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**GUIDE FOR PRACTICAL CLASSES
IN DENTAL THERAPY**

Minsk BSMU 2016

МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ
БЕЛОРУССКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ
1-я КАФЕДРА ТЕРАПЕВТИЧЕСКОЙ СТОМАТОЛОГИИ

Л. А. КАЗЕКО, Е. Л. КОЛЬ

**РУКОВОДСТВО ДЛЯ ПРАКТИЧЕСКИХ
ЗАНЯТИЙ ПО ТЕРАПЕВТИЧЕСКОЙ
СТОМАТОЛОГИИ**

**GUIDE FOR PRACTICAL CLASSES
IN DENTAL THERAPY**

Учебно-методическое пособие



Минск БГМУ 2016

УДК 616.31-085.242(811.111)-054.610

ББК 56.6 (81.2 Англ-923)

К

Рекомендовано Научно-методическим советом университета в качестве
учебно-методического пособия 16.12.2015 г., протокол № 4

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К Руководство для практических занятий по терапевтической стоматологии = Guide
for practical classes in dental therapy : учеб.-метод. пособие / Л. А. Казеко, Е. Л. Колб.
– Минск : БГМУ, 2016. – 60 с.

ISBN 978-985-567-409-3.

Изложены контрольные вопросы и клинические задачи к практическим занятиям по терапевтической стоматологии. Также предложены вопросы для подготовки к курсовому экзамену по терапевтической стоматологии и критерии оценки знаний студентов.

Предназначено для студентов 3-го курса медицинского факультета иностранных учащихся, обучающихся на английском языке.

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ISBN 978-985-567-409-3

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INTRODUCTION

The Guide for Practical Classes in Therapeutic Dentistry, Part 1, is composed according to the themes of Therapeutic Dentistry which students study in the 5th semester. Each class guide includes: subject of the class, plan of the class, goal of the class, tasks of the class, control questions of the material studied, as well as clinical challenges based on the subject of the class.

The content of the guide is defined by principles and:

- is based on international levels of proficiency;
- matches national qualification levels of achievement;
- has clearly and flexibly formulated objectives and outcomes;
- is based on professional and academic skills;
- covers professional and academic content (areas of subject knowledge); situational content and pragmatic content / necessary practical and useful skills;
- takes into account the students' backgrounds and their studies and target needs;
- is modular in its organization.

The teaching material of the 5th semester is divided into the following thematic groups:

Introduction to therapeutic dentistry. Deontologic aspects of dentistry. Organization of physician relationship with patients and medical staff. The organizational structure of dental clinics and dental therapeutic department. Workplace organization and selection of optimal working position. Work rules of physician's assistant.

Diagnosis and treatment planning. The purpose and objectives of diagnosis. Primary examination of a dental patient. Detailed examination. Diagnostic methods and steps. Recommendations of the World Health Organization for the diagnosis of dental diseases. Stages of treatment planning. Emergency assistance, indication. Systematic dental care: therapeutic, surgical, orthopedic, prevention of dental diseases. The main methods of diagnosis: interview of the patient (patient complaints, medical history, life, allergy), external examination, examination of organs and tissues, dentition. Palpation, probing, percussion. Additional methods of diagnosis of dental diseases. Laboratory Methods.

Patient's card as medical and legal document. Other dental records: ledger of a dentist, diary accounting treatment and prevention, prescription forms, directions. Rules for filling.

Professional oral hygiene. Periodontal disease. The role of oral hygiene. Theories of plaque formation. Its role in the pathology of oral tissues. Motivation interviewing of a patient with a demonstration of motivation materials. Agents of oral hygiene: basic, additional. Techniques of tooth brushing. Oral hygiene guidelines. Removing of the above-and subgingival plaque. Dental deposits indication methods. Hygienic indices.

Risk factors in the occurrence of gingivitis. The correlation between the oral hygiene and periodontal tissues inflammation. Clinical signs of acute and chronic gum inflammation. Index of gingivitis (Loe-Silness, 1963). Clinical signs of destructive processes in periodontal tissues. Periodontal index CPI (P. A. Leus, 1988). X-ray of periodontal tissue assessment.

Cariology. Definition of dental caries. Epidemiology. Aetiology, caries development theories, pathogenesis. Pathologic changes in dental tissues in case of dental caries. Classifications of dental caries (Blacks classification, anatomical and topographical, ICD-10). Clinical manifestations of caries. Basic and advanced diagnostic techniques. Treatment.

Developmental disorders and other diseases of hard tissues of the teeth. Classification of pathologic changes of hard dental tissues arising before the eruption. The mechanism of development, clinical picture, diagnostic methods, treatment principles of mottled teeth, hypoplasia. Prevention.

