to understand

This questions the knowledge about systematic body conditions which cause bleeding tendencies. In addition to bleeding due to gingival inflammation caused from lpoor oral health condition and periodontal inflammation & decubital ulcer, careful caution of baseline diseases which show bleeding tendency is required. In latter case, bleeding can be avoided with appropriate knowledge and caution. Especially in elderly patients, antiplatelet therapy (Panaldine , Bayaspirin) and anticoagulant therapy (warfarin) are used for coronary heart disease and cerebral infarction. DIC (disseminated intravascular coagulation) and its exacerbation should be paid careful attention as well.

Keywords

Bleeding tendency, systematic disease

Question 21

Select the initial treatment for bleeding seen after eliminating both adherences on the palate and solid materials on desquamated epithelium.

- a. Applying oxycellulose
- b. Platelet blood transfusion
- c. Pressure hemostasis by sterilization gauze
- d. A transvenous dosage of styptic
- e. Solidification hemostasis with electric scalpel

Answer : c

Summary : a. Local hemostatic is applied for bleeding from the socket after extraction but for superficial bleeding from the oral mucosa, this is difficult and this choice does not answer the question.

b. Platelet blood transfusion is required in cases of abnormal function and decrease of blood platelets caused due to some systemic disorders. This choice does not answer the question.

c. The basic of local hemostasis is pressure hemostasis. Pressure hemostasis with sterilization gauze is the easiest procedure to stop superficial bleeding on oral mucosa. This procedure should be the first choice and this is correct for the question.

d. Transvenous dosage of styptic is for deep-seated bleeding or cases where local hemostasis is difficult. This procedure is not the first choice.

e. Solidification hemostasis with electric scalpel is an invasive option when pressure hemostasis seems applicable. This procedure is not the first choice for superficial bleeding.

Things to understand

This questions the basic knowledge about the treatments for bleeding which may usually happen during oral care. Sputum adhering to hard palate and hard adherence of desquamated epithelium should be softened by warm water, green tea or other agents and carefully taken off from the submucosa. Pressure hemostasis after disinfection is effective.

Keywords

Bleeding tendency, hemostasis, pressure hemostasis

Question 22

Select the correct combination explaining about oral care for patients with fever.

- a. Implementing oral care in supine position is required
- b. Focus of infection in oral field should be checked
- c. Dry mouth should be improved
- d. Checking existence of aspiration before implementation is required
- e. Time duration for implementation can be long

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

Summary : a. The position is important

- b. If the fever occurs repeatedly, focus of infection might be in the oral cavity.
- c. Improving dry mouth with mouth wash, antiseptic substance and moisturizing agent is fundamental in oral care.
- d. Existence of fever from aspiration pneumonia is an important factor, thus existence of aspiration should be checked before implementation.
- e. Fever wastes energy, thus duration should be minimum.

Things to understand

Understanding importance of knowledge about cause of fever and required procedures in fever is important.

Keywords

Patients with fever, fever with unobvious reason, oral care

Question 23

Select the correct combination explaining about findings during oral care in patients with fever

- a. Dry mouth
- b. Geographic tongue
- c. Change in taste
- d. Advanced dental inflammation
- e. Oral candida

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary :

- a. Dry mouth is caused due to fever.
- b. Geographic tongue is not caused due to fever or dehydration.
- c. Change in taste may be caused from dry mouth due to fever but it is not the important finding for oral care.
- d. Patients with fever have decreased immunity and dental inflammation is likely to be advanced, thus this is an important finding.
- e. Patients with fever have decreased immunity and it results in increased susceptibility to infection.

Things to understand

This question asks about knowledge regarding fever and oral findings which are required to be understood for implementation of oral care.

Patients with fever tend to have a loss of body fluids by dehydration and their oral cavity become dry. Decreased secretion of saliva makes the oral cavity susceptible to infection. Increased susceptibility may result in oral candida, so white changes in the oral cavity should be cautioned.

Keywords

Patients with fever, dry mouth, increased susceptibility

Question 24

Select which does NOT require attention in oral care for patients with long-term fever.

- a. Mouth
- b. Advanced plaque
- c. Oral candida
- d. Hairy tongue
- e. Hypersensitiveness

Answer : e

Summary : a. Patients have increased loss of body fluids. Therefore, lack of water intake cause decreases saliva secretion and it results in dry mouth.
b. Patients' appetite decreases and along with that, oral intake decreases as well. This sequence may cause a lack of oral care by self- cleansing.
c. Most patients are given antimicrobial agents and microbial substitution of normal inhabitant bacteria occurs and it results in oral candida.
d. Most patients are given antimicrobial agents and microbial substitution of normal inhabitant bacteria occurs and it results in hairy tongue.
e. Patients' appetite becomes decreased and along with that, oral intake gets decreased as well. This sequence may cause the lack of oral care by self- cleansing.[C2]

Things to understand

Understanding symptoms in oral cavity seen among patients with long-term fever is required.

Keywords

Patients with fever, oral care, antimicrobial agent

Question 25

Select the correct combination explaining about oral care for patients with diabetes.

- a. Even if a patient complains, he should not be given a sugared candy because developing high blood sugar levels needs to be avoided.
- b. If a patient on insulin complains of pain, taking aspirin during oral care is preferable.
- c. A patient with diabetes is likely to become infected. Thus if bleeding by brushing is confirmed, oral care should be stopped.
- d. If a patient complains of thirst, make him gargle well with an aim of self- cleansing the mouth by taking water.
- e. If a patient does not have a good control of diabetes, he needs to have more frequent oral care and routine examinations by the dentist in comparison with other patients.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 5

Summary : a. Among patients with diabetes, coma caused from low blood sugar occurs rapidly and is associated with the risk of death. Dizziness before meals may be caused from low blood sugar and if the dizziness is severe, giving the patient a candy is appropriate.

b. If a patient is on insulin, combined usage of aspirin may greatly decrease blood sugar and careful caution is required. If a patient complains of pain, diagnosis and treatment by the dentist should be done first and medication is required, the patient should be seen by a general doctor.

c. If the bleeding is not severe, repeated careful brushing may cure bleeding. If bleeding continues for days, the dentist needs to be consulted to eliminate localized calculus and treat periodontitis.

d. Increased intake of water may cause sleeping disorders. However dryness in the oral cavity may also advance dental caries and periodontitis, oral care with a usage of artificial saliva or gargling to eliminate the dryness of the oral cavity is preferred.

e. If a patient is does not have good control of diabetes, he needs to have more frequent oral care and routine examinations (3-4 times a year) by the dentist. Also no snacks inbetween meals,regular scheduled meals and a daily habit of brushing teeth after each meal and before sleeping is preferable.

Things to understand

Diabetes may cause many secondary disabilities. But maintaining appropriate nutrition therapy is a fundamental treatment for diabetes and for that, oral care is very important. Dryness of oral mucosa and decreased self-cleansing can lead to poor oral hygiene. In addition, diabetes decreases resistance to infection, thus periodontal disease is likely to cause odontogenic infections. Maintaining good oral hygiene is the best way to prevent not only secondary infections but also inhibits progression of diabetes, so importance of oral care should be understood well by patients.

Keywords

Diabetes, hypoglycemia, increased susceptibility to infection

Question 26

Select the choice which is an INCORRECT oral care for patients with diabetes.

- a. Careful examination of the oral cavity and general body is required and oral care considering nutritional status is also required.
- b. There is a tendency that patients with diabetes show difficulty in improvement of periodontal disease because of decreased immunity.
- c. Preventive oral care and maintaining oral care is important because periodontal disease in patients with diabetes tends to progress.
- d. Oral care with moistening for dry mouth should be considered all the time.
- e. Patients with diabetes have oral conditions which are hard to improve like plaque growth. Thus, improvement of nutrition requires the first priority in comparison with oral care.

Answer : e

Summary : a. In these years, prevention and nutritional control has been respected. Form this point of view, oral care is seen as being a contributor for general health.
b. There is a tendency that patients with diabetes show difficulty in improvement of periodontal disease because of decreased immunity.
c. Preventive oral care and maintaining oral care is important because periodontal disease in patients with diabetes tends to progress.
d. Oral care with moistening for dry mouth should be considered all the time.
e. Patients with diabetes have oral conditions which are hard to improve like plaque growth. Thus, improvement of nutrition requires the first priority in comparison with oral care.

Things to understand

Diabetes is likely to cause periodontal disease and dry mouth. Especially periodontal disease may cause heart disease, arteriosclerosis and pneumonia, thus prevention of periodontitis and regular control are required.

Keywords

Diabetes, nutritional status, periodontitis

Question 27

Select the correct combination explaining about oral care for patients with heart disease.

- a. Oral care is important to prevent bacterial invasion into the heart from the inflammation in the oral cavity.
- b. Stress caused from oral care should be understood and discussed with the doctor, and flexible oral care according to the condition is important.
- c. Stomach tube or NG tube is required for patients with dysphagia because food residue tends to remain in the oral cavity and accumulate bacteria.
- d. Tooth brush with softer bristles or sponge brush should be used in oral care to prevent bacteria's invasion from wounds on oral mucosa.
- e. Periodontitis is a risk factor for ischemic heart disease, therefore oral care for patients with heart disease is very important.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary :

- a. Oral care is important to prevent bacterial invasion into the heart from the inflammation in the oral cavity.
- b. Oral care which does not cause strain on the heart is required in the acute period.
- c. Fundamental importance of oral care in patients with dysphagia is to prevent aspiration of saliva. Stomach tube or NG tube requires oral care for preventing dry mouth.
- d. There is not always mucosal inflammation in patients with heart disease. Positive oral care is better than negative one and efforts for prevention are important.
- e. Periodontitis is a risk factor of ischemic heart disease, therefore oral care for patients with heart disease is very important.

Things to understand

Oral care for patients with heart disease requires careful attention to prevent bacteria's invasion into the heart.

Keywords

ischemic heart disease, periodontitis

Question 28

Select the appropriate combination explaining about oral care for blood disease.

- a. There is a high possibility of bleeding during oral care, residual blood in the oral cavity causes halitosis, thus keeping the oral cavity clean is necessary.
- b. There is a high possibility of bleeding during oral care, and at the same time epidemic parotitis and stomatitis may also be caused, therefore this should be considered during oral care.
- c. When there is only bleeding tendency, gingiva and mucosa are healthy and tooth brush with common hardness of bristles, which can sufficiently eliminate plaque is recommended.
- d. Blood cake and saliva become concrete and hard to be eliminated, from the view of oral hygiene, those should be eliminated as early as possible in only one oral care even if the time duration become longer. Residual blood and saliva becomes hard to eliminate. For good oral hygiene, these should be eliminated as early as possible in the same oral care session even if the time duration is prolonged.
- e. Gingiva and mucosa even when touched by foods may cause bleeding. Checking the condition of prosthesis is required.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary :

- a. There is a high possibility of bleeding during oral care, residual blood in the oral cavity causes halitosis, thus keeping the oral cavity clean is necessary.
- b. There is a high possibility of bleeding during oral care, and at the same time epidemic parotitis and stomatitis may also be caused, therefore this should be considered during oral care.
- c. If there is a strong tendency of bleeding, using a toothbrush should be avoided. A sponge brush, cotton swab soaked in antibiotic agent is preferred.
- d. Hardened residual blood and saliva is difficult to eliminate and it should not be eliminated at once.
- e. Gingiva and mucosa even when touched by foods may cause bleeding. Checking the condition of prosthesis is required.

Things to understand

Examining the condition deeply and to judge appropriately is required and oral care should not be harmful due to wrong diagnosis.

Question 29

Select which is INCORRECT about oral care for patients with Behcet's disease.

- a. To relieve pain from aphthous, prescription of ointment and mouth wash by doctors and dentists are required.
- b. Not to stimulate aphtha, a usage of small toothbrush and cotton swab and sponge brush is recommendable. To avoid further occurrence of the aphthous, using a small toothbrush, cotton swab and sponge brush is recommended.
- c. Poor oral hygiene may worsen the aphthous
- d. Ill-fitting prosthesis and dental caries may adversely affect the oral mucosa, thus appropriate dental treatment is necessary.
- e. When a patient has severe pain, oral care should not be implemented.

Answer : e

- Summary :**
- a. To relieve pain from aphthous, prescription of ointment and mouth wash by doctors and dentists are required.
 - b. To avoid further occurrence of the aphthous, using a small toothbrush, cotton swab and sponge brush is recommended.
 - c. Poor oral hygiene may worsen the aphthous
 - d. Ill-fitting prosthesis and dental caries may adversely affect the oral mucosa, thus appropriate dental treatment is necessary.
 - e. Oral care at the time of pain tends fail, but careful attention to the condition of oral hygiene is absolutely necessary.

Things to understand

Behcet's disease

It is an unidentified systemic inflammatory disease. It affects skin, mucosa, and eyes. The peak onset age is about 30 years.

Importance of oral care for patients with Behcet's disease

Poor oral hygiene may worsen aphthous, so keeping the oral cavity clean is important. Oral care should be carefully implemented even is the patient complains of pain. Inflammation dry the oral cavity, and secondary inflammation may possibly occur.

Oral care points for patients with Behcet's disease

Appropriate prescription by doctors or dentists is required. Brushing gently with a small brush with soft bristles. Is needed Using a cotton swab is appropriate as a substitute for toothbrush. Plaque and calculus, and ill-fitted prosthesis may worsen inflammation so appropriate dental treatment is required.

Keywords

Behcet's disease

Question 30

Select which is correct regarding oral care for patients with Behcet's disease.

- a. Cleaning the mouth is very important, thus oral cavity should be cleaned with a toothbrush with hard bristles.
- b. If there is aphthous, oral care should be delayed until it is cured.
- c. Dentures touching the aphthous need to be worn as usual.
- d. Dentures may damage the oral mucosa at the time of wearing and removing, so it should not be removed.
- e. Application of steroid ointment is sufficient for aphthous.

Answer : e

- Summary :**
- a. Oral care is important though, it may form aphthous and gentle brushing with soft and small toothbrush is recommended with appropriate instructions.
 - b. Patients may complain of pain but continuously i oral care with mouth wash or cotton swab is necessary.
 - c. Dentures can be taken off and suitable forms of food should be considered.
 - d. Care of the oral cavity after taking off the denture and care of the denture itself is necessary.
 - e. Eliminating aphthous completely is difficult but for early cure, it is applied.

Things to understand

Symptoms of Behcet's disease are aphthous, genital ulcer, eye disease and skin disease. Aphthous are seen in most patients with Behcet's disease.

Keywords

Aphthous, canker sore, steroid ointment

Question 1

Select the correct combination explaining xylitol.

- a. Sweetness is in the same as sucrose.
- b. A kind of sugar alcohol
- c. Large intake causes nausea or vomiting.
- d. No calorie
- e. Hydrophilia

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

- Summary :**
- a. Xylitol has the same range of sweetness as sucrose and doubly sweet than sorbitol. When xylitol is taken in solid or crystal forms, due to the characteristic of xylitol, it gives a comfortable cool feeling.
 - b. Xylitol is a natural sugar alcohol and it contains 5 carbon atoms and 5 hydroxyls.
 - c. Intake of large amount of xylitol may cause soft feces (permeable diarrhea) but not nausea or vomiting. It has been permitted as a food additive by government since 1997.
 - d. Calorie of xylitol is 4.06kcal/g and it differs from artificial sugar which is non caloric.
 - e. Xylitol has great hydrophilia. In the hydrated layer, it is competitive to water molecule and in organic environment such as saliva, it is competitive to protein molecule.

Things to understand

Characteristic of xylitol

Keywords

Xylitol

Question 2

Select the correct combination explaining xylitol.

- a. Xylitol has an antiseptic property especially on mutans streptococcus.
- b. Adding Xylitol to the usual sugared cookie has an effect of preventing dental caries.
- c. Xylitol itself does not kill mutans streptococcus.
- d. Usage of xylitol as a sweetener instead of sugar can prevent not only dental caries but also periodontal disease.
- e. Xylitol added in chewing gum has an effect of preventing caries, but added in coffee as a sweetening agent does not have any effect.

Answer : d

- Summary :**
- a. Xylitol has an effect on inhibiting the growth of bacteria but no effect on killing bacteria.
 - b. Dental caries occurs with bacteria producing acid and polysaccharide by eating sucrose. Thus xylitol added cookie containing sucrose does not have an effect on preventing dental caries.
 - c. Xylitol has an effect on inhibiting the growth of bacteria but no effect on killing bacteria.
 - d. A usage of xylitol instead of sugar results in fewer intakes of sucrose, and it can inhibit production of dextran which helps bacteria in plaque adhering surfaces. Thus plaque is likely to be eliminated; implementation of appropriate oral care may prevent periodontal disease.
 - e. Effects of xylitol do not differ in how it is taken. Usage of xylitol instead of sugar results in fewer intakes of sucrose and can reduce the risk of dental caries.

Things to understand

Xylitol with 5 monosaccharides does not exist in the world of nature, and bacteria and animals do not have enzymes resolving xylitol. Also xylitol is in the same range of sweetness with sucrose and it is used as diet sweetener. Therefore a usage of xylitol instead of sucrose may reduce intake amount of sucrose and may result in preventing dental caries and periodontal disease.

Keywords

Xylitol, preventing dental caries, preventing periodontal disease

Question 3

Select the correct choice explaining xylitol.

- a. Xylitol is a natural carbohydrate and it is not artificial.
- b. Xylitol is sweetening and it is not included in oral care products.
- c. Intake of xylitol may reduce amount of plaque adhering to surface of teeth.
- d. Xylitol has been used for over 20 year in Japan.
- e. Xylitol has specific drug toxicity on mutans streptococcus.

Answer : c

- Summary :**
- a. Xylitol is artificially made. Thus this choice is not appropriate for the question.
 - b. Xylitol is sweetening and included in oral care products like tooth paste and mouth wash. Thus this choice is not appropriate for the question.
 - c. Mutans streptococcus cannot integrate and it results in reduced amount of plaque.
 - d. Use of xylitol in Finland reduced dental caries among children. It was permitted to be used as food items in 1997.
 - e. Xylitol has an effect on inhibiting the growth of bacteria but no effect on killing bacteria.

Things to understand

Xylitol has an effect of inhibiting the growth of bacteria and this effect can prevent dental caries. It also has an effect on remineralization but it is not special because it is the essential effect of sugar alcohol. On the other hand, recaldent made from milk significantly advances remineralization by ion.

Question 4

Select the correct combination explaining characteristics of teeth in elderly persons.

- a. A whiter color is partaken.
- b. Rapid development of dental caries
- c. Extrusion of a tooth
- d. Develops attrition and abrasion
- e. Wedge-shaped defect

Combination : 1 a,b,c 2 a,b,e 3 a,d,e 4 b,c,d 5 c,d,e

Answer : 5

Summary :

- a. Calloused dental enamel becomes transparent and the color of dentin comes up. This may advance the color of tooth to yellow.
- b. Dental enamel and dentin get mineralized and become firm in consistency. Therefore in comparison with younger people, dental caries in elderly people do not develop rapidly.
- c. Alveolar bone and gingival margin become recessive and relatively the teeth become extruded. Alveolar bone is absorbed at a rate of 0.06 mm per year.
- d. Dental enamel and dentin develops attrition and abrasion with aging.
- e. Brushing teeth causes abrasion and wedge-shaped defects are formed along with ageing. Exposure of dental root causes sensitivity with cold and warm water.