Classification of pathologic changes of hard dental tissues arising after the eruption. The mechanism of development, clinical picture, diagnostic methods, treatment principles of mottled teeth, hypoplasia. Prevention.

The teaching material of the 6th semester is divided into 2 thematic groups: **“The use of materials in dentistry” and “Endodontics”.**

”The use of materials in dentistry” envisages the learning of modern methods of dental caries treatment with contemporary dental materials, theory and practical skills in carrying out modern restoration techniques.

The teaching objectives of the **“Endodontics”** thematic group envisage the learning of causes of occurrence and developmental mechanisms of pulp pathology of different origin. The dental students learn to classify pulp and periodontal diseases, clinical manifestations and their course, indications and contraindications to applying different methods of endodontic treatment, basic principles of mechanical root canal treatment, determination of root canal length in the clinic, medicaments for intracanal therapy in the clinic, techniques of root canals obturation, as well as possible mistakes and complications when diagnosing and treating pulpitis and apical periodontitis.

It also proposes **questions for the exam in Dental Therapy for the 3rd-year students** and **evaluation criteria of the students` knowledge at the course exam.** Literary sources are also offered to prepare for practical classes.

Material of the Guide for Practical Classes will be useful for foreign students studying in English.

THERAUPEUTIC DENTISTRY 3RD YEAR 5TH SEMESTER

PRACTICAL LESSONS MODULE

Number of the class	Subject of the class	Individual work
Introduction to therapeutic dentistry		Review of scientific and professional literature, preparation of the written paper and carrying on scientific investigation
1	Deontology in therapeutic dentistry. Dental office. Sterilization of dental instruments. Basic rules of ergonomics in the dentist's work	
Diagnosis and treatment planning		
2	Diagnostic methods in therapeutic dentistry	
3	Dental patient's card. Accounting and reporting dental records. Rules of filling in	
Periodontal disease		
4	Individual and professional oral hygiene. Indication methods of dental plaque. Hygienic indices	
5	Clinical manifestations of gingivitis. Clinical research methods characterizing the destructive processes in periodontal tissues	
Cariology		
6	Dental caries Development, etiology, pathogenesis, epidemiology, classification	
7	Enamel caries. Clinical picture, diagnostic techniques, treatment	
8	Dentin caries. Clinical features, diagnosis, differential diagnosis	
9	Dentin caries. Methods of treatment, pulp caps	
10	Diagnosis and treatment of occlusal surfaces caries of posterior teeth	
11	Diagnosis and treatment of caries on the approximal surfaces of posterior teeth	
12	Diagnosis and treatment of dental neck caries	
13	Possible mistakes and complications in the diagnosis and treatment of dental caries	
14	Prevention of dental caries in adults	
15	Prognostication methods of dental caries	
Developmental disorders and other diseases of hard tissues of the teeth		
16	Diseases of hard tissues arising before the eruption (developmental disorders): mottled teeth, hypoplasia	
17	Diseases of hard tissues arising after the eruption	

STUDY GUIDE FOR PRACTICAL CLASS № 1

**Subject of the class: Deontology in operative dentistry. Dentist's office.
Bacterial purification of dental tools.
Basic rules of ergonomics of dentist**

Total term time: 245 minutes.

Plan of the class. Goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving of cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to prove the necessity of the deontological norms of conduct, which are applied by students while carrying out their work duties. To make students acquainted with the equipment of dentist's office, dental units, operating rules of dental units and dental chair.

Tasks of the class:

1. To introduce to students types and forms of ethical issues in operative dentistry.
2. To learn to recognize moral-ethical and professional-ethical issues that dentist daily comes across in one's work.
3. To know requirements to equipping office.
4. To study technical safety rules of work in dentist's office.
5. To learn to use dental unit.
6. To learn basic regulations of asepsis and antisepsis.
7. To learn basic rules of ergonomics in operative dentistry.
8. To learn to examine patient in ergonomic position.

Test questions on the class subject:

1. Short description of such profession as dentist.
2. Types of ethical issues in operative dentistry.
3. Medical, collegiate, brigade professional-ethical issues.
4. Equipping of operative dentist's office.
5. Sanitary-hygiene requirements to medical offices of operative department of dental clinic.
6. Asepsis and antisepsis, bacterial purification of dental tools.
7. Basic technical safety rules of work in dentist's office.
8. Arrangement of workplace and health of dentist.
9. Ergonomics of work of dental workers.
10. "Work of four hands" notion, duties of assistant of dentist.

Clinical challenges.