Things to understand

Attrition of dentition develops in the elderly and these teeth get extruded. Pulp becomes narrow due to denaturation and the color of teeth becomes yellower. Dentition develops calcifications and becomes harder. Wedge-shaped defects and deposition of calculus at the region of roots are seen due to exposure of teeth and these poor conditions lead to development of dental caries and reduction of gingiva & alveolar bone.

Keywords

Elder people, aging, teeth

Question 5

Select which is NOT appropriate regarding periodontitis.

- a. Absorption of alveolar bone is seen.
- b. Teeth mobility increases.
- c. Gingival bleeding and discharge of pus is seen.
- d. The biggest factor is calculus.
- e. Cells relating to immunity are engaged.

Answer : d

Summary :

- a. Periodontal disease is caused from inflammatory lesion in periodontal tissues. There are inflammations localized only in gingiva and periodontitis which breaks periodontal tissues. Alveolar bone is absorbed in periodontitis.
- b. Periodontitis shows absorption of alveolar bone and breaking of periodontal membranes and these conditions may cause teeth mobility. If left without treatment, resorption will be increased and tooth will be lost.
- c. Gingiva bleeding is a very typical symptom. When Periodontitis is acute, discharge of pus is seen. When acute infections are repeated, Periodontitis becomes advanced.
- d. The cause of periodontitis is plaque. Calculus is not the direct factor of periodontal disease. It helps plaque deposit and it is harmful.
- e. Periodontitis activates cells related to immunity and inflammation and production of cytokine results in breaking periodontal tissue.

Things to understand

Periodontal disease causes inflammatory lesion in periodontal tissues (gingiva, periodontal membrane, dental cementum, alveolar bone) due to dental plaque adhering to boundary between tooth and gingiva (the root). At the earlier stage of disease, inflammation localizes to gingiva and the condition is called "gingival inflammation", it is associated with the symptoms that can flare, like swelling and bleeding, it is a reversible disease that can be cured by brushing. However, the advanced disease which destroys periodontal tissue is called "periodontitis". Lesions on the periodontal membranes and resorption of alveolar bone are seen and these result in mobility of teeth. Neglecting the condition may result in loss of dentition. Lesioned periodontal tissue cannot be recovered even after disappearance of inflammation and it can be called a permanent disease. Dental plaque is a lump of bacteria and bacteria associated with periodontitis causes inflammation. Inflammation stimulates cells associated with immunity and inflammation stimulates production of substances such as cytokine which may activate osteoclastic cells resorbing bone and periodontal tissue are destroyed.

Question 6

Select the right combination explaining about periodontal disease.

- a. Diabetes is one of the risk factors for periodontal disease.
- b. Bacteria attacks teeth-supporting tissues in periodontal disease.
- c. Approximately 50% of middle-aged people are affected with periodontal disease and it is the leading factor for tooth loss after the age of 40's.
- d. Periodontal disease is not related to bacterial endocarditis, osteoporosis and aspiration pneumonia.
- e. Examples of periodontal disease are gingiva inflammation and periodontitis.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary :

- a. Diabetes is related to periodontal disease. A patient with diabetes has an abnormal metabolic process and it causes weakening of the biological defense system & increased susceptibility to infections leading to periodontal disease.
- b. Bacteria in plaque leads to periodontal pockets and alveolar bone located under gingiva is resorbed making it incapable to support teeth. . As result, teeth are lost.
- c. Over 80 % of middle-aged people have periodontal disease. It is called a national affliction and it is the leading cause of tooth loss after the age of 40 years.
- d. It is related to not only oral cavity condition but also other general body condition and daily habit. It is also affected by smoking, psychological stress and antiepilepsy drug. Adversely, it affects general body condition, bacterial endocarditis, osteoporosis and aspiration pneumonia.
- e. Gingival inflammation is localized only to the gingiva. It can be improved by brushing or by treatment for periodontitis. Untreated gingival inflammation and periodontitis cause the bacteria from periodontal pocket to attack periodontal tissues.

Things to understand

Bacteria from periodontal pockets absorb alveolar bone and it results in periodontal tissue becoming incapable of supporting teeth in periodontal disease. Over 80 % of middle-aged people have periodontal disease. It is called a national affliction and it is the top cause leading to teeth loss after the age of 40 years.

Keywords

The causes of tooth-loss, relation to general body condition

Question 7

Select the combination explaining subjective symptoms related to periodontal disease.

- a. The color of gingiva is pink.
- b. Tiredness causes gingiva to be swollen.
- c. Teeth get longer.
- d. Oral cavity gets sticky at the time of waking-up.
- e. White substance covers gingiva and mucosa.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

Summary :

- a. Healthy gingiva is pink in color. Adversely, with periodontal disease it turns red and additionally if there is blood stasis, it turns purple in color.
- b. When periodontitis becomes a chronic condition, subjective symptoms are poor. But stress and tiredness decreases immunity and it turns acute.. Swelling of the gingiva is seen along with pus discharge and pain.
- c. Periodontitis causes resorption of alveolar bone, gingiva recedes and tooth root gets exposed. Periodontitis causes mobility of teeth.
- d. Periodontitis causes gingival bleeding and sometimes pus discharge. During night, bacteria is likely to grow and this is the reason for uncomfortableness at the time of waking up.
- e. White substance on the gingiva, cheek, tongue and mucosa is not periodontal disease but oral mucosal disease such as candidiasis and leukoplakia. Diagnosis and treatment of the condition is required.

Things to understand

Understanding the findings and prevention of periodontitis is required. If the patient's condition corresponds to some of the check points of periodontal disease (refer to table), periodontitis should be suspected. The cause of periodontitis is plaque and basic treatment and prevention involves appropriate plaque control & brushing to eliminate plaque.

Plaque control includes mechanical control by tooth brush or other cleaning devices and chemical control by medical agents. Furthermore, it includes

professional control implemented at the dental office or self-control implemented at home.. Daily habit of oral care is essentially required, the patient's brushing technique may be incorrect so appropriate instructions by a professional is recommended.

Table: Check points of periodontal disease

Gingiva is red or purple in color. Gingiva is likely to bleed during brushing. Gingiva between the teeth becomes swollen and rounded. Gingiva recedes between the teeth leaving a triangular space. Teeth are mobile. Teeth seem longer. Space between teeth is seen. Oral cavity is sticky at the time of waking-up. Sometimes gingival swelling may be associated with pain. Sometimes halitosis is present.

Question 8

Select the correct combination explaining about check-points of periodontal disease.

- a. Sticky mouth or halitosis at the time of waking-up primarily indicates a symptom of periodontal disease.
- b. Gingiva between teeth becomes swollen and rounded..
- c. Healthy gingiva is a shiny dusky-red in color.
- d. Gingival bleeding and longer appearing teeth are signs of periodontal disease.
- e. The fundamental prevention of periodontal disease is plaque control.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary : a. Changes in gingiva (color, shape, existence of gingiva bleeding) are important.
There is no sticky mouth or halitosis when there is good oral health.

- b. Changes in color (color, shape, existence of gingiva bleeding) are important. The healthy gingiva between teeth is a sharpened triangle.
- c. Changes in condition of gingiva (color, shape, existence of gingiva bleeding) are important.. The color of healthy gingiva is like that of magnolia.
- d. Changes in condition of gingiva (color, shape, existence of gingiva bleeding) are important. The healthy gingiva does not bleed by brushing teeth. Gingival retraction by resorbed alveolar bone makes the teeth seem longer. Also mobile teeth and halitosis should be paid attention as well.
- e. Fundamental preventive procedure is plaque control. Cleaning by dental tooth brush, dental floss and interdental tooth brush is required. There are few subjective symptoms. Periodical dental care including elimination of calculus by the dentist is required.

Things to understand

Check points of periodontal disease are changes in gingival condition such as color, shape, existence of gingiva bleeding. The best prevention is plaque control.

Keywords

Changes in gingival condition, plaque control, swelling of gums, halitosis

Question 9

Select which is INCORRECT regarding procedure for significantly mobile teeth.

- a. Extraction
- b. X-ray examination
- c. Inhibiting tooth brushing
- d. Fixing teeth
- e. Eliminating calculus

Answer : c

Summary : a. Significant swell-up tooth should be extracted if it is diagnosed as disreservable. Significantly mobile teeth should be extracted if it is diagnosed as irreversible. After extraction, use of an oral prosthesis such as bridge and

artificial dentition is required to keep appropriate occlusal relation.

- b. The reasons of tooth mobility may be dislocation or fracture as added outside factors and destroyed periodontal tissue which is supposed to support teeth. X-ray examination is very effective before diagnosis.
- c. When mobile teeth are seen in patients with periodontal disease, treatment for periodontal disease should be done first of all. Brushing is the primary step and very effective procedure for eliminating factors of this disease.
- d. Replacing significantly mobile teeth makes the supporting tissues stable. At the same time, brushing and eliminating calculus can be implemented more easily. But it may become overloaded with teeth which support fixing, so disreservable teeth should not be fixed without deep consideration. But fixed prosthesis should not be done without deep consideration so as not to overload the supporting teeth.
- e. Elimination of calculus is an important procedure for periodontal disease. Especially, eliminating calculus and plaque in periodontal pockets may improve gingival inflammation and reduce the level of teeth mobility.

Things to understand

Largely mobile teeth require consideration of the cause and availability of conservation. The causes of mobile tooth are injury and periodontitis. Injury includes tooth fracture, dislocation of teeth and fracture of alveolar bone. Understanding the cause from findings from medical examination, visual inspection and other tests is the primary requirement. X-ray examination is effective to understand the condition of teeth and bone.

When conservation is not possible, extraction is implemented. When conservation is possible as in the case of injury, splinting the injured part with wire or agent and waiting till the injured part is cured, is required. During this period, oral cavity should be clean. In the case of periodontitis, treatment for periodontitis is required. Implementation of teeth brushing to eliminate plaque and to reduce inflammation is required. After that, eliminating calculus and plaque in regions where toothbrush is unreachable such as periodontal pocket, is required. Furthermore, adjusting the occlusion may be required when there is over load in occlusion.

Keywords

Mobile teeth

Question 10

Select the correct combination explaining about procedures for severely mobile tooth.

- a. The reason for severely mobile tooth is mainly damage from outside.
- b. It may be spontaneously lost, so accidental swallowing should be cautioned.
- c. If the mobile tooth is supporting a partial denture, one must be careful while removing the denture.
- d. Severely mobile tooth should be immediately extracted by a team consisting of a dentist and general doctor.
- e. Brushing should not be too strong and should be implemented gently by freehand.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

Summary : a. When a tooth is severely mobile, seeing a dentist is recommended. It may be preserved or may be unable to extract due to general body condition.
b. It may be also spontaneously lost and accidental swallowing is possible so in case of a patient requiring nursing care, careful caution is required.
c. If the mobile tooth supports a partial denture, denture stabilization is not good and tooth may be lost at the time of denture removal so careful caution is required.
d. Even when extraction is needed, it cannot be done right away as it also depends on the patient's general health. A well-balanced treatment under careful consideration of conditions of teeth, oral cavity and general health is required. Consultation with a general doctor as well as dentist is required.
e. Mobile tooth should be held with the opposite hand (hand not holding the tooth brush) It should not be brushed by free hand. Gentle brushing using the edge of bristles is preferable.

Things to understand

Things to understand Injury or periodontitis is a considerable cause of teeth mobility. In case of injury, tooth fracture leads to mobility. It is recommended to be seen by a dentist. There may be a risk of spontaneous loss so accidental swallowing should be cautioned by explaining the risk to the patient or caretaker in order to prevent accidental swallowing.

Keywords

Causes are damage from outside or periodontitis, brushing gently, extraction is not always applicable.

Question 11

Select the correct combination explaining periodontal disease in smokers.

- a. Higher prevalence of periodontitis in comparison with non-smokers
- b. Lots of melanin on gingiva
- c. Low effect of periodontal treatment
- d. Significant gingival inflammation
- e. Increased immune function

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 1

- Summary :**
- a. Smoking is one of the risk factors of periodontitis. Smokers show 2-9 times higher prevalence of periodontitis. There is an epidemiologic study reporting increased calculus and advanced lesions on alveolar bone and periodontal membrane.
 - b. Smokers have increased melanin in the gingiva in comparison with nonsmokers and cessation of smoking may reduce the melanin. Melanin is produced from melanocytes present in gingival epithelium, and melanin accumulates in cytoplasm in gingival epithelium.
 - c. Smokers show low effect of periodontal treatment in comparison with nonsmokers. Therefore, early detection and treatment, questioning regarding smoking habit is absolutely imperative, aggressive instructions for cessation of smoking is necessary,
 - d. The specific character of periodontitis among smokers is that inflammation in gingiva is mild in comparison with the degree of lesion of periodontal tissue. Therefore subjective symptom is poor and, it is detected later. Gingival findings may cause a misdiagnosis of degree of periodontitis.
 - e. Decreased immune function in gingiva among smokers is confirmed. And obvious functional and morphological anomalies in microscopic vessels may affect cells of periodontal membrane and alveolar bone.

Things to understand

Understanding adverse influence of smoking on periodontitis and specific

characteristics of periodontitis among smokers (refer to table) is required. There are lots of epidemiological studies about relation between periodontitis and smoking. The results differ with methods and region of interest, however, every study indicates that smokers may show higher prevalence (2-9 times more) of periodontitis.

High prevalence of periodontitis among smokers is due to the adverse influence of smoking on microscopic vessels in gingiva. Contraction and morphological anomalies of vessels cause decreased blood flow rate and it affects nutrition and metabolism. At the same time, it affects immune function and lymphocytes, polymorphonuclear leukocytes and neutrophils show decreased function resulting in decreased defensive function. In addition, it may adversely affect cells of gingival tissues and metabolic abnormality of tissue is seen as a result.

Table: characteristics of periodontal disease in smokers

Deep periodontal pocket, severe resorption of alveolar bone, highly damaged periodontal membrane
Gingival inflammation is mild considering the large damage of periodontal tissues in comparison
Accumulation of calculus in smokers is equally likely as in non-smokers.
Large accumulation of melanin in gingiva
Less treatment effect

Question 12

Select the choice explaining relatively less relation of the daily habit to periodontal disease.

- a. Smoking
- b. Diabetes
- c. Stress
- d. Oral hygiene habits
- e. Drinking alcohol

Answer : e

Summary :

- a. Close relation between periodontal disease and smoking has been indicated. Smoking is an obvious risk for periodontal disease. Advanced lesions of alveolar bone and periodontal membrane are seen with decreased function of immunology tissue and morphological anomalies of microscopic vessels in gingiva. It is clearly one of the risks of periodontitis.
- b. There is a high prevalence among patients with diabetes. Diabetes is an obvious risk factor of periodontal disease. Hyperglycosemia and hyperlipidemia due to diabetes are considered factors that worsen the inflammation by bacteria.
- c. Stress is not as strongly related as smoking and diabetes, but it is also a risk factor of periodontal disease. Specifically ulcerous periodontitis is well known to have a strong relation with stress. Decreased immune function is also confirmed.
- d. Plaque is a direct risk factor of periodontal disease, so oral hygiene habits can be said to be the most related habit to periodontal disease. A daily habit of brushing appropriate number of times per day and for an appropriate duration each time is required. The right brushing technique is also important.
- e. Drinking alcohol has the least relation in comparison with other items. But recently, relationship between over-drinking and periodontal disease are indicated. Preventing and treating periodontitis requires establishment of appropriate daily habits.

Things to understand

Periodontitis is caused by bacteria in plaque. From this point of view, periodontitis can be considered as infection. However the general idea of lifestyle diseases has been established and the idea sees chronic diseases from the view of daily habits. Since periodontitis associates with chronic inflammation and daily habits greatly affect its progression and improvement,

thus the idea of considering periodontitis as a lifestyle disease has been suggested. There are many epidemiological studies about relation between daily habits and periodontitis. The most affective habit is oral cleaning. It is easy to understand because bacteria are one of the causes of periodontitis. The factor affecting progression or onset of disease is called "risk factor".

Smoking and diabetes can be called as risk factors of periodontitis as the present stage. The association of stress as strong as that of smoking and diabetes is not confirmed yet, however, there are some animal studies reporting the positive relation between stress and periodontitis. The specific type of periodontitis called ulcerous periodontitis has been shown to have a positive relation with stress. Also, there are many studies on osteoporosis recently Positive relation between periodontitis and drinking is not clarified; however, excessive drinking should be avoided for preventing periodontitis and establishing appropriate daily habit is important.

Keywords

Periodontal disease

Question 13

Select the correct combination explaining appropriate brushing technique for improvement of periodontal disease.

- a. Using large horizontal brushing strokes
- b. Using large vertical brushing strokes
- c. Place the bristles slightly touching the gingiva
- d. Holding toothbrush in a vertical direction and moving vertically parallel to teeth.
- e. High brushing pressure makes cleaning effective.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 4

Summary : a. Brushing teeth horizontally may exert inappropriate pressure on gingiva and it may result in gingival recession. . In the Rolling method, tooth brush is rotated horizontally , however plaque easily remains at the tooth cervix, and inappropriate implementation may cause recession of gingiva.

- b. Pushing tooth brush lightly and adding vertically micro vibrating and eliminating plaque by slight movement of edge of bristle has been recommended. Brushing with light strokes with added vertical micro-vibrating strokes can eliminate plaque by slight movement of edge of bristles has been recommended. Larger movements of tooth brush is not good because it may abrade teeth and damage gingiva.
- c. Eliminating plaque around the boundary between teeth and gingiva is important. Orthogonally-placed bristles to the surface of teeth clean the teeth with a horizontal micro vibration.
- d. Crowded teeth need to be brushed with vertical strokes.
- e. High brushing pressure may damage teeth and gingiva. 20 -30 circulations by micro vibration for one part with 200g tooth brush pressure is recommended.

Things to understand

Appropriate way of brushing teeth to prevent periodontitis should be seen from the two points of view of brushing habit and technique (refer to table). To establish brushing habit, understanding positive effect of implementation of oral care and adverse influence of absence of oral care is required and motivating patients is fundamental. Selection of the habit and technique should suit the oral condition of each individual. Formation and hardness of bristles differ with each brushing method, but the appropriate hardness to avoid damaging tooth and gingiva is required.

Regarding brushing method, use of the edge of bristles is most common. The most popular technique of scrubbing method is to place the bristles on the front surface of teeth vertically and 45 degree behind teeth. Moving bristles horizontally with larger strokes is not appropriate and 200g brush pressure with micro vibration is appropriate to eliminate plaque. Furthermore, placing bristles at 45 degree angle at the boundary between teeth and gingiva to insert the edge of bristles into the periodontal pocket and applying micro vibration is also a common technique of the Bass method. Accessory devices vary widely and dental floss and interdental brush which are used for cleaning between tooth is the most common device.

Table: things to consider regarding brushing habit and technique

	Things to consider
Habit	Times and timing in a day, duration for one time, location brushed, positioning (standing position or sitting position)
Technique	Choice of tools, how to place the toothbrush, how to move the brush, brushing pressure, order of brushing, how to check

Question 14

Select the combination which is INCORRECT regarding brushing for prevention of periodontal disease.

- a. Brushing teeth after each meal is preferable, but a habit of taking a long time to brush each tooth carefully at least once a day is much preferred.
- b. The parts in which eliminating plaque is difficult, using other cleaning tools such as dental floss and interdental brush is recommended.
- c. Edge of bristles should be inserted at the border in between the teeth and gingival and then moved in small, strong strokes.
- d. In case of applying toothpaste, large amount of toothpaste may be effective.
- e. Natural fiber bristle can provide more effective brushing in comparison with nylon bristles.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 5

- Summary :**
- a. To prevent periodontitis, the correct balance of 3 items 1: daily brushing habit, 2: brushing technique 3: selection of oral care devices is required. Those items should be included in the daily life and one time a day requires cleaning oral cavity perfectly. These items should be included in daily life and perfect cleaning of the mouth atleast once a day is required.
 - b. To prevent periodontitis, the correct balance of 3 items 1: daily brushing habit, 2: brushing technique 3: selection of oral care devices is required. Selecting appropriate oral care devices for the patient in consultation with the dentist and dental hygienist is required.
 - c. To prevent periodontitis, the correct balance of 3 items 1: daily brushing habit, 2: brushing technique 3: selection of oral care devices is required. Putting edge of bristles on the surface of tooth correctly and moving it with small vibrations with light pressure is preferable.
 - d. In case of using tooth paste, one bean size is enough. Usage of dental rinse is also good but it is only an accessory agent. Eliminating plaque which is the cause of periodontitis, should be achieved by fundamental way of devised cleaning with tooth brush.
 - e. Natural bristles are easily soiled and are too soft. Thus they are inappropriate for edge-brushing. Nylon bristles are recommended.

Things to understand

Good combination of three functions of 1: Brushing habit 2: brushing procedure 3: choice of appropriate tool, is required for prevention of periodontal disease. Regarding toothbrush, the grip should be straight and bristles should be in 3 lines and 2.5 cm wide; nylon bristles with general hardness is baseline. Edge of bristle placed on the surface of tooth is moved in a small motion softly.

Keywords

Habit, technique, appropriate brushing

Question 1

Which is wrong regarding primary disease with gingival bleeding?

- a. leukemia
- b. periodontitis (alveolar pyorrhea)
- c. black hairy tongue
- d. cerebral infarction
- e. gingival tumor

Answer : c

Summary :

- a. Leukemia is a disease of neoplastic growth, called "blood cancer". Its specific intraoral symptoms are gingiva anemia, growth and hemorrhage. In addition, it is also observed in blood disease such as hemophilia, thrombocytopenic purpura, or liver disease.
- b. Periodontitis is the inflammation caused by bacteria in plaque that adhere on the tooth surface. It is classified into two broad categories; gingivitis in which pathological change is marginally localized or periodontitis which includes resorption of alveolar bone. Redness, swelling and bleeding of gums are observed, and as it progresses there is pus discharge and tooth mobility.
- c. Black hairy tongue is caused by growth-extension of cornified layer of filiform papillae on Dorsum linguae, and tongue appears blackish brown and hairy. Though often without subjective symptoms, administration of antibiotics or steroids for a long period has its effect on intraoral bacterial flora and this is assumed to be the cause of the change.
- d. In some cases of brain disease or heart disease (myocardial infarction, atrial fibrillation, valvular heart disease), gingiva bleeding is recognized to be associated with administration of anticoagulation agents.
- e. If gingival tumor (benign or malignant) gets injured and forms ulcers on the surface, it might easily bleed.

Things to understand

Identify the cause of gingival bleeding whether based on gums itself or systemic disease such as heart disease.

Keywords

gingival bleeding, periodontitis, anticoagulant agent

Question 2

Which is wrong regarding to the cause of gingival bleeding?

- a. Vitamin D deficiency
- b. Idiopathic thrombocytopenic purupura
- c. Vitamin K deficiency
- d. Vitamin C deficiency
- e. adult T-cell leukemia

Combination : 1 a, b 2 a, e 3. b, c 4 c, d 5 d, e

Answer : 2

Summary : a. Because of vitamin D deficiency, growth insufficiency of bone may occur.
b. blood platelet has an important role on blood coagulation process. In idiopathic thrombocytopenic purupura there is decreased platelet count, gingival bleeding often occurs.
c. Vitamin K is one of the fat-soluble vitamins and has an important role in blood coagulation.
d. Vitamin C is a water-soluble vitamin, and contributes to formation of healthy gums and maintains normal connective tissue. When there is lack of vitamin C, gingival swelling and bleeding may be observed.
e. Acute myeloid leukemia may be characterized by gingival bleeding

Things to understand

Understand diseases that cause gingival bleeding.

Question 3

Which is correct regarding gingival bleeding?

- a. Bleeding from gingival margin often leads to massive bleeding.
- b. Bleeding stemmed from leukemia or hemophilia is easily stopped.
- c. Bleeding caused by periodontal disease is hard to be stopped.
- d. Bleeding occurs with malignant tumor, gingival ulcer and dysplasia.
- e. Bleeding in the case of malignant tumor is easily stopped by compression.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 5

Summary :

- a. Because there is no great vessel in gingival margin, massive bleeding would not be caused. If inflammation causes hyperemia, small bleeding may occur repeatedly because there are many microvessels.
- b. Once bleeding associated with hemorrhagic diseases such as leukemia, hemophilia or thrombocytopenic purpura occurs, it is difficult to stop it. If compression fails to stop bleeding, existence of hemorrhagic diseases should be suspected, and history taking and/or examination should be considered.
- c. In periodontal disease there might be hyperemia or hemostasis in marginal gums and periodontal pockets, though bleeding would be stopped naturally, recurrent or persistent bleeding often occurs. Brushing may be effective in improving inflammation that will reduce bleeding tendency.
- d. Gingival malignant tumor such as cancer causes gingival bleeding. The difference from gingivitis is the appearance of ulcer or gingival dysplasia accompanied with pain. Tumor with significant gross abnormality would be observed.
- e. Although gingival carcinoma easily causes bleeding even with modest stimuli, it is usually stopped with or without compression. Bleeding also occurs in benign tumor.

Things to understand

Many cases of gingival bleeding is based on gingival margin, and mostly caused by periodontal disease. Though bleeding by periodontal disease is usually not much, but often recurrent or persistent. Consequently patients might misidentify as massive bleeding. Because bleeding is usually stopped naturally, it is rare to be problematic.

On the other hand, bleeding not caused by periodontal disease needs to be cared. The existence of hemorrhagic factors including leukemia, hemophilia, thrombocytopenic purpura or oral administration of anticoagulant agent makes blood coagulation difficult. Also it is crucial to differentiate malignant tumor from others, because malignant tumors often causes gingival bleeding. If difficulties to stop bleeding presents with symptoms other than periodontal disease, for example, ulcer on gums and quite gross abnormality are confirmed, then consultation with specialist is required.

Keywords

gingival bleeding, periodontal disease

Question 4

Which is correct regarding the way of brushing for those with gingival bleeding tendencies?

- a. Brush the tooth crown avoiding touching gums.
- b. If bleeding is caused by injury, active brushing is recommended.
- c. To brush quickly with as large toothbrush as possible is ideal.
- d. Usage of harder toothbrush is recommended.
- e. In the brushing technique, the toothbrush is supposed to be faced perpendicular to the surface of the tooth.

Answer : e

- Summary :**
- a. In cases of gingival bleeding, though there is a need to brush avoiding the gums, it is important to clean dental plaque that is deposited in the boundary of the teeth and gums. Therefore to brush as near to the gum as possible is recommended.
 - b. If bleeding is caused by injury, unnecessary brushing should be avoided until injury gets healed. On the other hand, bleeding caused by periodontitis could be improved with reduction of inflammation as a result of by active brushing.
 - c. Choose a small-sized toothbrush in accordance with the size of patients' mouth and try to brush each part of the gums and teeth carefully.
 - d. If gingival bleeding due to periodontitis is confirmed, use of a soft toothbrush is recommended. Parts unable to be brushed with a toothbrush, must be brushed with other adjunctive cleansing tools carefully.
 - e. There are two representative methods. One is the Scrubbing method and the other is the Bath method. In the former, the front side of the brush is faced perpendicular to the teeth and in the latter the brush is placed diagonally at an angle of 45 degrees so that the tip of the bristles can enter the gingival sulcus.

Things to understand

Most of gingival bleeding is caused by periodontitis. In periodontitis avoiding teeth-brushing because of fear of bleeding accumulates plaque resulting in deterioration of inflammation. Therefore dental plaque should be removed by brushing as much as possible. As mentioned above, if there is gingival inflammation, use of soft toothbrush should be recommended. A smaller toothbrush makes brushing delicate in every part. Since touching to gums with the toothbrush may cause bleeding, the gingival boundary needs to be brushed carefully to improve the inflammation, taking care not to touch the gums. Strokes of small width should be given. Interdental regions that cannot be brushed with a toothbrush needs to be cleaned by an auxiliary cleaning device such as an interdental brush. Although the Scrubbing method and the Bath method are common, in case of gingival bleeding, careful insertion of tips of the toothbrush into the periodontal pocket or the gingival sulcus is required in the Bath method.

Keywords

Brushing

Question 5

Which is the oral medication requiring caution in oral care as it causes gingival bleeding?

- a. anticoagulant agent (Warfarin)
- b. anti platelet drug (Bayaspirin)
- c. activated vitamin D3 formulation
- d. Bisphosphonate
- e. Antibioitics

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5. d, e

Answer : 1

Summary :

- a. Warfarin shows anticoagulant action by controlling the composition of vitamin K-dependent blood coagulation factor in the liver. It may become hard to stop bleeding when inappropriate mouth care is provided.
- b. The antiplatelet has an inhibitory function toward agglutination and is mainly used for prevention of thrombus or embolus. It may become hard to stop bleeding when inappropriate mouth care is provided, the same as anticoagulant agent.
- c. Activated vitamin D3 formulation is used for osteoporosis, chronic kidney failure or hypoparathyroidis, and promotes reabsorption of calcium in intestines.
- d. Bisphosphonate is used for hypercalcemia caused by osteoporosis or malignant tumor. It has an inhibitory effect on osteoclasts resulting in antiresorption and reduction of serum calcium level.
- e. Antibioitics shows antibacterial effects on susceptible pathogenic microorganisms. It suppresses inflammation caused by microorganisms and helps to improve gingival bleeding.

Things to understand

PT-INR is commonly used for the evaluation of anticoagulation (INR controlled ranges between 2.0 and 3.0). If gingival bleeding continues, there is a need to confirm the level of INR. In case of the excessive bleeding, reduction of warfarin or administration of vitamin K or coagulation factor should be considered. Also high blood pressure or liver malfunctioning needs to be checked. Though the common procedures to stop gingival bleeding are compression hemostasis with simple gauze, gauze soaked in hydrogen peroxide or Bosmin, if bleeding cannot be stopped, consultation with a dentist is recommended.

Keywords

Gingival bleeding, oral administration drugs

Question 6

Which is correct regarding oral care for angular stomatitis or angular cheilosis?

- a. To treat the cause.
- b. To keep lips and mouth clean.
- c. To provide a denture if there is lack of teeth.
- d. To lick the lesion to keep it moist.
- e. To promptly train mouth opening.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 1

Summary :

- a. Treating the cause is primary. When particularly there is any systemic disease suspected to be the cause, the treatment for those diseases should be done at the same time.
- b. Angular stomatitis is suggested to be related to periodontitis, dental caries or poor oral health, so dental treatment and improvement of oral hygiene are necessary.
- c. Loss of teeth affects occlusion, in the elderly people it results in increase in wrinkles and a tendency of pooling saliva in the region of the angle of the mouth. This is a favorable condition for reproduction of bacterium and fungi, and causes angular stomatitis.
- d. Angles of the mouth that are moist with saliva accelerate reproduction of bacterium and fungi. It exacerbates angular stomatitis. Moist angles should be wiped with gauze to keep dry.
- e. Since in angular stomatitis or angular cheilosis ulcers and crusts are often observed, opening mouth wide may crack the mouth angles and cause bleeding. Therefore avoiding opening the mouth more than required is recommended. Especially while putting in and taking out dentures, caution is required.

Things to understand

This is the most common labial disease among elderly, and the primary treatment is to protect angles of the mouth from getting moist and to keep it dry.

Keywords

Angular stomatitis, angular cheilosis, oral care

Question 7

Which is correct regarding oral care for patients with gingivostomatitis?

- a. The main pathogenic bacteria of denture stomatitis is intraoral streptococcus deposited on dentures.
- b. In a patient with complete dentures since there is no teeth in the mouth, only elaborate denture cleansing is sufficient.
- c. It is effective to apply ointment after oral care in case of angular cheilosis.
- d. Because chronic recurrent oral aphthous is caused by bacterial infection, oral care is effective.
- e. In case there is gingivostomatitis, also, brushing the inflamed gums should be avoided.

Answer : e

- Summary :**
- a. The main pathogenic bacteria of denture stomatitis is Candida.
 - b. Use of a sponge brush or gargling with mouthwash is important, because there is bacterium on the oral mucosa.
 - c. Because the cause of angular cheilosis is excessive drying, to apply ointment before and after oral care is needed.
 - d. The cause of chronic recurrent oral aphthous remains unclear.
 - e. Because stimulation by toothbrush may cause pain and bleeding accompanied with gingivostomatitis, brushing gums requires adequate attention. .

Things to understand

Oral care for patients with gingivostomatitis or angular cheilosis

Keywords

gingivostomatitis, angular cheilosis

Question 8**Which is the correct management for coated tongue?**

- a. To remove fur on tongue gradually, rubbing the surface of tongue gently with toothbrush.
- b. To guide active tongue movements, chewing and speech.
- c. To let a patient with denture take it off, have soft meal and refrain from conversations.
- d. To apply antibiotics ointment on tongue.
- e. It is not necessary to remove fur on tongue by constraint, because coated tongue itself is not a disease.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 1

- Summary :**
- a. Coated tongue is stemmed from hyperplasia of filiform papilla followed by adhesion of avulsed epithelium of the oral mucosa and food residue with significant deficiency because of nasogastric tube feeding, fluid food intake and lack of the conversation. Only brushing tongue gently & repeatedly reduces fur on tongue gradually.
 - b. The reason why coated tongue occurs is as above. Accordingly with active tongue movements as in repeated chewing and speech, hyperplasia of filiform papilla decreases gradually by stimuli on the surface of tongue, and tongue may become smoother.
 - c. The reason why coated tongue occurs is as above. Accordingly, if patients have soft meal and refrain from conversations, coated tongue deteriorates. When coated tongue occurs with denture, it is appropriate to improve of denture fitting because of possibility of conformity failure.
 - d. Application of antibiotics would not be effective, because coated tongue are not caused by bacteria. Rather if use of the antimicrobial ointment is continued, it may multiply the fungi such as Candida bacteria easily and is harmful.
 - e. Though coated tongue itself is not disease, oral health is poor and many microbes accumulate there. The removal of the tongue coating may be recommended because the risk of aspiration pneumonia is increased in elderly.

Things to understand

The fur on tongue is formed when stimuli are less, and the tips of filiform papillae do not fall off sequentially and acquires many adhesions. If thick fur is confirmed, it is the evidence of insufficient mouth cleaning, and easy to produce infectious diseases such as aspiration-related pneumonia.

Keywords

coated tongue, cleaning

Question 9

Choose the INCORRECT choice explaining about wiping off the fur from the tongue surface.

- a. Wiping off the fur from the tongue results in eliminating the bacteria from the tongue surface.
- b. It is effective in cleaning the tongue if the tongue tip is held with gauze and is pulled forward during oral care.
- c. Wiping off the fur from the tongue is very essential, regardless of damage to the lingual papilla.
- d. Using a tongue brush is effective in eliminating the fur off the tongue.
- e. Elimination of fur from the tongue at regular intervals is recommended.

Answer : c

Summary :

- a. Fur on the tongue is made up of bacteria, desquamated epithelium and food debris. Thus wiping off the fur from the tongue results in eliminating the bacteria from the tongue. And this choice is not appropriate for the answer.
- b. It is effective in cleaning the tongue if the tongue tip is held with gauze, and is pulled forward during oral care. But we should be cautious not to pull out the tongue too much. It is not appropriate for the answer.
- c. We should be cautious not to damage the lingual papilla. Thus this choice is appropriate for the answer.
- d. Tongue brush is very effective in eliminating the fur from the tongue. It is easily available in the market and is cheap. It is much more effective than a toothbrush. Thus this choice is not appropriate for the answer.
- e. Elimination of fur from the tongue at regular intervals is recommended. Forcing oral care may make the patient averse to oral care. Thus this choice is not appropriate for the answer.

Things to understand

Knowledge about cleaning the tongue

Keywords

Fur on tongue, tongue brush, dry mouth

Question 10

Choose the correct combination for gingival bleeding in the elderly.

- a. Decubitus ulcer
- b. periodontal disease
- c. Candidiasis
- d. Aphthous Stomatitis
- e. gingival cancer

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary :

- a. Ill-fitting dentures can cause the formation of decubitus ulcer on the gingiva or the oral vestibule, consequently, bleeding occurs. Leaving the ulcer untreated for a long period of time can cause the formation of denture fibroma, leading to further bleeding. In patients with removal partial dentures, if dentures fall off and only the metal anchors of the dentures remain on the gingiva, the remaining metal anchors can cause damage to the oral mucosa, resulting in bleeding.
- b. The prevalence rate of periodontal diseases tends to increase with age. In patients with periodontal diseases, the gingiva can be inflamed (red and swollen); such patients experience bleeding even by eating an apple or brushing teeth.
- c. Oral mucosal candidiasis can be caused by microbial substitution due to a prolonged administration of antimicrobial agents. Oral mucosal candidiasis can also occur in the elderly administered with steroids for rheumatoid arthritis (RA). However, candidiasis itself does not cause gingival bleeding.
- d. In aphthous stomatitis, aphthae appear in groups on the oral mucosa; this is caused by exanthema virus infection. Aphthous stomatitis forms circular 2-3 cm diameter erosions causing pain and discomfort. In aphthous stomatitis, the epithelial basement membrane does not become affected; thus, bleeding rarely occurs.
- e. Gingival cancer causes the formation of necrosis on the gingival mucosa; with such gingiva, bleeding can occur easily by slight mechanical stimulations. Additionally, the contact of the denture base edge to the affected area can cause the formation of decubitus ulcer, leading to bleeding. If gingival cancer is observed alongside bleeding, its cancer stage is considered to have relatively progressed.

NB: As for the Summary d, "erosion" and "ulcer" are pathologically distinguished. In other words, in the former, erosion is a discontinuity of the skin exhibiting incomplete loss of the epidermis (the surface layer of the epithelia is damaged and the epithelial basement membrane remains); in the latter, ulcer is a discontinuity of the skin exhibiting complete loss of the epidermis and often portions of the dermis and even subcutaneous fat. Aphthous stomatitis causes the formation of vesicles (small, fluid filled blisters) in the epithelia; these vesicles eventually break and turn into erosions.

Things to understand

Gingival bleeding can be caused by multiple factors. It is essential to identify the seriousness of the diseases when treating.