Challenge 1. While performing endodontic treatment, doctor jabbed oneself by reamer contaminated by patient's blood. What should doctor do in order to prevent professional infection? Is it the situation of emergency?

Challenge 2. While doctor was preparing decay cavity, patient's saliva got into doctor's eyes. Is a professional infection of doctor possible in this case? Should

doctor undertake any actions? If yes, then what are they? Specify preventive measures in similar situations.

Challenge 3. Dentist was treating a patient with caries without individual protection aids (mask, gloves, and protective spectacles). Before treatment, in anamnesis, patient denied any contagion or sexually transmitted disease. While doctor was preparing dental cavity, patient's saliva got to injured skin integument of dentist. Should doctor take any protective measures in this case? What can be the consequences of this case? Specify the preventive measures.

STUDY GUIDE FOR PRACTICAL CLASS № 2

Subject of the class: Diagnostics in operative dentistry

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving of cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to learn basic and additional examination methods of a patient in dentistry.

Tasks of the class:

1. To learn basic examination methods of a patient.
2. To learn additional examination methods of a patient.
3. To learn to analyse results of the basic examination and choose necessary additional examination methods.
4. To learn to appropriately evaluate status of general and dental health of a patient.

Test questions on the class subject:

1. Goal and basic principles of diagnostics. Definition of “diagnosis”, “diagnostics”, “basic and additional examination methods”.
2. Plan of examination of a patient in dentistry.
3. Basic examination methods of a patient in dentistry. Goal, tasks, methods.
4. Criteria of evaluation of state of mouth tissues — CPI, GI, OHI-S, CPITN indices.
5. Additional examination methods of a patient in dentistry: purpose, indications for their application.
6. Purpose and notion of the following additional examination methods: electric pulp test, X-ray, laser-induced fluorescence (DIAGNOdent), fiberoptical transillumination (FOTI), yellow-orange fluorescence (QLF-method).

Clinical challenges.

Challenge 1. Patient M. of 23 years old came to clinic with complaints of light-brown spots on vestibular surface of tooth 23. According to the patient, the spot appeared 2 years ago. It has not grown. There is no reaction to thermal

stimuli. What diagnostics aids are necessary to determine a diagnosis? What is your presumptive diagnosis? What are the dentist's actions?

Challenge 2. Patient P. of 35 years old underwent intraoral examination, during which there were revealed: deposit on all the teeth surfaces up to 1/3 of the crown height; in the area of lower central teeth there is subgingival dental calculus in the form of separate aggregations; hyperemia, a slight swelling and bleeding with palpation of the gums are determined. There are no pathological mobility of the teeth and no pathological dentogingival pockets were revealed. Determine CPI, GI, OHI-S, CPITN indices.

STUDY GUIDE FOR PRACTICAL CLASS № 3

Subject of the class: Dental medical record. Educational-reporting dental documentation. Norms of execution

Total term time: 245 minutes.

Goal of the class: to learn basic and additional examination methods of a patient in dentistry. To learn norms of execution of medical documents.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving of cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Tasks of the class:

1. To get acquainted with the medical standard documentation used at the dentist's appointment and its purpose.
2. To get acquainted with the requirements on how to fill it in.
3. To learn to add the results of patient's examination to the dental medical record.
4. To learn to correctly draw a treatment plan in the dental medical record.
5. To learn to discuss examination results and treatment plan with a patient.
6. To learn to fill in a paper of everyday control and journal of work of dentist.

Test questions on the class subject:

1. Enumerate medical documentation at the dentist's appointment.
2. Purpose and norms of maintenance of dental medical record.
3. Purpose and norms of execution of a dental medical record.
4. Purpose and norms of execution of a journal of curative-preventive work of dentist (assistant of dentist).
5. Purpose and norms of execution of an account form № 039-3/u-10 "Summary data on dental health of a patient at the first visit".
6. Requirements to maintenance of medical documentation.
7. Professional-ethical problems, arising from maintaining documentation.
8. Norms of obtainment by doctor of a voluntary (preliminary) consent of a patient to medical interference.

9. Legal responsibility of doctor for maintenance of documentation.

Clinical challenges.

Challenge 1. Patient A. came to dental clinic with complaints of spontaneous dull pain of tooth 26 that becomes stronger at night and during meals. The patient was examined and diagnosed with chronic fibrous pulpitis. The patient got acquainted with a treatment plan and possible complications in case of the refusal of the treatment, but did not sign the document “Voluntary consent to medical interference” and just gave oral consent. What are your actions in this situation?