Keywords

gingival bleeding, elderly

Question 11

Choose the correct combination regarding the causes of gingival bleeding in the elderly.

- a. There is/are mobile tooth/teeth in the mouth.
- b. The elderly patients are administered antihypertensive drugs.
- c. The elderly patients are administered long term steroids.
- d. There is/are an epulis/epulides in the mouth.
- e. The elderly patients are taking anticoagulants.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary :

- a. In the elderly, progression of periodontitis can often cause the loosening of teeth. Particularly, in patients with removal partial denture (RPD), remaining natural teeth can be loosened by the anchored clasp, which can cause bleeding from the edge of the loosened teeth.
- b. In the elderly, antihypertensive drugs are used to treat hypertension (high blood pressure). Patients with hypertension often experience difficulty in hemostasis. However, the administration of antihypertensive does not cause gingival bleeding.
- c. Patients who are administered long term steroids for rheumatoid arthritis (RA) or other autoimmune diseases tend to have a weak immune system as well as slow natural tissue regenerative function. However, these conditions do not necessarily cause gingival bleeding.
- d. Gingival bleeding in the elderly is mostly caused by the gingivitis evoked by the accumulation of dental plaque and/or calculus. Occasionally, the size of gingiva develops like the size of a tumor (this is called epulis), causing bleeding from the gingival margin around the epulis.
- e. Elderly patients tend to be on anticoagulants (warfarin(r), aspirin(r) etc) in order to prevent the paroxysmal attack of cerebral thrombosis and/or myocardial infarction. In such a case, bleeding from the gingiva is difficult to coagulate.

Things to understand

The causes of gingival bleeding in the elderly are largely classified into two major factors: systemic factors and local factors. As for the systemic factors, leukemia, idiopathic thrombocytopenic purpura (ITP), blood diseases such as aplastic anemia, liver diseases can become the main causes of gingival bleeding. Additionally, the administration of anticoagulant for the purpose of preventing cerebral thrombosis and myocardial infarction can also cause gingival bleeding. As for the local factors, significantly advanced periodontitis, resultant loosening of teeth due to the advanced periodontitis, epulis (plural eplides), resultant ulcer due to the stimulations of denture base on the gingiva can cause gingival bleeding.

Keywords

elderly, bleeding, gingivitis

Question 12

Choose the INCORRECT answer regarding the cause of gingival bleeding in the elderly.

- a. High prevalence rate of periodontal disease.
- b. High number of xerostomia (dry mouth) patients.
- c. High number of aspiration pneumonia patients.
- d. High number of cardiovascular disease/brain disease patients.
- e. Poor oral hygiene condition.

Answer : c

Summary :

- a. The prevalence rate of periodontal disease increases with age. Periodontal disease is signified by red and/or swollen gingiva; this indicates the existence of inflammation on the gingival tissue, causing bleeding even by slight mechanical stimulations.
- b. In the elderly, saliva production volume decreases with age; poor salivary secretion is directly linked to dry mouth in the elderly. Additionally, the elderly tend to be on a number of medications; accordingly, the side effects of such medications can cause dry mouth. As a consequence, dry mouth leads to the progression of periodontitis with resultant gingival bleeding.
- c. In the elderly patients, swallowing reflex decreases with age; low swallowing reflex can lead to pulmonary aspiration of food as well as saliva. Pathologic bacteria of pneumonia are mostly periodontal pathogens, however, they are not a direct cause of gingival bleeding.
- d. In the elderly, the prevalence rate of cardiovascular disease and brain disease is high. Patients with such diseases are commonly administered anticoagulants; accordingly, blood coagulation can be interfered by anticoagulant when bleeding occurs. For this reason, high number of patients with such diseases can be correlated with gingival bleeding.
- e. The elderly as well as people who need care tend to be unable to perform sufficient oral care (such as brushing teeth) by themselves, causing poor oral hygiene. As a consequence, bleeding can occur from the gingiva due to resultant gingivitis.

Things to understand

Periodontitis is the number one cause of gingival bleeding in the elderly. However, oral care for its prevention is not fully performed among such people.

Keywords

elderly, gingiva, gingival bleeding

Question 13

Choose the INCORRECT answer regarding the reaction to gingival bleeding during oral care.

- a. Check whether there is gingivitis or periodontitis in the mouth.
- b. Check whether there are ulcers or damage in the mouth.
- c. Apply pressure on the bleeding area with gauze and check whether the bleeding stops or not.
- d. Ask whether a patient has any individual and family medical history of hemorrhagic (bleeding) diathesis.
- e. Instruct the patient to use a hard toothbrush.

Answer : e

Summary :

- a. Inflammation is the number one cause of oral bleeding during oral care using a toothbrush; therefore, it is essential to check whether there is any inflammation on the gingiva and/or on the other periodontal tissue before oral care.
- b. In case of oral care, if there are ulcer(s) and/or erosion(s) on the gingiva, bleeding can be caused easily by little mechanical stimulation or in some cases even without any stimulation. In such cases, diagnosis of the malignancy of the ulcer(s) and/or erosion(s) becomes mandatory.
- c. There are several ways of stopping bleeding. Amongst them, application of direct pressure on the bleeding area should be performed as the first reaction to stop bleeding. Use gauze to apply pressure on the bleeding area.
- d. Consider the possibility that the patient has hemorrhagic (bleeding) diathesis typified by hemophilia. Check the patient's individual and family medical history for this. In addition to this, further medical examination may be required in order to evaluate whether the patient has cirrhosis or not.
- e. One of the causes of gingival bleeding is simply due to direct mechanical damage on gingiva. A hard toothbrush has potential to damage gingiva; therefore, a soft toothbrush should be used in the beginning of oral care.

Things to understand

It is important to identify what is causing the gingival bleeding. Primal solution to stop bleeding is to apply pressure onto the bleeding area.

Keywords

gingivitis, toothbrush, gingival injury

Question 14

Choose the correct answer regarding oral care after tooth extraction.

- a. Use analgesics until the patient stops feeling pain.
- b. Apply an ice bag to the skin around the affected area.
- c. Encourage the patient to have each meal as much as they can even soon after the extraction.
- d. Encourage the patient to gargle frequently in order to eliminate the oral discomfort.
- e. Encourage the patient to take a bath in order to stimulate the blood circulation.

Answer : c

Summary : a. Some people experience severe pain after tooth extraction. Analgesics require 30-60 minutes to achieve analgesia. Every medication has its own "Defined Daily Dose" (DDD); this should not be exceeded in any 24-hour period.

b. It is effective to cool down the extracted area in order to tranquilize the inflammation occurred due to the extraction. However excessive use of ice bag can slow down the blood circulation, causing a delay in wound healing.

c. As for the contents of meals after tooth extraction, patients should eat what they think is easier for them to eat, which result in raising blood sugar levels. Alimentation is an essential adjunctive therapy for remission of inflammation; therefore, patients should eat meals properly.

d. Frequent gargling is effective to remove discomfort in the oral cavity, however, clot formation can also be interfered, leading to postoperative bleeding. Therefore, gargling should be performed only when necessary.

e. Bathing after the tooth extraction increases blood pressure; accordingly, the wound can excessively become heated up, which stimulates blood circulation, leading to postoperative bleeding. Patients should use shower instead.

Things to understand

Understand treatments based on scientific and empirical knowledge.

Keywords

dental extraction, analgesic, dietary intake

Question 15

Choose the INAPPROPRIATE combination regarding oral care after tooth extraction.

- a. Suggest to the patient to use mouthwash soon after tooth extraction.
- b. Excessive use of cold application slows down the recovery of tooth extraction wound.
- c. As for the reaction to postoperative bleeding after tooth extraction, the first thing should be performed to stop bleeding from tooth extraction wound is to apply pressure with gauze onto the wound for 20 minutes.
- d. Avoid taking long baths after tooth extraction.
- e. In order to mitigate pain after tooth extraction, encourage the patient to take analgesics regardless of the previous administration intervals.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 2

Summary : a. After tooth extraction, using mouthwash for the purpose of cleaning the extraction area can cause the breakdown of blood clots formed on the extraction socket, leading to bleeding. For this reason, mouthwash should be avoided on the extraction day.

b. Use of cold application on the tooth extraction area can effectively prevent the formation of edema through the contraction of blood vessel. However, excessive use of this method slows down the blood circulation and hinders with tissue regeneration, causing a delay in recovery time.

c. The remaining pathological granulation tissue, the surrounding soft tissue of the extraction area, the damage of alveolar bone, and mechanical stimulations of extraction wound can be the main local factors for postoperative bleeding after tooth extraction. To stop bleeding, application of direct pressure is commonly performed; apply pressure onto the extraction area for 20 minutes.

d. After tooth extraction, patients should avoid the following activities: alcohol intake, taking long baths, and intense exercise; these lead to widening of the blood vessels of the whole body, causing the formation of edema along with pain.

e. In order to mitigate pain after tooth extraction, analgesics can be used if patients are not allergic to it. However, analgesics tend to damage gastrointestinal mucosa; therefore, at least 6-hours of intervals are necessary between each dosage.

Things to understand

Following an extraction, the patient is advised to relax the extraction wound (i.e., the patient should focus on resting the extraction wound as well as stopping bleeding) on the extraction day. From the following day, the patient should start performing mouthwashes in order to maintain the hygienic condition of the extraction area. Instruct the patient to refrain from drinking alcohol, taking long baths, and intense exercise;

Keywords

dental extraction, postoperative management

Question 16

Choose the INCORRECT combination regarding oral care after tooth extraction.

- a. In order to prevent oral bacterial growth, frequent gargling is recommended to be started from immediately after tooth extraction.
- b. After tooth extraction, brush around the extraction wound properly in order to prevent plaque accumulation.
- c. It is considered to be a normal healing process even if the patient's saliva contains blood even a few days after tooth extraction.
- d. Bleeding from the extraction wound should be stopped by the application of pressure using clean gauze.
- e. Ethanol-containing mouthwash can be irritating to the extraction wound. Povidone-iodine mouthwash should be used instead.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 1

Summary :

- a. Frequent gargling can cause the breakdown of formed blood clots, leading to slowing down of wound healing; therefore, this should be avoided.
- b. Brushing around the tooth extraction wound should be avoided; this can cause postoperative bleeding.
- c. This statement is correct.
- d. Apply direct pressure with gauze onto the extraction wound for 30 minutes. Visit a dentist if this method does not stop bleeding.
- e. This statement is correct. Ethanol-containing mouthwash should be avoided; this can be irritating to the extraction wound.

Things to understand

Understand the healing process of extraction socket as well as planning appropriate oral care after tooth extraction.

Keywords

dental extraction

Question 1

Choose the correct description of saliva.

- a. The total saliva volume production per day in adults is approximately 500 ml. Saliva plays a role in lubricating and moisturizing the oral cavity as well as killing oral bacteria.
- b. Creating food boluses as well as oral self-cleansing function are not required for patients unable to ingest food through the mouth; therefore, oral care is not necessary for such patients.
- c. Patients with dysphagia may suffer aspiration in case the salivary production is excessive; therefore, it is important to maintain the patient's mouth dry in order to prevent pulmonary aspiration.
- d. Saliva consists of lysozyme, peroxidase, lactoferrin, and other enzymes. These enzymes play a role in weakening oral bacteria activity as well as killing oral bacteria.
- e. Saliva is only secreted from the three major glands: parotid gland, submandibular gland, and sublingual gland; the production of saliva is stimulated both by the sympathetic nervous system and the parasympathetic nervous system.

Answer : d

- Summary :**
- a. The estimation of the total saliva volume production per day in adults is 1.0-1.5 liters. Saliva has antimicrobial function, mucosal protective function, pH buffering action, and helps in tooth re-calcification, digestion and self-cleansing action in the mouth.
 - b. In patients unable to ingest food through the mouth, oral self-cleansing deteriorates and a coated tongue also becomes prominent as well as halitosis (bad breath) occurs. Leaving these symptoms untreated can cause poor oral hygiene, which can lead to aspiration pneumonia; therefore, it is essential to perform continuous oral care.
 - c. Saliva contributes to swallowing-enhancement. In digestion, it is necessary to create a food bolus (a mass of food which has been chewed in order to swallow food); saliva plays an important role in this process.
 - d. Saliva contains components such as lysozyme, peroxidase, lactoferrin, and other enzymes which play a role in weakening oral bacteria activity as well as killing oral bacteria.
 - e. In the oral cavity, there are pairs of major salivary glands, namely parotid gland, submandibular gland, and sublingual gland, as well as other minor glands located throughout the oral cavity within the submucosa of the oral tissues of the buccal, labial, and lingual mucosa, the soft palate, the lateral parts of the hard palate, and the floor of the mouth or between muscle fibers of the tongue. The production of saliva is controlled by both sympathetic and parasympathetic arms of the autonomic nervous system.

Things to understand

Saliva plays a role in the maintenance of oral hygiene and lubrication as well as breaking down of food into a digestible form.

Keywords

saliva, dysphagia, xerostomia (dry mouth)

Question 2

Choose the correct combination for the descriptions of saliva.

- a. The three major salivary glands are the parotid gland, submandibular gland, and palatine gland.
- b. The functions of saliva are digestion, bacterial protection, endocrine function, and lubrication of oral mucosa.
- c. The organic components of saliva include enzymes, carbohydrates, and lipids.
- d. The total saliva volume production per day in adults is approximately from 1.0 to 1.5 L.
- e. The pH of saliva varies from 4.0 to 4.5.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

- Summary :**
- a. Saliva is produced through the three major salivary glands: parotid gland, submandibular gland, and sublingual gland as well as the minor salivary glands located throughout the oral cavity within the submucosa of the oral mucosa in the tissue of the buccal, labial, and lingual mucosa, the soft palate, the lateral parts of the hard palate, and the floor of the mouth or between muscle fibers of the tongue; therefore, oral cavity is always moistened.
 - b. As for the physiological actions of saliva, there are digestive functions to break down starch, endocrine effect of parotin secreted from the parotid gland and submandibular gland, antimicrobial functions due to antibody secretion, and mucosal protective functions due to salivary mucins.
 - c. The inorganic components of saliva are Na⁺, K⁺, Ca²⁺, P, HCO₃⁻, etc. The organic components of saliva are enzymes, carbohydrates and lipids.
 - d. The total saliva volume production per day in adults is approximately from 1.0 to 1.5L.
 - e. Although the pH of saliva varies from 5.5 to 8.0, carbon dioxide is continuously released into the air through the dissociation of H₂CO₃. As a result of this, saliva is slightly alkaline.

Things to understand

Saliva is a watery substance secreted by the three major salivary glands, namely parotid gland, submandibular gland, sublingual gland, and other minor salivary glands. Saliva is secreted throughout the oral cavity and its pH is slightly alkaline. Human saliva consists of 95% water, 5% of organic components, i.e. various enzymes, such as amylase and ptyalin which hydrolyze polysaccharide, and mucopolysaccharide which moisten hard foods as well as the oral mucosal surface; this helps in deglutition of food as well as speech. The amount of saliva which is produced in a healthy person at rest is considered to be approximately 0.4 ml per hour. In humans, the submandibular gland contributes around 70% of secretion, while the parotid gland secretes about 25% and the rest 5% are secreted from the sublingual gland and the other minor salivary glands.

Keywords

salivary gland, components of saliva, secretion volume

Question 3

Choose the correct combination regarding the components of saliva.

- a. amylase
- b. maltase
- c. pepsin
- d. lipase
- e. lysozyme

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary : a. Amylase is a digestive enzyme in saliva which catalyzes the hydrolysis of starch into dextrin and maltose.
b. Maltase (alpha-glucosidase) is a digestive enzyme in saliva which catalyzes the hydrolysis of maltose into two glucose molecules.
c. Pepsin is a digestive enzyme in the stomach.
d. Lipase is a digestive enzyme which catalyzes the hydrolysis of fats (lipids) into fatty acid and glycerol.
e. Lysozyme has antimicrobial function to attack harmful bacteria that cause halitosis (bad breath).

Things to understand

Understand the components of saliva.

Keywords

saliva, components of saliva

Question 4

Choose the INCORRECT answer regarding prevention of dryness of oral cavity and lips.

- a. Humidify room air sufficiently.
- b. Patients should take food slowly to stimulate salivary secretion.
- c. Spray artificial saliva in the oral cavity.
- d. Patient should take double the amount of the recommended daily water intake.
- e. Patient should hold cold water or ice cube in the mouth for several minutes.

Answer : d

Summary :

- a. Staying in a dry room causes dry mouth and lips. Humidify the room air as appropriate in order to prevent dry mouth and lips.
- b. Low salivary secretion leads to dry mouth and lips. Slow mastication (chewing) of food can stimulate salivary secretion. Eating sour foods such as Japanese salt plum (umeboshi), lemon and chewing gum are helpful in stimulating salivary secretion.
- c. In case salivary secretion volume decreases and is not recovered by mechanical stimulations, it is necessary to supply a replacement solution. Artificial saliva is an effective solution as it has viscosity. Gargling using a specific gargle liquid to moisturize the oral cavity is helpful; however, it is not as effective as artificial saliva.
- d. It is vital for humans to drink the recommended amount of water daily, however, excessive fluid intake can be harmful to the heart and kidney functions. If a patient is in a condition where excessive water is lost from the body as in fever, the patient needs to discuss with the doctor about the recommended fluid intake.
- e. Holding cold water or ice cube in the mouth can reduce the temperature in the mouth, resulting in prevention of dry mouth. This method is effective when a patient has burning sensation in the mouth.

Things to understand

In order to prevent dry mouth and lips, the following three methods can be effective: 1-Prevent the loss of water from the oral cavity and mucosa. 2-Stimulate the secretion of saliva. 3-Supply replacement liquid from outside. Understand each treatment is classified into which method stated above. Ensure that there is a recommended daily fluid intake and excessive fluid intake can be harmful to the heart and kidney.

Keywords

xerostomia (dry mouth), artificial saliva, salivary secretion volume

Question 5

Choose the INCORRECT answer regarding solution for removal of firmly stuck phlegm on the palate.

- a. Suggest to the patient to perform gargling frequently.
- b. Instruct the patient to use a mask when sleeping.
- c. If phlegm is firmly stuck onto the palate, apply ointment containing a protease inhibitor onto the palate, and fit denture on the top afterwards.
- d. Apply corticosteroid ointment onto the palate.
- e. Gently wipe off the phlegm repeatedly using a finger with rolled up wet gauze.

Answer : d

Summary :

- a. Repeated gargling maintains the oral moisture, which can be effective to remove the stuck phlegm. Repeated gargling can also be effective to activate the reflex and immunocompetence of the pharyngeal area, leading to prevention of pulmonary aspiration as well as upper respiratory tract infection (URI or URTI).
- b. The elderly's mouth tends to open regularly due to the weak masticatory muscles. This can cause dry mouth and phlegm to lodge in the throat. Wearing a mask is helpful to prevent dry mouth and pathogens from entering into the body.
- c. To remove phlegm, firstly, apply protease-containing ointment to phlegm stuck on the palate; secondarily, fit dentures on the top, in this way, phlegm is softened and easily removed. Additionally, active mastication while wearing dentures is helpful to prevent new phlegm from sticking on the palate.
- d. Application of corticosteroid ointment onto the palate is not effective to soften the stuck phlegm. Instead, frequent application of corticosteroid ointment is doomed to cause candidiasis; therefore, it is harmful to apply corticosteroid ointment on the palate.
- e. This is an easiest way of removing phlegm stuck on the palate without damaging the oral mucosa. However, this may not be sufficient if phlegm is very firmly stuck.

Things to understand

Phlegm sticking on the oral mucosa indicates that the oral cavity has become dry for some reason. It is essential to identify the cause of dry mouth; whether it is due to the evaporation from the open mouth or due to Sjögren's syndrome, chronic parotitis, or other diseases.

Keywords

phlegm, xerostomia (dry mouth), elderly

Question 6

Choose the INCORRECT description for artificial saliva.

- a. Artificial saliva is effective to mitigate oral discomfort such as oral dryness and stickiness caused by the low salivary secretion.
- b. Artificial saliva is effective to mitigate the following symptoms: burning mouth syndrome (BMS, also termed glossodynia), oral mucosal pain, frequent occurrence of denture ulcer, aphthous stomatitis, oral mucosal ulcer, dysphagia, and dysgeusia (taste disorder).
- c. Generally, artificial saliva is only applied for patients with salivary secretion problems. Artificial saliva is not applied for patients with normal salivary functions.
- d. As for the effect of artificial saliva (e.g. Saliveht(r)), it is created based on the salivary components of a healthy person; therefore, it can be expected to add moisturizing effect after several uses.
- e. Humectant mouthwash (Kinu-Sui(r), Oral Wet(r)) contains sodium hyaluronate; thus, its moisturizing effect functions like artificial saliva.

Answer : d

- Summary :**
- a. Artificial saliva (Saliveht(r)) is not practical to moisturize the oral cavity, however, it is effective to mitigate oral discomfort such as oral dryness and stickiness by spraying its components which are similar to natural salivas into the mouth.
 - b. It is essential to moisturize the oral mucosa in order to maintain normal mastication and deglutition. In other words, in case of dry mouth and/or low salivary secretion seen in a patient, use of artificial saliva and/or mouthwash is recommended as palliative treatment for dysgeusia and dysphagia.
 - c. Artificial saliva should only be used as palliative treatment.
 - d. Generally, artificial saliva is created based on the salivary components of a healthy person, meaning it is not effective for severe dry mouth; its effect is almost similar to water, therefore, artificial saliva is not effective to cure dry mouth.
 - e. Sodium hyaluronate is a component of connective tissue found in skin, eyeball, and joint; it is a vital substance for body parts requiring moisturizing and resilience.

Things to understand

Use artificial saliva or mouthwash as appropriate according to the condition of each patient.

Keywords

artificial saliva, mouthwash, dysphagia

Question 7

Choose the correct answer regarding the use of artificial saliva for patients with dry mouth.

- a. Artificial saliva is not appropriate for saliva replacement therapy.
- b. Artificial saliva is effective to prevent oral mucosal atrophy.
- c. Artificial saliva has a function to maintain moisture in the oral cavity.
- d. Applying artificial saliva before a meal does not help food deglutition (swallowing).
- e. It is more effective when applying artificial saliva only on the upper surface of the tongue.

Answer : b

- Summary :**
- a. There is a commonly used artificial saliva product called Saliveht(r). Artificial saliva is effective as a replacement therapy; it is covered by insurance. Therefore, this description is incorrect.
 - b. Application of artificial saliva is effective in continuously moistening the oral cavity as well as preventing oral mucosal atrophy. Therefore, this statement is correct.
 - c. Artificial saliva can moisten the oral cavity temporarily even with a small amount; this is effective for dry mouth. Therefore, this description is incorrect.
 - d. In patients with difficulty in swallowing due to low salivary secretion; it is effective to apply artificial saliva in the mouth before a meal; the added moisture is helpful for patients when eating. Therefore, this description is incorrect.
 - e. Artificial saliva should be applied not only on the upper surface of the tongue; it should also be applied on the lower surface of the tongue as well as on the buccal mucosa (the inside lining of the cheeks and part of the lining mucosa). In this way, the added moisture lasts longer. Therefore, this description is incorrect.

Things to understand

Understand the uses of artificial saliva.

Keywords

xerostomia (dry mouth), saliva, artificial saliva

Question 8

Choose the INCORRECT answer regarding oral care for dry mouth.

- a. Drink a sufficient amount of fluid.
- b. Spray artificial saliva into the mouth.
- c. Leave dentures in the mouth through the night.
- d. Maintain oral hygiene properly.
- e. Indoor air conditioning (i.e., use of humidifier, ventilation, adjustment of the room temperature and humidity).

Answer : c

Summary :

- a. In case of severe dry mouth, chunk of bacteria and dried saliva are stuck onto the oral mucosa and tongue; these cannot easily be washed off. Therefore, it is important to drink a sufficient amount of fluid to prevent dry mouth.
- b. Artificial saliva is applied to cure patients with impaired oral functions (i.e. mastication, deglutition, and speech) due to dry mouth. By applying artificial saliva in the oral cavity, the oral cavity is moistened temporarily, resulting in improving oral functions.
- c. Leaving dentures in the mouth through the night can cause pressure on the oral mucosa, which can lead to bacterial reproduction on the accumulated dirt and debris between the mucosa and dentures. As a consequence, oral health problems such as inflammation of the oral mucosa, bleeding, halitosis (bad breath), dysgeusia (taste disorder), and progression of dental caries are likely to occur.
- d. In patients with dry mouth, oral hygiene tends to become poor due to the deteriorated oral self-cleansing function; therefore, it is essential to perform oral care properly.
- e. Dry room air causes dry mouth; therefore, it is important to maintain the room humidity as well as adjusting the room temperature.

Question 9

Choose the INCORRECT answer regarding the cause of dry mouth.

- a. diabetes mellitus
- b. chronic renal failure
- c. cardiac dysrhythmia (arrhythmia)
- d. cirrhosis
- e. pneumonia

Answer : c

Summary : a. When high blood sugar (hyperglycemia) occurs due to diabetes mellitus, the renal tubule can become overwhelmed and begins to excrete glucose in urine. This causes polyuria due to osmotic diuresis, resulting in dry mouth.
b. Chronic renal failure can be caused by all types of primary and secondary renal diseases. Chronic renal failure causes impairment of urine-concentrating ability, which leads to polyuria with resultant dehydration, leading to dry mouth.
c. Cardiac dysrhythmia (arrhythmia) is a disease with irregular heartbeats (its speed is faster or slower than normal), meaning this disease does not affect the change in the amount of body water; therefore, cardiac dysrhythmia is not a cause of dry mouth.
d. The liver stores glucose (in the form of glycogen). Patients with cirrhosis or other liver diseases become unable to adjust blood sugar levels. For this reason, polyuria and dry mouth occur in the same principle as diabetes mellitus.
e. Pneumonia and inflammatory condition of other respiratory systems lead to raised body temperature. This causes the loss of body water through breathing, resulting in dry mouth.

Things to understand

Dry mouth can occur due to the loss of body water; body water is lost via oral mucosa, skin, urine, and stool; understand body water is lost through perspiration due to fever as well as diseases causing transpiration, polyuria, and diarrhea. Particularly, polyuria can be caused by multiple diseases; diabetes mellitus and renal diseases are the most common amongst them.

Keywords

xerostomia (dry mouth), underlying disease

Question 10

Choose the INCORRECT combination regarding oral care for chapped lips.

- a. Keep lips at rest.
- b. Prevent lips from drying.
- c. Maintain lip hygiene.
- d. Remove all the lip crusts.
- e. Massage lips.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 5

Summary :

- a. When lips are dry and easy to become chapped, stretching, licking, and touching of the lips can become mechanical stimulations. It is important to maintain lips at rest before identifying the cause of chapped lips.
- b. Dry lips can cause the loss of flexibility of the labial mucosa, which can lead to chapped lips. In order to prevent dryness of lips, it is effective to apply wet gauze to hydrate lips, to use lip balm, and/or to humidify the air in the room.
- c. When lips are dry and easy to become chapped, infection through lip cracks can worsen the symptoms of dryness. In such case, apply pressure to stop bleeding first and rinse lips using saline or gargle liquid to maintain lip hygiene.
- d. Removing all the crusts emerged from lip cracks can cause further bleeding from the cracks. Use scissors to resect only the crust parts; they should not be forcefully peeled off.
- e. When lips are dry and easy to become chapped, massaging lips can worsen the condition of lips; therefore, it is important to maintain lips at rest.

Things to understand

Weakened labial mucosa and dry mouth can cause chapped lips. It is important to identify the cause in order to treat chapped lips, however, as for the palliative treatment, maintaining lips at rest, maintaining lip hygiene, and preventing lips from drying can be basic treatments. Forcefully removing the crusts of lips as well as massaging lips can become unnecessary stimulations on the labial mucosa; therefore, it is counterproductive.

Keywords

lips, oral mucosa

Question 1

Choose the correct combination regarding the possible side effects and functional disorders causing dysphagia as a result of radiation therapy for head and neck cancer.

- a. Recurrent laryngeal nerve palsy
- b. Salivation disorder
- c. Stomatitis (canker sore)
- d. Skin scar contracture
- e. Velopharyngeal insufficiency

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

Summary :

- a. The recurrent laryngeal nerve (RLN) is a branch of the vagus nerve. The recurrent laryngeal nerves give off branches to the heart, trachea, and esophagus. Radiation therapy does not directly cause recurrent laryngeal nerve palsy, however, it can appear as a side effect of surgery on a head and neck region such as pharynx or esophagus as well as on the chest region.
- b. Radiation can cause damage to salivary gland tissue with resultant decreased salivary secretion volume, leading to dry mouth; as a consequence, patients may encounter difficulty in food bolus formation and deglutition.
- c. Radiation can cause damage to the basement membrane of oral mucosa with resultant multiple stomatitis. In such a case, patients experience pain on stimulations due to cold water and solid food as well as encountering difficulty in eating and deglutition.
- d. In radiation therapy, radiation can cause damage to skin and muscle tissue in the irradiated area with resultant scar contractures. Skin scar contracture can cause the restriction of skin and muscle movement related to deglutition, e.g., trismus.
- e. Velopharyngeal inadequacy (VPI) can be observed alongside cleft palate and maxillary osteotomy; this causes dysphagia. However, radiation therapy does not cause velopharyngeal inadequacy.

Things to understand

Understand the relationship between dysphagia and radiation therapy for head and neck.

Keywords

dysphagia

Question 2

Choose the INCORRECT combination regarding dysphagia.

- a. The risk of pulmonary aspiration increases by dysphagia.
- b. Patients with dysphagia tend to have other disorders concurrently.
- c. Stop feeding a patient with dysphagia.
- d. The primary disease of functional disorder is largely due to cerebrovascular disorder.
- e. Surgery is performed for the patient with dysphagia.

Answer : c

Summary :

- a. The risk of pulmonary aspiration is increased by possibly the following symptoms due to dysphagia: intraoral food retention failure, intraoral residues, swallowing reflex failure, elevation and closure failure of larynx, residues in the epiglottic vallecula and pyriform sinus, esophageal entrance opening failure, etc.
- b. Patients with dysphagia tend to have other disorder(s) concurrently; therefore, caregivers need to pay attention to such disorder(s).
- c. Patients with dysphagia may be able to ingest nutrition through their mouth if they lie/sit in an appropriate posture which is suitable for them to eat; therefore, it is unnecessary to stop feeding them.
- d. Cerebrovascular disorder is by far the most common primary cause of functional disorder due to dysphagia. The following diseases can also be a primary cause for dysphagia: Traumatic brain injury, neurological disorder, muscular disease, neuromuscular junction disease, head and neck neoplasm. Apart from these, aging can also cause dysphagia.
- e. As for surgical therapy for dysphagia, there are cricopharyngeal myotomy, laryngeal elevation surgery, infrahyoid myotomy, laryngectomy, laryngotracheal separation surgery (LTS), etc.

Keywords

dysphagia

Question 3

A patient has undergone surgery to remove oral cancer reconstruction of oral tissues using flaps. Choose the INCORRECT combination regarding oral care for such a patient after three days from surgery.

- a. In case tracheotomy is performed on the patient and a tracheal tube is inserted into the patient's tracheostomy stoma, raise the tracheal cuff pressure and perform oral care alongside the raised head of the bed.
- b. The remaining teeth should be cleaned with a soft toothbrush.
- c. Dental scaling should be done by the dentist with the patient in a supine position.
- d. Clean the suture area with a toothbrush.
- e. Clean the unaffected side using sponge brush or gauze immersed in saline.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 4

Summary :

- a. Tracheotomy is commonly performed after oral cancer surgery. Even when a tracheal tube is inserted into the patient's tracheostomy stoma, in order to prevent dysphagia, adjust the cuff pressure to high and raise the head of the bed during oral care.
- b. Even after oral surgery, it is important to clean the remaining teeth. There are many oral secreted materials, especially, the scabs of the flaps can be attached to the wall of the oral cavity. A soft toothbrush should be used in order not to damage the surgical part as the oral mucosa can be weakened.
- c. The patient had surgery for the oral cavity, indicating the patient is likely to experience dysphagia in this state; therefore, performing dental scaling in the supine position is dangerous. If possible, dental scaling and other oral care should be performed prior to oral surgery.
- d. After surgery, it is essential to relax the surgical wound. Brushing the suture area can cause the wound to open; thus, it is important to clean the area carefully using a pledget without harming the surgical suture.
- e. Perform extra gentle oral care after surgery; dirt and debris can accumulate on the affected area; therefore, oral care should be started relatively soon after the surgery. As for oral care on the flap, however, there is no fixed opinion from when oral care should be started; hence, perform oral care after permission is granted from the attending physician.

Things to understand

Appropriate oral care methods for patients with dysphagia after oral cancer surgery.

Keywords

oral cancer

Question 4

Choose the INCORRECT answer regarding oral care for patients with dysphagia.

- a. Ensure that the unaffected side of the patient is facing down when oral care is performed in the supine position.
- b. Oral care is not necessary for patients receiving tube feeding.
- c. Patients with dysphagia tend to accumulate saliva in the oral cavity.
- d. With good oral care, aspiration pneumonia can be prevented.
- e. Performing oral care using a suction machine.

Answer : b

- Summary :**
- a. The unaffected side should face down when performing oral care for patients with dysphagia in the supine position; in this way, it is easier to wipe or suck away the accumulated saliva in the oral cavity as well as reducing the risk of pulmonary aspiration.
 - b. Even if patients are receiving tube feeding and not receiving oral feedings; intraoral dirt and debris such as exfoliated epithelial cells, saliva, and phlegm still accumulate and lodge onto the walls of the oral cavity, which creates a poor oral hygiene condition. Therefore, oral care should be performed even for such patients.
 - c. Patients with dysphagia struggle to swallow their own saliva; consequently, they tend to accumulate saliva in the oral cavity. Due to the accumulated saliva in the oral cavity, the salivary production volume and flow of saliva seem to have increased superficially.
 - d. Performing good oral care has the following benefits: removal of infection source, countermeasure for infection route, and improvement of immunocompetence. As a result, aspiration pneumonia can be prevented in about 30-40% of the cases.
 - e. In performing oral care for patients with dysphagia, saliva prominently accumulates in the oral cavity; therefore, it is essential to prepare a gauze (to wipe off extra saliva) and a suction machine in order to prevent pulmonary aspiration.

Keywords

dysphagia

Question 5

Choose the INCORRECT answer regarding the cause of dysphagia.

- a. Cerebrovascular disease
- b. Intellectual disability (mental retardation)
- c. Oral/pharyngeal tumor
- d. Neurological/muscular disorder
- e. Angina pectoris

Answer : e

Summary :

- a. Primary causes of dysphagia are classified into three disorder types: ones causing functional disorders, ones classified as developmental disorders, and ones causing structural changes. As for primary diseases causing functional disorders, there are cerebrovascular diseases, brain tumors, traumatic brain injury, etc.
- b. Developmental disorders among primary causes include intellectual disability, especially dysphagia can be seen in patients with Down's syndrome (DS). Additionally, motor retardation and somatoform disorders can also cause dysphagia.
- c. As for structural disorders, tumor and/or injury of oral cavity/pharynx and diseases associated with structural changes of gastrointestinal tracts such as tonsillitis, esophagitis, esophageal stricture, and esophageal diverticulum can cause dysphagia.
- d. Neurological/muscular disorder is one of the functional disorders causing dysphagia. Amyotrophic lateral sclerosis (ALS), spinocerebellar ataxia, Parkinson's disease (PD) and muscular dystrophy (MD) are considered to be the causes.
- e. As for patients with angina pectoris, suspect the possibility of patients having cerebrovascular disease or other severe diseases. However, angina pectoris does not directly cause dysphagia.

Things to understand

Understand what types of disorders cause dysphagia.

Keywords

Dysphagia

Question 6

Which ones of these pathogenic bacteria have the highest detection rate in aspiration pneumonia. Choose the correct combination.

- a. Peptostreptococcus
- b. Prevotella
- c. Methicillin-resistant Staphylococcus aureus (MRSA)
- d. Pseudomonas aeruginosa
- e. Fusobacterium

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

- Summary :**
- a. Peptostreptococcus is a genus of anaerobic bacteria found in the oral cavity. As for pathogenic bacteria of aspiration pneumonia; Streptococcus milleri group, Peptostreptococcus, Prevotella, and Fusobacterium are frequently detected. Additionally, these bacteria are likely to be detected as pathogenic bacteria of community-acquired pneumonia (CAP).
 - b. Prevotella is a genus of anaerobic bacteria found in the oral cavity.
 - c. Methicillin-resistant Staphylococcus aureus (MRSA) is detected as the pathogenic bacteria of aspiration pneumonia. However, MRSA is aerobic bacteria and its detection rate is lower than anaerobic bacteria.
 - d. Pseudomonas aeruginosa is detected as a pathogenic bacteria of aspiration pneumonia. However, Pseudomonas aeruginosa is aerobic bacteria and its detection rate is lower than anaerobic bacteria.
 - e. Fusobacterium is a genus of anaerobic bacteria found in the oral cavity.

Things to understand

Aspiration pneumonia is primarily caused by anaerobic indigenous oral bacteria.

Almost all the bacteria in the oral cavity are anaerobic bacteria; the number of aerobic bacteria in the oral cavity is only 1-10% of the total number of anaerobic bacteria.

Keywords

aspiration pneumonia

Question 7

Choose the INCORRECT description for aspiration pneumonia.

- a. Oral care is effective for preventing aspiration pneumonia.
- b. There are two types of pulmonary aspiration: manifest aspiration and silent aspiration.
- c. Decreased cough reflex may become a risk factor for the onset of aspiration pneumonia.
- d. There is almost no relevance between patient's fever and aspiration pneumonia.
- e. Decreased salivary secretion volume may become a risk factor for the onset of aspiration pneumonia.

Answer : d

Summary :

- a. Performing appropriate oral care can reduce oral indigenous bacteria. Additionally, maintaining and improving the oral functions can reduce the risk of pulmonary aspiration, resulting in prevention of aspiration pneumonia.
- b. Pulmonary aspiration, which may have a risk of conveying oral bacteria to the lower respiratory tract, can be broadly divided into two types: manifest aspiration and silent aspiration.
- c. Decreased cough reflex sensitivity can cause both manifest and silent aspiration.
- d. Aspiration pneumonia may be suspected if a patient has a fever; understand the patterns of the patient's temperature changes before oral care. Additionally, inappropriate oral care can occasionally cause fever; therefore, fever after oral care should be heeded.
- e. Decreased salivary secretion volume accordingly reduces self-cleansing function in the oral cavity, leading to a risk of onset of aspiration pneumonia.