Challenge 2. Patient S. was being examined at the clinic of operative dentistry and her dental status was determined. The results are the following: teeth 16, 15, 11, 24, 27, 28, 34, 46, 47 have caries lesion; in the area of tooth 21, 11, there are wedge-shaped defects; in teeth 22, 17, 12, 13, 44, 37, there are fillings in satisfactory state. There are no teeth extracted because of aggravated caries; teeth 18, 38, 48 have not erupted. On all the teeth, there is a deposit up to 1/3 of the crown. On the lower central teeth, there is a dental calculus. Write down a dental formula according to the above-specified information, determine DMF, OHI-S, CPITN indices and explain them. Make up a treatment plan.

Challenge 3. Having rendered emergency help to a patient F. of 34 years old with acute suppurative apical periodontitis, dentist wrote down in the medical record only complaints, status localis, diagnosis and treatment. Is an incomplete execution of a medical record acceptable? If yes, then in what cases? Has the doctor made all the necessary notes in the medical record?

STUDY GUIDE FOR PRACTICAL CLASS № 4

Subject of the class: Personal and professional hygiene of oral cavity.

Methods of dental deposit indication. Hygienic indices

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving of cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to correctly determine implication of dental deposit as a causative factor of some diseases of mouth cavity. To acquire skills of dental deposit indication and removal.

Tasks of the class:

1. To study classification of dental deposit according to WHO (World Health Organisation).
2. To study composition and characteristics of dental deposit.
3. To study methods of dental deposit indication and removal.
4. To study deontological principles of relations between a student and a patient when determining hygienic condition of mouth cavity.

5. To learn to observe and reveal dental deposit: visually, by tools, by colouring material.

6. To learn to carry out particular stages of scaling, removal of soft dental deposit, polishing of fillings and teeth.

Test questions on the class subject:

1. Definition of “dental deposit”, “biofilm”.

2. Classification of dental deposit according to WHO.

3. Soft dental deposit. Composition, causes of formation, impact on tissues of mouth cavity.

4. Methods of indication of dental deposit.

5. Index evaluation of oral hygiene (OHI-S, PHP).

6. Deontological principles of work with a patient (when talking, educating a patient on mouth hygiene and its correcting).

7. Professional hygiene and methods of dental deposit removal.

8. Tools for dental deposit removal by hand, classification. Requirements to the tools for dental deposit removal by hand. Rules of handling (holding, selecting support point, methods of grinding).

9. Suprasonic and acoustic tools for dental deposit removal, rules of handling.

10. Tools for cleaning and polishing.

Clinical challenges.

Challenge 1. Patient P. of 28 years old came to dentist complaining of dark pigmented deposit that can't be removed by tooth brushing. From anamnesis, the patient smokes a lot, drinks a lot of strong coffee, and brushes teeth once a day. While examining, on all the teeth, there have been revealed pigmented dental deposit of 2/3 of crown size, supragingival dental calculus and subgingival dental calculus. In the area of the front lower teeth, supragingival dental calculus covers 2/3 of the crown. Subgingival dental calculus is disposed around the neck of a tooth, in a circular way. On the other teeth, there are subgingival dental calculus of 1/3 of the crown and subgingival dental calculus in the form of separate conglomerates. Determine the patient's state of hygiene of mouth cavity. Classify the patient's dental deposit. By what methods can this deposit be removed? Give recommendations to the patient about an efficient hygiene of mouth cavity.

Challenge 2. Patient Sh. of 65 years old came to doctor with complaints of bleeding gingivae while brushing teeth, and bad breath. From anamnesis, the patient has a serious cardiovascular disease. 5 years ago, she was implanted a cardiostimulator. She is also afflicted with diabetes. Has not visited dentist for 1.5 years. Brushes teeth once a day (in the morning). While examining mouth cavity, in the area of the lower front teeth, there were revealed an abundant dental deposit: dental plaque, supragingival dental calculus and subgingival dental calculus. On the other teeth, dental deposit covers 1/2 of the crown size. Mucous membrane is hyperemic, dry, and shiny. When touched, the gingiva is bleeding. What should you start the treatment of the patient with? By what method is it possible to remove dental deposit of the patient? What factors do contribute to the formation of dental deposit in this case?

Challenge 3. Patient A. of 18 years old came to dentist complaining of bleeding gingivae during teeth brushing. From anamnesis, the patient visits dentist once a year, eats much starchy food, brushes teeth horizontally twice a day for one minute. While examining, on all the teeth surface, there was revealed non-mineralized dental deposit. Specify the main reason of the bleeding gingivae in this case. What does favour the formation of dental deposit of the patient? By what methods can the quantity of dental deposit be determined? Give recommendations about hygiene of mouth cavity and nutrition.