Things to understand

Although it is important to perform oral care in order to prevent aspiration pneumonia, inappropriate oral care can cause intraoral dirt and debris to flow inside and worsen pneumonia. For this reason, oral care needs to be performed with extra care. As for performing oral care, it is essential to understand patient's consciousness level, evaluation of patient's swallowing function, patient's patterns of temperature changes. Particularly, patients with reduced cough reflex may have silent pneumonia.

Keywords

aspiration pneumonia, oral care, cough reflex

Question 8

Choose the correct answer regarding points to keep in mind in order to treat dysphagia.

- a. Dysphagia can only be treated in a special institution.
- b. Maintaining the masticatory (chewing) function is important even if a patient is unable to ingest nutrition through the mouth.
- c. Severe dysphagia can only be treated by surgery.
- d. In a patient who has undergone tracheotomy; there is nothing to worry about dysphagia.
- e. Dysphagia can cause a patient to contract pneumonia.

Answer : b

Summary :

- a. Trainings for dysphagia are classified into two types: direct trainings and indirect trainings. According to the symptoms, dysphagia can be treated at home and/or a simple facility; it is not only treated in a special institution.
- b. Even if patients are unable to ingest nutrition through the mouth, maintaining masticatory function through treatment of dental caries and adjustment of dentures in order to prevent the deterioration of masticatory and perioral muscles is an important factor in swallowing rehabilitation.
- c. Surgical therapy (see p. 215) can be considered for patients with severe dysphagia. However, surgery cannot fully cure dysphagia, hence; it is essential to perform adequate rehabilitation for dysphagia afterwards.
- d. It is essential to heed dysphagia even if tracheotomy is performed on a patient; accumulated dirt and debris on the cuff may flow into the lungs, causing aspiration pneumonia.
- e. Not all eating disorders/dysphagia lead to pulmonary aspiration; the characteristics and amount of swallowed materials as well as the patient's immunocompetence influence the onset of aspiration pneumonia.

Keywords

Dysphagia

Question 9

Choose the INCORRECT answer regarding oral care for patients with dysphagia.

- a. Lay the paralyzed side of the hemiplegia patient's body facing down in a lateral position, and perform oral care.
- b. Use a suction machine to suck away intraoral dirt and debris during oral care.
- c. Massage the patient's lips and cheeks during oral care.
- d. Take off the dentures and perform oral care.
- e. Ask the patient to rinse the mouth by tilting the head forward.

Answer : a

- Summary :**
- a. When laying a hemiplegia patient in the lateral position, the paralyzed side of the body needs to be facing up. In this way, salivary secretion is naturally stimulated as well as it is easy to suck away saliva, which results in reducing the risk of pulmonary aspiration as well as oral contamination.
 - b. In case performing oral care for patients with dysphagia, use a suction machine (if there is any available) in order to prevent pulmonary aspiration during oral care. Use a sponge or gauze instead if there is no suction machine available; squeeze out the saliva from the sponge or gauze frequently during oral care.
 - c. Massaging the patient's lips and cheeks during oral care can stimulate salivary production, allowing oral care to be performed in a reasonably moist condition. Additionally, this is effective as an indirect training for dysphagia.
 - d. Dentures should be removed during oral care, especially the elderly or patients with paralysis tend to accumulate dirt and debris on the dentures; therefore, dentures need to be removed when cleaning.
 - e. Gargling with tilting the head backward can cause pulmonary aspiration; instruct the patient only to rinse the mouth with tilting the head forward.

Things to understand

What needs to be prepared in order to prevent pulmonary aspiration during oral care.

Keywords

Dysphagia

Question 10

Choose the correct answer regarding the important points to know while performing oral care for patients with dysphagia.

- a. A patient's head needs to be tilted backward during oral care.
- b. Gargling can cause pulmonary aspiration; therefore, it should not be performed.
- c. Brushing should be performed only on the teeth.
- d. Allow a patient to clean his/her own mouth.
- e. Oral care is not necessary for patients receiving parenteral feeding.

Answer : d

Summary :

- a. Patients with dysphagia generally experience pulmonary aspiration when their head is tilted backward; this pulmonary aspiration is caused by the excessive flow of oral material (saliva, dirt and debris, etc) to the pharynx. Instruct them to tilt their head forward, or to direct his/her face to the unaffected side during oral care.
- b. Gargling is effective in order to remove food residues. In case of coughing, tilt the head forward and use a syringe for cleaning the oral cavity.
- c. In oral care, brushing should be performed not only on the teeth; but the entire oral cavity, such as on the gingiva, tongue, etc. Use appropriate brushes for each part.
- d. It can be a good practice if a patient can perform oral care themselves by looking in a mirror. Performing self-oral care is essential to support patient's motivation for independent oral care.
- e. Patients with dysphagia may be receiving parenteral ingestion such as intravenous hyperalimentation (IVH) or tube feeding. However, such patients are unable to swallow saliva, indicating that oral hygiene condition tends to become poor due to reduced salivary secretion; therefore, oral care is essential for such patients.

Things to understand

In dysphagia patients, the oral cavity tends to become poorly hygienic even if they do not orally ingest nutrition. Performing oral care before and after each meal can reduce oral bacteria; the reduction of oral bacteria can prevent both dental and periodontal diseases as well as aspiration pneumonia.

Keywords

dysphagia, oral care

Question 11

Choose the INCORRECT answer regarding the diet for patients with dysphagia.

- a. Dysphagia patients should eat a meal in a lively environment, i.e., an environment where TV is turned on, people are chatting, etc.
- b. When a dysphagia patient eats a meal, the head of the bed should be raised up to the angle of 30 degrees while tilting the head of the patient slightly forward.
- c. When a patient has hemiplegia, ensure that the paralyzed side faces upward.
- d. The food amount per bite should be 3-8 cc using a small flat spoon.
- e. Patients should spend between 30 and 45 minutes time on eating a meal.

Answer : a

- Summary :**
- a. Patients with dysphagia should eat a meal in a calm and quiet environment. Such patients are likely to lose their concentration on eating in a noisy environment, causing pulmonary aspiration. Patients who are easily distracted should turn off the TV or use a curtain partition while eating.
 - b. Patients can ingest food by raising the head of the bed at the angle of 30 degrees; with the angled bed, food is smoothly conveyed to the pharynx due to gravity. Bending the neck forward alongside attaching the chin to the lower neck creates an angle difference between pharynx and trachea, which is helpful to prevent pulmonary aspiration.
 - c. The unaffected side needs to be lower than the paralyzed side in order for food bolus to smoothly pass through to the stomach. To achieve this, place a pillow underneath the shoulder on the paralyzed side; as a result, there will be a difference in the heights of the two sides, i.e., the paralyzed side is elevated and the unaffected side becomes lower accordingly. In hemiplegia patients, food tends to become lodged at the pyriform sinus on the paralyzed side; tilting the neck to the paralyzed side can create a space on the unaffected side, which can help swallowing food.
 - d. A small flat spoon can be useful to place food on the inner side of the tongue as well as it is easily flipped in the mouth. If the amount per bite is excessive, patients experience pulmonary aspiration; conversely, if the amount per bite is too little, swallowing reflex may hardly occur among patients with low conscious level as well as with dementia.
 - e. In patients with dysphagia, if eating time becomes too long, patients are

more likely to experience pulmonary aspiration due to the fatigue from eating as well as the collapsed posture. Caregivers need to ensure that whether patient's pharynx is moving, a patient is coughing/choking, or is there any food residue in the mouth.

Things to understand

Safe assisted feeding methods for dysphagia patients and justifications of why such methods are safe.

Keywords

dysphagia

Question 12

Choose the correct combination regarding the diet for patients with dysphagia.

- a. Include the patient's favorite foods in the menu.
- b. Use a thickening agent to help the patient's food ingestion.
- c. If a patient has paralysis, lay the patient in the slightly tilted lateral position (i.e. the patient is almost in the supine position but slightly tilted towards one side); ensure that the paralyzed side is facing downward.
- d. After a meal, lay the patient in the supine position in order not to pressurize the abdomen.
- e. Patients should spend 30 minutes to eat a meal.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary : a. Some types of foods are difficult for dysphagia patients to swallow; such foods can demotivate patients from eating, resulting in undernutrition. Include the patient's favorite foods in order to improve patient's motivation for eating.

b. In patients with dysphagia (i.e., difficulty in conveying food from the oral cavity to the pharynx, from the pharynx to the esophagus), fluids/watery foods entered to the mouth tend to reach the pharynx too quickly, causing

pulmonary aspiration. By applying a thickening agent, the thickened foods slowly reach the pharynx; thus, patients are able to have a better sense of swallowing, which reduces the risk of pulmonary aspiration.

- c. In patients with hemiplegia, if the paralyzed side of the body is facing downward, food entering in the mouth is accumulated in the paralyzed side due to gravity, meaning patients are swallowing through the paralyzed side of the larynx, which significantly increases the risk of pulmonary aspiration. In order to prevent pulmonary aspiration, the paralyzed side must be slightly above compared to the unaffected side; using the force of gravity, taking this posture allows patients to swallow food easily.
- d. If patients with dysphagia lie down soon after a meal, patients may encounter pulmonary aspiration due to the food residues in the pharynx or the food flowed back from the stomach. In order to prevent pulmonary aspiration, patients should be relaxed (in a half sitting position); ensure that the abdominal part is not pressurized for a few hours after each meal.
- e. Patients with dysphagia tend to feel tired from eating. In order to maintain their motivation for eating, serve their favorite foods first and when they start becoming tired, serve easily ingestible foods. Ensure that eating is finished in around 30 minutes.

Things to understand

In case of helping to feed patients with dysphagia, the following points need to be taken care of to prevent pulmonary aspiration: the contents of a meal, the texture of food, the posture during a meal, and the time spent on eating. A warming-up exercise before eating a meal as well as fixing the feeding amount per bite to be 3-8 ml is also helpful to prevent pulmonary aspiration. As for the temperature of food, it should be suitable for each food (i.e., if food is meant to be hot/cold, it should be served hot/cold. Hot food should not be too hot). Between meals, feed jelly or thickened water to patients in order to remove intraoral food residues. Additionally, it is important to perform oral care after each meal. In case patients experience difficulties in swallowing as well as cough badly, raising the head of the bed up to an angle of 30-60 degrees alongwith tilting the head of patients forward can help to stop coughing.

Keywords

dysphagia, diet, thickening agent

Question 13

Choose the INCORRECT answer regarding reaction to a choking patient.

- a. Slap the back of the patient to dislodge the foreign body.
- b. Use the rescuer's finger to sweep the foreign body away.
- c. Use the Heimlich maneuver (abdominal thrusts) to dislodge the foreign body.
- d. Use a domestic vacuum cleaner to suck in the foreign body.
- e. Seek help from other people immediately.

Answer : e

Summary :

- a. In case of choking, lay the patient in the lateral position immediately; ensure that the patient's face is accordingly directed to the same direction as the body. Slap the middle part of the patient's back several times. In case the patient's body weight is light, change the patient's posture into the prone position alongside the patient's bent knees or the rescuer's thighs supporting the patient's epigastric region before applying back blows.
- b. If the foreign body is lodged visible to the rescuer's eyes, hold the patient's jaw using the rescuer's hand and use the finger(s) of the other hand to sweep the foreign body away.
- c. If a patient is presumably choking with a large foreign body, a rescuer should stand behind the patient and use his or her hands to exert pressure on the bottom of the patient's diaphragm. This compresses the lungs and exerts pressure on any object lodged in the trachea.
- d. A domestic vacuum cleaner with a thin knife-shaped nozzle may be used. Use the normal cylindrical nozzle if there is no thin one. Use a suction machine if choking occurs in a hospital or medical institution.
- e. Assessing the situation of choking is the first thing that needs to be done. In case of choking, seek help from other people immediately and call an ambulance; in the meantime, perform the treatment described above (a-d). Even when the foreign body is seemingly dislodged from the patient, the patient needs to be checked if there are still any residues lodged in. Ensure that x-ray scans are performed of the patient's chest.

Things to understand

Learn how to help dysphagia patients when choking occurs while eating.

Keywords

pulmonary aspiration, dysphagia

Question 14

Which of the following is the correct method for coping with a problem that occurred during feeding a patient with dysphagia?

- a. If a patient does not open the mouth even if you are going to give him a meal, the patient should be forced to open the mouth.
- b. When patients choke during a meal, they should be given water to remove the remainder of the food from the mouth.
- c. When the patient spills food from the mouth during eating, reduce the quantity of food that is put into the mouth, and lift the face up slightly.
- d. When the patient lets the food clog up in the throat during a meal, put a finger into mouth of the patient and scrape out the food.
- e. When the patient sleeps during meal and doesn't eat, resume after the patient wakes up.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 5

Summary :

- a. If patient doesn't open their mouth even if you are going to give a meal, the patient may be in dementia. It may be difficult to give him a meal forcibly. He may be persuaded by an inventive idea such as change of environment, massage of the mouth and oral care.
- b. There is a possibility of aspiration while coughing during a meal. Because the water has high fluidity, and it is easy to cause an aspiration, so water shouldn't be given. When the patient coughs, clap the back so that patient can spit out.
- c. When food spills from the mouth while eating, it is lips dysraphism. Give the food after lips massage and warming-up. Reduce the quantity of food that is put into the mouth at the time.
- d. Food clogged up in the throat is an emergency. It can cause suffocation. The treatments for it are scraping out the food in the mouth with a finger, pressing the abdomen vigorously from the rear of the patient (the Heimich maneuver) and absorption.
- e. When food is in the stomach, the bloodstream of the stomach and intestines increases, and parasympathetic nerve becomes dominant, and the patient becomes sleepy. If the patient sleeps, he cannot swallow and may choke over the remains of food in the mouth. Don't give food forcibly and resume the meal after the patient wakes up.

Things to understand

There are various causes for dysphagia. It is necessary to assist the meal with an understanding of which stage can cause a problem. Oral care is one of the important approach methods to prevent trouble. As result, trouble can be prevented by using an oral care maneuver.

Keywords

Dysphagia, Meal assistance, trouble coping

Question 15

Which is wrong with regard to dentures in the edentulous jaws of elderly persons having dysphagia?

- a. Reproduction of individual oral form by dentures is difficult.
- b. Using an incompatible denture may disturb the rehabilitation adversely
- c. Support of the occlusion is restored by the wearing of dentures
- d. Aspiration-related pneumonia may be caused by poor denture cleaning.
- e. The denture should be used with reference to the understanding of the patient, intraoral hypersensitivity, oral muscle activity.

Answer : a

Summary :

- a. Reproducing the individuals oral cavity form by a denture is possible. The oral phase improves by activating tongue exercises which is achieved by supporting the relaxed orofacial muscles.
- b. Wearing a poorly fitting denture or a denture that has lost stability rather disturbs the improvement of the oral cavity function. Therefore, it is important that the dentist and the trainer in-charge of rehabilitation both cooperate for the success of this approach
- c. Occlusion support is restored by using a denture. This is important in the pharynx aspect or the second phase of deglutition.
- d. If dentures are dirty, plaque may accumulate, further accumulating oral bacteria and candida. So using dirty dentures may cause aspiration-related pneumonia.
- e. At first wearing dentures may be limited only to deglutition and articulation training. Putting on the upper denture first can make it easier to get good stability. Wearing time can be increased after observing the patient's reactions. When the oral cavity is sensitive, desensitize with a toothbrush.

Things to understand

The process of deglutition, the usefulness of the denture in deglutition and the use of the denture should be understood.

Keywords

Dysphagia, elderly person, denture

Question 16

Which is correct about the usefulness of dentures for a dysphagia patient while eating?

- a. The denture is unnecessary for a patient on parenteral mode of diet.
- b. In edentulous patients, wearing dentures provides improvement in oral cavity phase of deglutition.
- c. In edentulous patients, the position of the mandible is stable, at the time of deglutition by wearing dentures.
- d. The patient with rhinopharynx closedown functional disorder, the function is activated by a tongue plate.
- e. Tongue malfunction can be compensated by palatal lift prosthesis.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

- Summary :**
- a. The gingival form changes and dentures become poor fitting when they are not used for a long time. During training of ingestion, the denture is important for chewing and swallowing action. Even for a patient on parenteral diet, the denture should be used as much as possible.
 - b. Using a denture helps chewing in edentulous patients. Furthermore, the relaxed oral tissues get support. Improvement in the oral cavity phase is provided by improved balance of the lingual muscles and suprahyoid muscle group, and by activation of tongue movement.
 - c. Even with edentulous jaws, mandibular position is stable. By wearing dentures the patient can eat well and there is an overall improvement in the tongue movements. Therefore swallowing of food and passage of food into the pharynx is smooth and improved.
 - d. It is necessary that the soft palate must rise when foods are swallowed, and rhinopharynx is closed, to put pressure in a mouth. When the soft palate is paralyzed, the function of the soft palate is activated by palatal lift prosthesis, and the rhinopharynx closedown function is improved.
 - e. When the range of motion is limited due to the deficit of tongue tissue or tongue movement disorders, a gap occurs between the tongue and palate, and swallowing of food into the pharynx becomes difficult. To compensate this decreased tongue movement or decreased volume of tongue, the gap can be filled by using a palatal augmentation prosthesis of proper thickness.

Things to understand

Denture, palatal lift prosthesis, palatal augmentation prosthesis and maxillary prosthesis compensate and activate the lost function of the oral cavity, and this leads to an improvement in chewing deglutition function. Use of dentures is often stopped during emergency periods of the systemic disease. And when the rehabilitation of the oral cavity function is started, using the denture is necessary. Recovery of a rhinopharynx closedown function and a tongue function as a result of functional training using a palatal lift prosthesis and palatal augmentation prosthesis leads to stoppage of device use. Appropriate management and adjustments are necessary to use a denture comfortably.

Keywords

Dysphagia, denture, palatal lift prosthesis, palatal augmentation prosthesis

Question 1

Which is correct regarding oral care for the elderly who is not going to open their mouth?

- a. If a patient does not open their mouth, a practitioner just has to give up treating them.
- b. A patient should never be forced to do something they do not want to do. There is a case that you just have a patient drink a cup of tea every time they eat.
- c. First, think of a reason why the patient does not open their mouth. Start with just talking to them.
- d. A patient should first get used to be touched in their mouth. Let them experience how good it feels to have their mouth clean.
- e. If a patient has a sensitive area in the mouth, try desensitization. In this case, start with the front teeth.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

Summary :

- a. Even if a patient does not open their mouth, try to think if there is anything you can do as a professional. Some possible causes may be dementia, organic disease like paralysis, sensitivity, dental disease with pain in the TMJ. If a patient does not have enough trust in the medical staffs, try to bring in someone they trust.
- b. It is possible that the treatment starts with the patient having a cup of tea. Good dental care requires a daily routine, so it is important to find a routine which will work for them.
- c. Communication with the patient is very important. Try to talk to them prior to the treatment so that they can be relaxed. Try hard to build a good relation with them.
- d. It is important to let them experience that it feels good to keep their mouth clean. Try to offer good care items. For example, a soft tooth brush can make a difference. If a patient has dementia, they can get scared because they do not know what is going to happen to them.
- e. If a patient has sensitive area, perform desensitization starting from molar teeth. Front teeth are more sensitive than molar teeth.

Things to understand

Think of the cause why they do not open their mouth, for example dementia, organic disease like paralysis, sensitivity, dental disease with pain in the TMJ. The causes may be a lack of trust in the relationship. It is necessary to confirm whether the patient is suffering from Parkinsons. Have a communication, learn how to do desensitization

Keywords

Think of the reason, start with anything you can do, communication

Question 2

Which is wrong regarding myofunctional therapy by oneself?

- a. blowing
- b. tongue and myofunctional loading therapy
- c. dysarthria training
- d. blow up a balloon
- e. tongue and myofunctional therapy

Answer : d

Summary :

- a. The therapy is used when sound or food leaks out from the nose. Inhaling through the nose and exhaling through the mouth through a straw into a glass of water is effective. Training to close lips properly and pulmonary function training too are effective therapies.
- b. The therapy is used when tongue and myofunctional movement is weak. Push the tongue with a spoon or puff out cheeks and push with fingers. It becomes a velopharyngeal training.
- c. Pronouncing "Pa", "Ta", "Ka" is not only dysarthria training but also velopharyngeal training.
- d. When stricture of the esophagus or esophageal movement is weak, esophagus stretch with balloon catheter requires a medical professional's assistance. This is not myofunctional therapy.
- e. Used when the tongue and lips movement is week. Trying to touch the nose or the chin with tongue and continuing pronouncing words for 10 seconds works the best.

Things to understand

Therapy is to improve myofunction

Keywords

Myofunctional therapy

Question 3

Which is the correct training for improving oral cavity function at home?

- a. Adjusting the denture and instructing how to use it for a patient who is unable to take oral medications.
- b. Only an expert may train.
- c. Perform the cervical rotation method on the paralyzed side with reclined position.
- d. Only indirect training is recommended at home.
- e. Because the patient doesn't choke, training using a liquid is performed.

Answer : a

- Summary :**
- a. To improve oral cavity function, adjusting the denture and instructing how to use is important. It is important to prevent a drop in biting force and chewing power.
 - b. Training a patient with dysphagia can be performed by not only experts but also by their family or care givers.
 - c. If the cervical rotation on the paralysed side is performed for the purpose of swallowing, the risk of aspiration increases.
 - d. If evaluation of eating and swallowing functions is performed enough in advance and the way of training is instructed, direct training, such as stepwise eating training can be done.
 - e. Even if the patient doesn't choked, he could be in silent aspiration; direct training using water should be performed after enough evaluation.

Question 4**Which is wrong regarding furred tongues?**

- a. Even if quantity of food intake and speech decreases, there is no influence on quantity of adhesion of the furred tongues.
- b. Plenty of bacteria as well as food remnants and mucous debris are found on furred tongues.
- c. Care for furred tongues must be carried out by all means towards the front from the rear.
- d. Long-time dosage of antibiotics exacerbates adhesion of the furred tongues.
- e. The area of predilection for furred tongues is just in front of the terminal sulcus.

Answer : a

- Summary :**
- a. When quantity of food intake and speech decrease, self-cleaning function decreases, and it causes adhesion of the furred tongue.
 - b. Food remnants, mucous epithelial debris and bacteria are found on furred tongues.
 - c. Care for furred tongues must be carried out by all means towards the front from the rear, so that the patient with dysphagia can avoid miss swallowing.
 - d. Long-time dosage of antibiotics cause a microbial substitution phenomenon, and it causes adhesions of furred tongues.
 - e. The area of predilection for furred tongues is more forward than terminal sulcus of the dorsum of tongue.

Things to understand

There are many elderly people with decreased ADL and who cannot perform mouth care by themselves, and their families leave them. Adhesion of the fur is of concern among such patients. The bacteria which are attached to fur may cause pneumonia, so the care of the tongue has a big significance.

Keywords

furred tongues

Question 1

Which of the following are correct about the treatment of a person who has hypersalivation?

- a. Generally the quantity of secretion of saliva is approximately 1-1.5L a day.
- b. When slobber is apparent, train them to swallow saliva consciously.
- c. Wipe off saliva collected in oral cavity with tissues
- d. The warm massage of the salivary gland is effective in decreasing saliva.
- e. When the power to close lips decrease, slobber increase.

Combination : 1 a, b, c 2 a, b, e 3 a, b, e 4 b, c, d 5 c, d, e

Answer : 1 and 2

Summary : a. The quantity of secretion of saliva is approximately 1-1.5L a day. When salivate collects in the mouth, a deglutition reflection works naturally and is swallowed. Slobber occurs as a result of the increase in the quantity of saliva, decreased deglutition reflex and inability of the lips to close properly.

b. Deglutition usually happens 600 times a day. Because it is thought that a person with much slobber does not have a strong deglutition reflex, it is necessary to consciously swallow saliva.

c. We usually swallow saliva naturally. However some people wipe off saliva which has collected in the mouth with a tissue. They have to be trained to swallow saliva consciously.

d. The chilly massage of the skin on submandibular gland and the parotid gland is effective in decreasing saliva. The massage is effective against increasing slobber so it is necessary to be tried. Good oral hygiene is necessary to avoid excess increase in saliva.

e. When there is decreased approximation of the lips as in unilateral paralysis, saliva drools from the mouth. It is necessary to train the patient to close the mouth normally; cold massage of the orbicularis oris muscle and avoiding sleeping face down also helps.

Things to understand

It is thought that the slobber is caused by increase in quantity of saliva, difficulty to swallow and hold saliva in the mouth. Deglutition training, lips approximation training, cold massage and avoiding sleeping face down may be done in combination to prevent slobber. Medical therapy (Cholinolytic drug) may be effective in some cases.

Keywords

Saliva, Slobber

Question 2

Which of the following is a correct about MRSA?

- a. MRSA is of high virulence, so oral care should not be performed.
- b. No oral care is required except usually using gargles.
- c. Washing hands well and general mouth care is needed
- d. Toothbrush or other implements is used by an MRSA patient worsens any infectious disease
- e. Oral care decreases habitual presence of bacteria and promotes the onset of MRSA pneumonia.

Answer : c

Summary : a. As for the MRSA, most of the virulence is low, and it rarely infects other healthy people.
b. In addition to normal mouth care, gargles, such as povidone iodine 3-4 times a day, is recommended.
c. Not just MRSA, but to prevent various other intraoral infections, diligent oral hygiene care is necessary.
d. Even if an MRSA bacteria carrier uses a toothbrush and other oral care aids, it doesn't deteriorate infection and doesn't promote it.
e. Oral bacteria including the MRSA decreases if good oral health is maintained and this prevents pneumonia.

Things to understand

The oral health care of a patient with an infectious disease such as MRSA should be done in the same way as general care, the caregiver have to take precautions like proper hand-washing to prevent the spread of infection.

Keywords

MRSA pneumonia, gargle, hand-washing

Question 3

Which of the following is incorrect with regard to MRSA?

- a. The MRSA is an opportunistic infection.
- b. MRSA stands for methicillin-resistant *Staphylococcus aureus*
- c. Major disease-causing germs of hospital infections in our country are MRSA and *Pseudomonas aeruginosa*.
- d. Healthcare workers are more likely to become the source of hospital infection of the MRSA.
- e. It is pointed out that for persons with MRSA infection, antibiotics are available free of cost from the drugstore.

Answer : e

- Summary :**
- a. Opportunistic infection is an infection caused by an organism (harmless bacteria called the weak poison microbe, nonpathogenic microbe) that does not cause disease in a healthy person.
 - b. MRSA stands for Methicillin-resistant *Staphylococcus aureus*, it means *Staphylococcus aureus* that are tolerant of methicillin.
 - c. Infection that is acquired in a hospital setting is called hospital infection. It can either be cross-over infection (direct infection from a patient, a healthcare worker, machine equipment) or endogenous infection (autoinfection due to the indigenous bacterium that is generally present but causes infections in persons with decreased immunity)
 - d. Not only patients infected with MRSA but also healthcare workers (if infected but apparently healthy without subjective symptoms can be carriers who can spread infection by touch or contaminated clothing) contaminated medical equipments, bedding and garbage can become source of the MRSA hospital infection.
 - e. A modern medical trend, that is abuse of the antibiotic, is related to the MRSA appearance. The free sale of the antibiotic in the drugstore in the city is not permitted.

Things to understand

Most of the infected people are elderly people. Hospital infection is an infectious disease that a patient or a healthcare worker might acquire in a hospital. The Prevention of Epidemics center in America defines infection that appears on the third day after hospitalization as nosocomial infection. It is important to note that a healthcare worker becomes the source of infection in the case of nosocomial infection.

Keywords

MRSA

Question 4

Which is correct with regard to the treatment for an elderly person with severe clenching?

- a. Clenching isn't a problem, because it makes the jaw strong.
- b. As clenching is caused by a weak jaw, so clenching solid foods, opening the mouth widely and yawning are recommended.
- c. Because daily stress and malocclusion might be causes, seeing a specialist is recommended when it is not cured.
- d. It improves with more vigorous oral care.
- e. Because clenching occurs on teeth, denture treatment after extraction should be requested.

Answer : c

- Summary :**
- a. Clenching adversely affects teeth, periodontium, masticatory muscles and temporomandibular joint.
 - b. Chewing solid foods and opening the mouth excessively affect the same as the above
 - c. Stress-relieving is important,. Medications may be taken for the same. But also seeing a specialist and checking whether there is malocclusion or abnormal strain on masticatory muscles is very important.
 - d. Reducing disease-causing germs with good oral care improves periodontal disease and QOL, but is not an effective treatment for the clenching directly.
 - e. Clenching is not cured by dentures and QOL may decrease by making dentures after extraction.

Things to understand

Same as point iii in Summary

Keywords

Clenching, malocclusion, stress

Question 5

Which is correct regarding an aged person who has a habit of clenching?

- a. Tooth extraction is required
- b. It is not associated with progression of periodontal disease
- c. There is no tooth abrasion
- d. Refreshment or improvement of sleeping condition becomes effective.
- e. Using a mouth guard during sleep is effective.

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 5

Summary :

- a. The cause of clenching during sleep is obscure. The cause is regarded as a transient adjustment, a function imbalance of the autonomic nervous system.
- b. When there is periodontal disease, clenching may exacerbate it.
- c. When there is habit of clenching, remarkable abrasion is seen. Among the elderly people, it cannot be distinguished from normal attrition. In any case, the form of the teeth changing is remarkable.
- d. The cause of clenching is obscure, so the main treatment is symptomatic therapy. The following are also effective, refreshment with moderate exercise before sleeping, changing the bed and bed room.
- e. For local treatment of clenching, wearing a mouth guard (anti-clenching splint or night guard) while sleeping is effective. It is advised to choose a design with as little unease as possible.

Things to understand

Clenching occurs during light sleeping, and due to repeated, extremely rhythmic contractions of the masticatory muscles on both sides. Accompanied with an increase in heart rate & breathing, rapid eye movement and groan, it is thought to occur due to the autonomic nervous system imbalance. Remarkable abrasion of cuspid and the premolar cusp is seen in young individuals, the onset & frequency of clenching itself is thought to be low in the elderly people. In addition, close distinction between attrition of the tooth and its abrasion is difficult.

Keywords

Clenching, elderly person

Question 6

Which is correct regarding a dislocated jaw?

- a. At first push the jaw and forcibly close the mouth
- b. By opening the mouth more widely the jaw moves back to the correct position easily
- c. Bite strongly and fix the jaw with bandage
- d. When it is difficult to reposition the jaw, contact a doctor
- e. Take a chill pill and see how it works

Answer : d

Summary : a. When the jaw is dislocated, pushing the jaw and closing the mouth forcefully is painful and makes it difficult to reposition the jaw
b. Opening the mouth widely leads to severe anterior dislocation of the mandibular condyle
c. Because of the same reason a. Biting strongly is not the appropriate treatment. Bandaging the head without confirming reposition causes it to become chronic.
d. A habitual dislocation may reposition by itself. However when it is difficult to close the mouth and bite correctly, contact a doctor as soon as possible.
e. Taking a chill pill does not lead to repositioning. Also drinking water carelessly may lead to aspiration. Leaving it dislocated as it is, is never advisable.

Things to understand

It is important to understand the usual facial configuration, normal jaw movements, biting position and whether the patient is using denture or not. Evidence of dislocation includes the form of the face getting longer suddenly and inability to talk & bite properly.

Keywords

Repositioning, Dislocation of the temporomandibular joint, closing mouth

Question 7

What is the treatment for TMJ dislocation for a patient who's TMJ is easily & repeatedly dislocated?

- a. Don't move the jaw and see a specialist.
- b. Try to reposition the jaw.
- c. Judge whether to attempt repositioning or not by adjusting the denture and checking the occlusion.
- d. After the repositioning, keep mouth opening limited.
- e. Even if it is uncertain whether the jaw was repositioned or not, wait and see if it is no painful.

Answer : e

Summary : Most of the habitual temporomandibular joint dislocations can be normally easy to treat by repositioning. Repositioning as soon as possible is recommended, because it becomes difficult after leaving the joint dislocated for some time. After the repositioning, mouth opening should be limited.

Question 8

Which is incorrect regarding the onset and prolongation of stomatitis?

- a. Diabetes
- b. Use of the anticancer agent
- c. Insufficient intraoral cleaning
- d. Dry mouth
- e. Use of the denture

Answer : d

Summary : Diabetes and use of anticancer agents can cause stomatitis. Insufficient intraoral cleaning and dry mouth are local factors of letting the treatment of stomatitis prolong. Hygienic and adapted dentures don't necessarily become a cause or the protraction factor of treatment.

Keywords

Stomatitis

Question 9

Which of the following is wrong about the cause of stomatitis?

- a. Caused by opportunistic infections.
- b. Caused by a side effect of chemotherapy and radiotherapy.
- c. Caused by Candida bacteria.
- d. Virus is not a cause.
- e. It occurs when immunity decreases due to stress or fatigue

Answer : d

Summary : a. Infectious diseases with symptoms of stomatitis are caused by opportunistic disease-causing germs in the mouth such as simple herpes, Herpes zoster and Oral candidiasis etc.
b. At first direct factors like radiation exposure and anticancer agents are considered to be a cause of stomatitis. By secondary action, decreasing bone marrow activity and immune deficiency are thought to cause it.
c. The cause of Stomatitis is Candida bacteria,
d. Viral infections such as simple herpes, herpes zoster is a cause for Stomatitis
e. When immunity decreases due to stress or fatigue; stomatitis may occur even among the young.

Things to understand

To understand various causes of stomatitis

Keywords

Stomatitis, causes, opportunistic infections

Question 10

Which is correct regarding oral ointments or topical agents for stomatitis?

- a. Steroid is not included in oral ointments.
- b. Antimicrobial is included in a topical agent for stomatitis.
- c. Steroid-containing ointment is applied to oral candidiasis.
- d. You may use skin medicine for external application for stomatitis.
- e. Oral candidiasis may be caused by a long-term continuous use of a steroid-containing ointment.

Answer : e

Summary : Oral ointments contain steroids. Long-term continuous use may cause oral candidiasis.

Keywords

stomatitis

Question 11

Which pair is incorrect with regard to disease and therapeutic drugs?

- a. Recurrent aphthous-a steroid topical agent
- b. Candidiasis-antifungal agent/ointments
- c. Shane Glenn's syndrome-artificial saliva
- d. Lichen planus-antiviral ointments
- e. Herpes zoster-antiviral ointments

Answer : d

Summary :

- a. Treating the adhesion of small oral lesions such as recurrent aphthous and providing a long-time drug effect.
- b. Antifungal ointments/agents for external use (gargling) are the basic treatment of candidiasis.
- c. Shane Glenn's syndrome is a lesion with dry mouth and requires artificial saliva as treatment.
- d. Lichen planus's origin is unknown, but may be related to decreased

immunity and allergy to metal, therefore do not use the antiviral agent, but use steroid ointment.

- e. The herpes zoster is caused by herpes virus and requires antiviral agents/ ointments to treat it.

Things to understand

To understand a cure for various kinds of stomatitis

Keywords

Ointment, Stomatitis, topical agent

Question 12

Which is correct with regard to artificial sweeteners?

- a. The raw materials of sugar alcohol such as sorbitol are sugar beet and sugar corn.
- b. Sugar is not included in the food when indicated "sugar free".
- c. Even if a pathogen of the tooth decay (caries) metabolizes, xylitol does not produce acid.
- d. Phenylketonurics need attention for Ellis Thor intake.
- e. If the patient is taking non-sugar sweeteners, oral care is not necessary.

Answer : c

- Summary :**
- a. Sugar alcohols such as sorbitol, maltitol and erythritol are made from starches such as corn. It is sugar (sucrose) itself that is made of raw materials like sugar beet and sugar cane.
 - b. Even if any sweetener (such as honey) except sugar is included, "sugar free" is displayed, and it means only sugar (sucrose) is not added. In contrast, "sugarless" means there is absolutely no sweetener at all including sugar.
 - c. The cause of tooth decay (caries) is that a pathogen produces acid made from sugar in plaque and decalcifies tooth. Even if a pathogen metabolized, sugar alcohol such as xylitol it does not produce acid.
 - d. Because phenylketonuric does not have an enzyme to metabolize phenylalanine, some damage in brain may be caused by high intake. A warning is needed for excessive intake of aspartame which is a sweetening material included in L-phenylalanine compound.
 - e. Oral care is important to prevent tooth decay (caries) as well as to prevent periodontal disease or other intraoral diseases.

Question 13

Which is correct regarding oral health care aids & tableware for the handicapped?

- a. If it is hard to grab a toothbrush or a spoon, tie a sponge, expanded polystyrene or cloth to make it thick and easy to hold.
- b. It is hard for some handicapped persons to clean a false tooth, leave it to a caregiver.
- c. Prepare an environment with a slip-proof mat and a cup-holder in order to eat slowly while watching TV.
- d. Use tools that can be handled well with existing skills.
- e. Bend or extend the grip of a toothbrush or a spoon to make it easier to use them.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 3

Summary :

- a. Make the tool's grip thicker or put a holder to be easily grasped in the hand of a handicapped person.
- b. Contrive to make a handicapped person use his remaining skills with low priced daily goods. Moving the denture may enable a handicapped person to clean it.
- c. It is important to prepare an environment by turning off the TV for handicapped persons to concentrate on their meals.
- d. It is needed to help a person whose one hand is paralyzed to live his life enthusiastically by using his normal hand.
- e. Bend or extend the grip of a toothbrush for a person who is unable to clean his teeth by himself or for persons who are handicapped.

Things to understand

- To use the hand other than the handicapped one and to make it easier to grasp oral care aids with remaining skills.
- Use a slip-proof mat and a cup-holder.
- Need to prepare an environment.

Keywords

Low price, use remaining skills, prepare an environment

Question 14

Which is the correct answer about helping a person who cannot remove phlegm by himself?