STUDY GUIDE FOR PRACTICAL CLASS № 5

Subject of the class: Clinical manifestations of gingivitis. Clinical research methods characterizing the destructive processes in periodontal tissues

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving of cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to learn to identify clinical signs of gingivitis, level of severity of inflammation, as well as destruction of the tissues of periodontium according to clinical signs. To be able to analyse X-ray.

Tasks of the class:

1. To know aetiology and pathogenesis of the diseases of periodontium.
2. To learn to identify clinical implications of gingivitis.
3. To learn to determine the GI gingival index (Loe, Silness, 1963), the CPI periodontal index (Leus P. A., 1988).
4. To be able to determine tooth mobility.
5. To be able to determine complex periodontal index.
6. To be able to evaluate clinical implications of gingival recession.
7. To be able to identify on X-ray widening of periodontal gap, resorption of inter-alveolar septum, osteoporosis.
8. To be able to remove subgingival calculus.

Test questions on the class subject:

1. Anatomist-histologic structure of the tissues of periodontium.
2. Risk factors of gingivitis development.
3. Connection between hygienic state of mouth cavity and inflammatory processes in the tissues of periodontium.
4. Clinical implications of gingivitis (change of colour, consistency, and contour of gingival margin, bleeding).
5. Clinical implications of acute gingivitis.
6. Clinical implications of chronic gingivitis.
7. Clinical signs of destructive processes in the tissues of periodontium.

8. Methods of determining the GI gingivitis index (Loe, Silness, 1963), its explanation.

9. Methods of determining the CPI periodontal index (Leus P. A., 1988), its explanation.

10. X-ray method of evaluation of the state of the periodontium tissues.

11. X-ray pattern of normal alveolar bone.

12. X-ray pattern of destructive process in the tissues of periodontium (osteoporosis, widening of periodontal gap, resorption of inter-alveolar septum).

13. Clinical signs of gingival recession.

Clinical challenges.

Challenge 1. Patient K. of 20 years old came to dentist with complaints of unpleasant feelings, discomfort in the mouth cavity, bad breath, and bleeding, that have been afflicting for around a year. Clinically observed: gingiva is edematous, hyperemic, bleeding with probing, much soft and hard dental deposit. OHI-S = 3.8; GI = 1.6. Specify clinical signs of gingivitis of this patient, make up a treatment plan.

Challenge 2. Patient N. of 25 years old came to dentists complaining of bleeding gingiva for the last 2 years. Clinically observed: gingiva is edematous, inertly hyperemic, cyanochroic, bleeding during probing. OHI-S = 3.2; CPI = 3; CPITN = 3. Make up a preliminary treatment plan.

Challenge 3. Specify digit quantities of the objective evaluation criteria (indices), corresponding to an unsatisfactory hygiene of mouth cavity and severe stage of gingivitis.

Challenge 4. While determining the GI index, there were revealed: bleeding during probing of papillas, edema, and light hyperemia of marginal gingiva in the area of the main teeth. Identify the severity of inflammation.

STUDY GUIDE FOR PRACTICAL CLASS № 6

Subject of the class: Dental caries. Development, etiology, pathogenesis, epidemiology, classification

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving of cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to study etiology, pathogenesis, epidemiology and classification of dental caries.

Tasks of the class:

1. To study definition of dental caries.
2. To study the classification of dental carries of World Health Organization (1994).
3. To study etiology of dental caries.

4. To study pathogenesis of dental caries.
5. To study pathoanatomy of dental caries.
6. To study epidemiology of dental caries (prevalence rate, severity) in Belarus and other countries.
7. To improve practical skills of examination of a patient with diseases of hard tissues of a tooth.
8. To be able to identify severity of dental caries of patients.

Test questions on the class subject:

1. Definition of dental caries. Modern opinions about development of dental caries (P. Keyes, 1960).
2. Part of different risk factors in development of dental caries: microbes of dental deposit, starches, fluorine in drinking water.
3. Characteristics of saliva and its influence on the dental caries development.
4. Pathoanatomy of dental caries (caries of enamel and caries of dentin).
5. Epidemiology of dental caries. Definitions of prevalence rate and severity of dental caries, level of severity of caries.
6. Classification of dental caries: international (WHO, 1994); clinical-topographic; Black's classification.
7. Risk factors, circumstantially connected with development of dental caries, (social-economic factors; factors connected with general health; epidemiologic factors; clinical signs, representative of excess risk of caries).

Clinical challenges.