- a. Be able to help patient cough phlegm out with washed bare hands.
- b. When sputum is tenacious, and discharge is difficult, taking water promotes expectoration.
- c. Put a finger or toothbrush into his mouth, for expectoration of sputum in the patients losing consciousness,
- d. Postural drainage must not be used for a patient lying for long time.
- e. Do not gargle after taking a liquid medicine, this way it will work longer.

Answer : b

Summary :

- a. By all standard precautions, blood, body fluid, mucous, and injured skin of all patients are considered possibly infective. Therefore when performing the absorption in oral cavity or the nasal cavity, using disposable gloves is necessary.
- b. Discharge of the sputum depends on adhesion of phlegm and transportation power of the mucosa of trachea. Therefore drinking water helps discharge of the sputum by making tracheal mucosa smooth and reducing adhesion of phlegm.
- c. Putting a finger or a toothbrush into mouth too deeply causes feeling of sickness and cough. And vomiting may cause aspiration pneumonitis, it is not an appropriate treatment.
- d. Postural drainage is performed for prevention and cure of atelectasis and pneumonia by retention of respiratory secretion. It is applied to a patient lying for a long time, having much expectoration, using the respirator, and not being able to cough well due to a pain.
- e. After taking a liquid medicine, gargle to prevent absorption of the extra medicinal solution from oral mucosa and to get rid of intraoral unpleasantness. Saliva and a liquid medicine in mouth affect the gastrointestinal tract, so that vomit it out instead of swallowing.

Things to understand

Retention of phlegm causes respiratory obstruction, respiratory infection, cough, and exhaustion. From the view of prevention of diseases, taking care of mouth is important. Drinking water, gargling, control of room temperature and humidity are important, because the tenacity of the sputum becomes strong, when water is less. When phlegm increase and smells bad, it causes a sick feeling and appetite decreases. In the case it is hard to spit phlegm out, there are methods to stimulate to spit phlegm out by absorbing respiratory humidity, postural drainage, squeezing, huffing. When many secretions exist in a mouth, nose, and respiratory tract, moreover adhesion of phlegm is high, excrete phlegm out artificially by a suction machine.

Question 15

Which is the correct answer regarding washing hands?

- a. From the view of prevention of diseases, hand crèmes and hand lotions should not be used after washing hands.
- b. Colon bacillus, *Pseudomonas aeruginosa*, and *Serratia marcescens* left on the medical staff hands temporarily can be eliminated only by hygienic hand-washing using antiseptic solution.
- c. With repeated hand washing with disinfectant, skin of hands will become very dry and cracked leading to increased bacterial count.
- d. Make hands hygienic with hand-washing using disinfectant before oral care.
- e. When you wear gloves and perform mouth care, you can omit the hand-washing.

Answer : c

- Summary :**
- a. Rough hands are likely to be infected, so caring for skin is important. Effective prevention of rough hands can be done by: using disinfectant which prevents hands from becoming rough applying moisturizing crème and ointments many times using protection crème.
 - b. *Escherichia coli*, *Pseudomonas aeruginosa*, and *Serratia marcescens* are comparatively short living, so they don't multiply on hands. But since they cannot be seen by naked eyes; it is important to get rid of them immediately by washing hands with water and soap.
 - c. By repeated hand washing using disinfectant, the skin of hands becomes very dry and tend to crack that may accumulate increased bacterial count. Choose the right kind of soap depending on the purpose of hand washing and extent of soiling.
 - d. Temporary microbes can be got rid of by daily hand washing. However, for immune deficiency patients and patients with contagious diseases such as MRSA infection a good measure to prevent infection spread is needed in the form of hygienic hand washing.
 - e. It is necessary to wash hands before and after wearing gloves, because there are some possibilities of infection spreading from hands by touching the infected surface of gloves when taking them off.

Things to understand

Washing hands plays an important role in prevention of infection while hospitalized. Hand washing can be divided into "daily hand washing" for getting rid of dirt and temporary microbes, "hygienic hand washing" for getting rid of or sterilizing temporary microbes, "operation-time hand washing" for getting rid of, sterilizing or decreasing normal bacterial flora on skin and maintaining sterile effect. Daily washing hands with water and soap is enough for before and after helping to eat and taking care of mouth, but in the case of taking care of a patient who needs considerable measures to prevent infection by touch and an immune deficiency patient, hygienic hand washing is needed. Choosing the kind of soap depends on the purpose of washing hands and the extent of soiling. Washing hands with a soap not containing sterilization ingredient enables to get rid of temporary microbes which is enough for daily life.

Keywords

Washing hand

Question 16

Which Stomatitis is not suitable for application of the steroid ointment?

- a. Aphthous stomatitis
- b. Oral candidiasis
- c. Labial herpes
- d. Denture stomatitis
- e. Glossitis

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 4

Summary :

- a. Steroidal anti-inflammatory agent (Ointment, patch medicine, mist medicine) is efficacious on chronic desquamative gingivitis, ulceration, refractory stomatitis or glossitis with ulcer and aphthous stomatitis
- b. Candidiasis is reported as the side effect of steroidal anti-inflammatory agents. Using the medicine is not appropriate, but antifungal drug is efficacious on oral candidiasis.
- c. Because the steroid controls the function of immunity, viral infectious disease such as herpes might exacerbate.
- d. Denture stomatitis is not decubital ulcer caused by unmatched dentures but by Candida. Whether it is easy to attach to resin which is the material of the denture base is doubtful, so the steroid ointment is inappropriate.
- e. External application such as the steroid ointment is thought to be effective, but for chronic recurrent aphthous and glossitis, should refrain from rambling use.

Things to understand

Understanding adaptation of the steroidal anti-inflammatory agent

Keywords

steroidal anti-inflammatory agent, stomatitis, glossitis

Question 17**Which diseases are not suitable for application of the steroid ointment?**

- a. Ulcer caused by denture
- b. oral candidiasis
- c. herpetic stomatitis
- d. recurrent stomatitis
- e. radiation stomatitis

Combination : 1 a, b 2 a, e 3 b, c 4 c, d 5 d, e

Answer : 3

Summary : a. It is the correct method to apply steroid ointment to affected part to relieve inflammation and adjust denture which causes decubitus. From the view of treatment delay of acute wound and decreased immunity, steroid ointment should not be used for long term.

b. Steroid ointment should not be applied to oral candidiasis as it will make the condition worse due to immune suppression. Antifungal drug should be applied to oral candidiasis.

c. Steroid ointment should not be applied to herpetic stomatitis as it will make the condition worse due to immune suppression. Antiviral drugs should be applied to herpetic stomatitis.

d. Generally recurrent stomatitis is intractable and reoccurs. For autoimmune diseases such as Behcet's disease, drug characteristics are unidentified. Treatment includes local administration of steroid ointment, gargle with the azulene containing agent and good oral cleaning.

e. Radiation stomatitis is caused by radiation therapy. The methods to cure it include gargling with medicinal liquids, applying steroid ointment to relieve inflammation, applying jelly containing local anesthesia to relieve pain.

Things to understand

Steroid has an anti-inflammatory effect and immunosuppressive effect, and it relieves reddening, swelling, and pain after it is applied to the spot directly. However, long term using of steroid requires attention, because it makes the mouth susceptible to contagious conditions and causes Candida and bacterial infection. In the case of short-term use, the steroid's immunosuppressive effect is not a major problem except for in a greatly immuno-suppressed patient. Steroid must not be used easily and for long-term.

Keywords

cure of stomatitis, Steroid ointment

Question 18

Choose the procedural accident, which happens while taking care of mouth of elderly who require nursing care, which need not to be treated medically.

- a. Accidental ingestion of gargle
- b. Dislocation of jaw joint
- c. Accidental ingestion of denture
- d. Fracture of carious tooth
- e. High tooth mobility

Answer : a

Summary :

- a. Accidental ingestion of a little gargle causes no harm. However, when this happens it is necessary to review the method of care.
- b. Dislocation of jaw joint needs to be treated immediately by the dentist, because it is hard to reposition the joint when a long time has passed since it happened.
- c. Accidental ingestion of denture needs to be checked immediately by a doctor, because it might be fatal.
- d. If a fractured carious tooth is left as it is, the sharp edges may cause ulcers on the buccal mucosa and lips. It may also cause inflammation and accidental ingestion of parts of tooth.
- e. It is dangerous to leave a highly mobile tooth to fall naturally because it may be accidentally swallowed. Immediate attention is necessary because aspiration might be cause suffocation.

Things to understand

This question is regarding severity of procedural accidents that happen while taking care of oral health of the elderly who require nursing care.

In such situations, accidents are expected and it is very important to judge whether medical treatment is needed or not. Especially accidental ingestion of denture might be fatal, so it needs medical treatment immediately. Dislocation of jaw joint needs to be treated immediately by the dentist, because it is hard to treat when a long time has passed since it happened. In the case of accidental ingestion of medicines, methods of care need to be reconsidered.

Keywords

Procedural accident, severity, elderly who require nursing care

Question 19

Choose the oral care method which must not be recommended before medical treatment for oral cancer patient.

- a. Brushing avoiding the lesion area
- b. Gargle frequently
- c. Less-incentive meal
- d. Scaling and brushing in the area of lesion
- e. Don't use denture next to the lesion

Answer : d

Summary : a. It is important to create an oral environment by brushing before operation, chemotherapy and radiation therapy. However, stimulating the lesion part should be avoided.

b. There are many oral cancer patients who have difficulty in mouth opening and they might be unable to brush their teeth enough, so they need to gargle often to keep their mouth clean.

c. Pay attention to meals of oral cancer patient especially, because it may make the disease worse. Eating incentive meals and hard meals may stimulate the lesions and must be prevented.

d. Regions around the lesions might be infected, it may seem that scaling is required, however it mustn't be done, because stimulating the lesion could cause bleeding or may lead to a bigger tumor.

e. When there is stimulation by touching the lesion or occluding it, denture must be taken off; because there may be similar damage at the time of putting on and taking off the denture again and again.

Things to understand

Matters that require attention in the oral care of an oral cancer patient

Keywords

Oral cancer

Question 20

Which of the following are correct about oral problems caused by chemotherapy for middle aged persons?

- a. Oral mucositis on dorsum of tongue is likely to be caused by chemotherapy.
- b. Dysgeusia caused by chemotherapy might be irreversible.
- c. Application of ice on the tumor region may prevent oral mucositis.
- d. Removal of tartar before taking anti-cancer drugs prevents periodontal disease from advancing.
- e. Tooth bruising prevents labial herpes.

Answer : d

Summary : a. "Oral mucositis" due to the anticancer agents occurs on non-keratotic mucous membrane such as cheeks, labial mucosa, a margin of tongue - tongue base, the floor of mouth, mucous membrane. In addition, it is hard to occur in gingiva, hard palate, the dorsum of tongue.

b. Dysgeusia is caused due to many reasons. Dysgeusia caused by the anticancer agent is usual temporary and heals gradually in the same way as loss of hair.

c. There is the report that cryotherapy in anticancer treatment is effective in preventing the onset of oral mucositis, however the cooling of the ulcer part may flame the mucous membrane turning it worse, and may delay healing

d. Removal of calculus and appropriate brushing are effective for the acute prevention of periodontal disease

e. Labial herpes is likely to occur as recursive infection during anti-cancer treatment when oral prophylaxis is low. Brushing is effective for the prevention of the secondary infection, but is not effective for the prevention of the onset.

Things to understand

Understand about problems in the mouth caused by chemotherapy for middle aged person. Be able to reduce uneasiness of the patient by summarizing that dysgeusia is more likely to improve. Cryotherapy of tumor may possibly delay cure of mucositis.

Keywords

anti-cancer agent , oral mucositis , trouble

Question 21

Which is correct regarding intraoral adverse events with Cancer chemotherapy and radiation therapy?

- a. Myeloablation decreases red blood cells and white blood cells, but it doesn't decrease the platelets.
- b. Oral mucositis and ulceration occurs in about one month after chemotherapy is started.
- c. Oral mucositis develops not only in patients with head and neck cancer but also in blood cancer patients.
- d. Giving a drug for the purpose of painkilling is positively required for severe oral mucositis.
- e. When the treatment is completed, most intraoral adverse events will recover.

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : v

Summary :

- a. Myeloablation is seen in 10 to 14 days after starting chemotherapy and radiation therapy for a cancer patient. Myeloablation reduces hematopoietic function and decreases all blood corpuscles.
- b. Oral mucositis and ulceration often develop within 10 to 12 days after starting chemotherapy.
- c. Oral mucositis may develop in all cancer patients undergoing chemotherapy just as head and neck cancer patients.
- d. When the painkilling effect of NSAIDs is not seen for severe oral mucositis, use the medical anesthetic (opioid) positively.
- e. Most of the adverse event such as oral mucositis, oral ulceration, dysgeusia are transient events and they will recover after completion of treatment.

Things to understand

It is important that we understand the pathogenesis and the pathophysiology of the adverse events due to chemotherapy to form a plan for oral care and select the tool.

Keywords

Cancer chemotherapy, Radiation therapy

Question 22

Which is correct regarding oral care for a patient who is under chemotherapy?

- a. When a patient became nauseous due to an adverse event of anticancer drug, the oral treatment should be discontinued.
- b. As an adverse event of anticancer drug, dentin hypersensitivity is triggered. Therefore, a tooth paste specially made for hypersensitive dentin is used.
- c. If a patient has stomatitis as an adverse event from anticancer drug use, narcotic analgesics must be used in order to continue the oral treatment.
- d. Stop the oral treatment when blood platelet count becomes 40,000/mm³ as a result of chemotherapy.
- e. Dry mouth is caused due to chemotherapy treatment; therefore, extra moisturizing agent should be applied.

Answer : c

Summary :

- a. Since many anticancer drugs cause nausea and vomiting, use of anti nausea drugs even before the chemotherapy, is recommended. Stomatitis could often be caused from bad oral conditions. So it is essential to come up with a kind of oral treatment that does not stimulate the mouth too much.
- b. Hypersensitive dentin is an adverse event of vinca alkaloid, antimicrotubule agent. It is a symptom of peripheral neuropathy caused by drugs. It will get better as the amount of drugs used decreases or the treatment ends. Neither hypersensitive dentin treatment nor dental pulp extraction improves the condition.
- c. Anticancer drugs often cause stomatitis as an adverse event. It may often stop the oral treatment, which can cause a serious infection. Therefore, it is critical that the oral treatment be continued under appropriate pain control.
- d. Anticancer drugs interfere with hematopoietic system, which causes low platelet count and gingival bleeding. In order to control inflammation on periodontium, the oral treatment has to be carefully continued.
- e. Anticancer drugs influence tissues of the salivary gland as well, which cause dry mouth. Symptomatic treatment, such as liquid intake is effective. Moisturizer is beneficial, but thick application of moisturizer does not work effectively. Apply thin layer of moisturizer.

Things to understand

Various adverse events occur in a patient who is under chemotherapy. The adverse events are not only oral symptoms such as Stomatitis, dry mouth, hypersensitive dentin and gingival bleeding, but also oral infection with vomiting may occur. Oral care before treatment is very important to reduce adverse events. Furthermore, the oral care with consideration of adverse events is important.

Keywords

Chemotherapy

Question 23

Which of the following occurs easily in the oral cavity in patients who use an antiepileptic agent?

- a. Gingival recession is easy to occur.
- b. Gingival bleeding is easy to occur.
- c. A wedge-shaped defect is easy to occur.
- d. Gingival hyperplasia is easy to occur.
- e. Furred tongue is easy to occur.

Combination : 1 a, b 2 a, d 3 b, c 4 b, d 5 d, e

Answer : 5

Summary :

- a. Antiepileptic agents and gingival recession do not have any correlation.
- b. Antiepileptic drugs affect blood vessels and coagulation factors, and the side effect is that bleeding occurs easily.
- c. Some antiepileptic agents and wedge-shaped defect do not have any correlations.
- d. Antiepileptic agent such as phenytoin can cause gingival hypertrophy.
- e. There is no relation between antiepileptic agents and furred tongue.

Things to understand

There are many antiepileptic agent used. Phenytoin is often prescribed, but is known to cause gingival hypertrophy.

In addition, gingival inflammation & swelling and bleeding are symptoms that many patients taking antiepileptic agents have, so special attention for oral care is needed.

Question 24

For which disease a test of bleeding tendency is considered necessary before tooth extraction?

- a. Hemophilia
- b. Cerebral thrombosis
- c. Diabetes
- d. Rheumatoid arthritis
- e. Hepatic cirrhosis

Combination : 1 a, b, c 2 a, b, e 3 a, d, e 4 b, c, d 5 c, d, e

Answer : 2

Summary : a. Haemophilia A is a hereditary bleeding disorder due to factor deficiency, and Hemophilia B is a bleeding disorders due to factor deficiency, and bleeding after tooth extraction becomes a problem.

b. Because patients with cerebral thrombosis often use anticoagulants such as warfarin or aspirin to prevent a clot from being formed, they have bleeding tendencies.

c. Diabetes patients have high blood glucose density, they present with decreased immunity, functional decline and delay in wound healing. They do not have bleeding tendency.

d. For treatment of rheumatism-related joint pain, long-term dosage of steroid is given. It doesn't evoke bleeding tendency.

e. Hepatic cirrhosis causes decrease in blood clotting factors which are vitamin K-dependent coagulation protein composed in liver, such as Factor , and , and thus causes bleeding tendency.

Things to understand

Elderly persons and patients having systematic complications often have bleeding tendencies. Before treatments such as tooth extraction, it is necessary that in such cases, inspection of the bleeding tendency needs to be done.

Question 25

Which method is not effective for preventing VAP (Ventilator-associated pneumonia)?

- a. To use the cuffed tubes with suction on a cuff
- b. To keep a patient in a horizontal position during care
- c. To keep proper pressure in a cuff
- d. To insert intraoral absorption
- e. To carry out standard precaution

Answer : b

Summary :

- a. By using the cuffed tracheal tube with incorporated suction lumen, it is possible to reduce the risk of discharges from the mouth entering into the trachea through intubation tubes.
- b. It is not effective for preventing VAP. Generally patients who have no restriction on their head position are kept Fowler's or semi-Fowler's position. It is better to keep their head in a higher position so that we can prevent the backward flow and therefore we can prevent VAP.
- c. It is very important to prevent the discharge from stomach from entering into the trachea. It is considered to be effective to put proper pressure on the cuff with care, to take out the discharge which entered through ventilator.
- d. It is necessary to absorb all the things before going into the throat because some of the discharge which was attached in the mouth can drop into the tubes and enter the trachea during care.
- e. Standard precaution is the basic importance of all medical treatments. The patient on a ventilator is usually in a critical condition and easy to be infected. It is also very important to prevent infection.

Things to understand

Ventilator-associated pneumonia (VAP) means pneumonia which develops within 48 hours of starting artificial respiration by tracheal intubation. One of the infection courses of VAT is direct bacteria entry into the respiratory tract at the time of putting on and taking off the respirator circuit; the other is bacteria which propagates from the oral cavity and nasal cavity aspirate it into lower respiratory tract along the trachea tube as secretion and saliva. Using the artificial respiration apparatus appropriately, keeping oral cavity and nasal cavity, which could become the source of infection, clean and preventing miss-swallowing are important for prevention of VAP.

Keywords

Ventilator-associated pneumonia, prevention

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