Challenge 1. Patient A. of 53 years old came to clinic of operative dentistry for an oral cavity sanitation. During medical history taking it was revealed that he ate a lot of starchy food, brushed teeth once a day, had diabetes and smoked. DMF index = 25, OHI-S = 3.7, CPI = 3.8. Identify the main cariogenic factors of the patient. What is the severity level of caries? What is it necessary to begin the treatment of the patient with?

Challenge 2. A patient came to clinic of operative dentistry complaining of dark spot in the area of tooth 23. According to the patient, it appeared a years and a half ago and have grown insignificantly since then. During examination, in the area of tooth 23, on the buccal-pre cervical surface, there is revealed pigmented yellow-brownish spot. The surface is dull. Probing is pain-free. Thermo test is negative. Percussion is pain-free. Determine a preliminary diagnosis. To which code, according to the International Classification of Diseases, does the disease correspond? How many zones according to histologic structure are distinguished under this disease?

Challenge 3. Patient P. of 23 years old came to clinic of operative dentistry complaining of decay cavities. From anamnesis: the patient brushes teeth irregularly, eats much sweet food, smoke a lot. Often suffers catarrhal diseases. Goes to dentists seldom, only when there is a sharp pain. Last visited to dentist was 3 years ago. CPI = 20 (10 teeth are affected by caries, 6 fillings, 4 teeth are extracted due to aggravated caries). Hygiene of mouth cavity is poor, medium severity of the diseases of periodont. What are the major cariogenic factors of the patient?

Specify the main stages of the pathogenesis of caries? What are recommendations to the patient, taking into consideration the existing cariogenic factors?

Challenge 4. Patient O. of 19 years old, student of college, during dental treatment complained of decay cavities that develop often in spite of everyday teeth brushing. Visits dentist on non-regular basis. Hygiene of mouth cavity is unsatisfactory (OHI-S = 2.0). What risk factors of caries development does the patient have? What additional information would you like to get? What recommendations should be given to the patient?

STUDY GUIDE FOR PRACTICAL CLASS № 7

Subject of the class: Caries of enamel. Clinical manifestations, diagnostic aids, treatment

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving of cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to learn to diagnose and differentiate caries of enamel.

Tasks of the class:

1. To know histologic structure of enamel.
2. To know pathoanatomy of caries of enamel.
3. To be able to get necessary information according to complaints and anamnesis.
4. To identify affected area visually and by tools, to use additional diagnostic aids to confirm a diagnosis.

Test questions on the class subject:

1. The basic diagnostic aids of caries enamel.
2. Methods of detection of incipient caries lesions (visual, vital colouring, selective separation of a tooth).
3. Complaints of a patient with caries of enamel.
4. Clinical picture of caries of enamel.
5. Differential diagnostic of caries of enamel. Treatment.

Clinical challenges.

Challenge 1. During dental examination of a patient dentist supposed caries of enamel on the approximal surface of tooth 25 with remained anatomical contacts with nearby teeth. According to what indirect signs did the doctor suppose this? What clinical and instrumental method can be used for final diagnostic?

Challenge 2. During examination of a patient, dentist had difficulties in diagnostic of caries of enamel on the occlusal surface of tooth 46. That is why, with the help of dental probe, dentist performed stronger probing of the fissures of tooth 46 to reveal stumble of probe. Is it an appropriate diagnostic aid? What does

indicate carious process in this area during visual diagnostic? What instrumental method should be applied in this case?

STUDY GUIDE FOR PRACTICAL CLASS № 8

Subject of the class: Caries of dentine. Clinical picture, diagnostic aids

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving of cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to master methods of examination during diagnostics of caries of dentine, considering etiology, pathogenesis and its clinical signs. To carry out differential diagnostics with other diseases. To know perfectly clinical signs of this disease of hard tissues of tooth.

Tasks of the class:

1. To be able to get information about risk factors that lead to development of affected teeth. If there are complaints, to be able to clarify risk factors.
2. To learn to carry out visual evaluation during examination of local damages of hard tissues of teeth.
3. To be able to use training aids for the patient with further sextant dentition cleaning for diagnostics of affected tooth (etiological treatment).
4. To learn to carry out stages of diagnostic preparing and, considering morphometric exponents after necrotomy, to identify level of unchanged tissues of dentine for examination and diagnosis.
5. To master additional diagnostic tests and carry out differential diagnostics with other diseases.

Test questions on the class subject:

1. Pathologic changes in dentine under fast-developing and slowly-developing forms of caries of dentine.
2. Stages of diagnostic preparing for identification of the damage depth of carious process.
3. Clinical distinctions of different forms of caries and significance of indices of mouth cavity.
4. Basic examination methods under caries of dentine (medium and deep caries).
5. Additional examination methods under caries of dentine (medium and deep caries).
6. Peculiarities of clinical picture and diagnostic of hidden approximal caries.
7. Differential diagnostics of caries of dentine (medium and deep caries).

Clinical challenges.

Challenge 1. Patient M. of 20 years old complained of short term pain from cold that stops after effect of stimuli. From anamnesis: the tooth has been cured of

caries before. The patient not properly motivated by risk factors, doesn't use dental floss and doesn't clean tongue, etc. Clinically observed: carious cavity on the masticatory surface of 1.6 tooth. After motivation interview and first sextant cleaning, there was performed anesthesia. Then, carious cavity was opened, and after necrotomia, there were revealed unchanged tissues in the middle layers of dentine. Probing is stiff. Determine a final diagnosis, carry out differential diagnostics.

Challenge 2. Patient A. of 25 years old complained of short-term pain, immediately stops after effect of stimuli. *St. loc:* on the masticatory surface of tooth 2.6, there is a filling. No marginal gap. After removal of the filling, there was revealed a carious cavity of softened dentine. From anamnesis: the patient visited dentist many times due to different problems, but was never motivated by risk factors. What methods of examination should be used in order to determine a final diagnosis?

Challenge 3. Patient B. came to dentist for preventive examination. Clinically observed: on the contact surface of tooth 3.4, there is a shade under the enamel crest. What should be the actions of doctor to determine a diagnosis?

STUDY GUIDE FOR PRACTICAL CLASS № 9

Subject: Caries of dentine. Treatment methods. Pulp caps

Total term time: 245 minutes.

Plan of the class: Goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to master diagnostics and treatment of caries of dentine (deep caries). To study usage of pulp caps: composition, characteristics and implications.

Tasks of the class:

1. To inculcate practical significance of etiological and pathological treatment of deep caries.
2. To study peculiarities of preparing of caries of dentine (deep caries).
3. To inculcate stages of diagnostics of dentine (deep caries).
4. Agents used as capping materials in treatment: one-component, two-component, of chemical and light hardening.
5. To teach to carry out differential diagnostics with aggravated caries.
6. Selection of filling materials according to a type of restoration, using agents of calcium (the sandwich technique, Bertolleti technique).

Test questions on the class subject:

1. Diagnostics of deep caries of dentine and differential diagnostics with other forms of caries.
2. Classification of medical agents and implications.

3. Goal of use of medical capping materials in treatment of deep caries: one-component, two-component, of chemical light hardening.

4. Agents used as insulating capping materials in treatment of deep caries.

5. Implications and methods of use of materials containing calcium in treatment of deep caries (one-staged).

Clinical challenges.

Challenge 1. Patient K. Of 18 years old complains of sharp short-term pain after effect of cold stimuli and during meals. After removal of stimuli, pain goes away. During interview, it has been found out that the patient is not motivated on hygiene care of mouth cavity. What results of examination and additional methods of examination will help doctor to determine a diagnosis? Enumerate treatment stages.

Challenge 2. Patient P. of 30 years old, no complaints. Patient came for preventive examination and it has been found out that the patient is partially motivated. *Clinician-observed:* on the masticatory surface of tooth 27, there is a decay cavity. After motivation interview and 3rd sextant cleaning, there was performed anesthesia. In order to identify depth of damage, there was carried out diagnostic preparing (opening, widening, necrotomy). After this, there was revealed a level of unchanged tissues in parapulpal layers of dentine. Probing is stiff. What additional methods of examination are necessary to determine a diagnosis? Stages of treatment.

Challenge 3. Patient B. of 45 years old needs prosthodontic treatment: bridgework of 34–37. The patient complains of sharp short-term pain in tooth 37 from cold and food. After removal of irritants, pain immediately goes away. Electroexcitability of pulp — 20 mcA. What additional methods of examination are necessary to determine a diagnosis? Planning and stages of treatment of tooth 37.

STUDY GUIDE FOR PRACTICAL CLASS № 10

Subjects: Diagnostics and treatment of caries of the occlusal surfaces of posterior teeth. Selection of filling material

Total term time: 245 minutes

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to master diagnostic aids and treatment of caries cavities of class I according to Black. To learn to select filling material according to implications for restoration of decay cavities of class I according to Black.

Tasks of the class:

1. To master peculiarities of diagnostics of decay cavities of class I according to Black.

2. To learn to diagnose caries of enamel, caries of dentine in decay cavities of class I according to Black.

3. To learn to select filling material according to implications for restoration of cavities of class I according to Black.

4. To learn to prepare cavities of class I according to Black, considering selected restoration material.

5. To learn to fill decay cavities of class I according to Black (with composite material, glass-ionomer cement).

6. To learn to condition restoration and evaluate its quality.

Tests questions on the class subject:

1. Basic methods of examination of a patient with caries of enamel and caries of dentine of class I according to Black.

2. Additional methods of examination of a patient with caries of enamel and caries of dentine of class I according to Black.

3. Methods of early diagnostics of caries and tactics of dentist.

4. Correspondence to clinical and histological diagnostics of caries of fissures of different damage depth (criteria of K. R. Ekstrand, 1998).

5. Stages of preparing of cavities of class I according to Black.

6. Tools used during preparing of decay cavities of class I according to Black.

7. Selection of material for restoration of cavities of class I according to Black.

8. Criteria of clinical evaluation of restoration quality (evaluation system of restoration quality of USPHS (FDI)).

Clinical challenges.

Challenge 1. After examination (subjective and objective) of patient K. of 20 years old, dentist diagnosed caries of dentine of tooth 37 (medium caries, of class I according to Black). Enumerate treatment stages.

Challenge 2. Patient A. of 20 years old came to dentist with complaints of pain in tooth 16 from thermal irritants and from sweet food. The pain disappears after removal of irritants. *Clinically observed:* on the occlusal surface of tooth 16, there is a decay cavity of medium depth. Probing is felt and percussion is pain-free. Cold test is positive. Determine a diagnosis. What filling material should be used for treatment of tooth 16?

Challenge 3. Patient B. of 30 years old came to doctor with complaints of a decay cavity in tooth 36. After objective examination, dentist diagnosed caries of dentine of tooth 36. Specify the necessary basic and additional methods of examination.

Challenge 4. Patient N. of 50 years old, in tooth 47, there is a filling. Filling material is below the edges of decay cavity, but dentine and lining are not open. Dentist suggested replacing the filling. Evaluate actions of dentist. Is it necessary to replace the filling?

STUDY GUIDE FOR PRACTICAL CLASS № 11

Subject of the class: Diagnostics and treatment of caries of approximal surface of posterior teeth. Contact point, ways of recovery. Selection of filling material

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to know diagnostics and peculiarities of treatment of caries of class II according to Black.

Tasks of the class:

1. To be able to examine patient with caries of class II and diagnose.
2. To be able to choose and apply additional methods of examination to clarify diagnosis and explain acquired results.
3. To be able to prepare decay cavities of class II.
4. To be able to apply sectional matrices while filling decay cavities of class II.
5. To be able to do restoration of decay cavities of class II and do final polishing of restoration.

Test questions on the class subject:

1. Basic and additional diagnostic aids of caries of class II.
2. Clinical picture of caries of enamel and dentine of class II.
3. Peculiarities of diagnostics of hidden cavities of class II.
4. What is contact point and what is its physiological role? Types of contact points and requirements to them.
5. Stages of preparing of decay cavities of class II.
6. Peculiarities of adhesive preparing of decay cavities of class II.
7. Methods of restoration of contact point. Types sectional matrices
8. Basic elements of prepared cavities of class II.
9. Possible ways of access to decay cavities of class II.
10. Methods of preparing and filling of cavities of class II, including 2 contiguous cavities.
11. Enumerate filling materials used for restoration of cavities of class II, requirements to these filling materials.

Clinical challenges.

Challenge 1. Patient V. came to dentist with complaints about short-term pain in a tooth of upper jaw to the right. The pain appears after taking cold food. Clinically observed: on distal surface of tooth 26, there is a decay cavity of medium depth with light softened dentine. Probing of walls is painful. Positive reaction to thermal stimuli. Pain disappears immediately after removal of stimulus. Determine a diagnosis. Make up a treatment plan.

Challenge 2. Patient V. came to dentist with complaints of short-term pain in a tooth of upper jaw to the right. The pain appears after taking cold and sweet food. Clinician-observed: on approximal surfaces of teeth 25 and 26, there are decay cavities of medium depth with light softened dentine. Probing of walls is painful. Positive reaction to thermal stimuli. Electroexcitability of pulp is 5 mcA. Specify stages of treatment of decay cavities.

Challenge 3. Patient A. of 21 years old came to dentist complaining of pain on approximal surfaces of tooth 15 and 16 from thermal stimuli and from sweet food. Pain disappears fast after their removal. Clinically observed: on approximal surfaces of tooth 15 and 16, there is a decay cavity of medium depth. Probing is felt. Percussion is pain-free. Cold test is positive. Determine a diagnosis and treatment plan.

STUDY GUIDE FOR PRACTICAL CLASS № 12

Subject of the class: Diagnostics and treatment of caries in the cervical areas of teeth. Selection of filling material

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to be able to carry out diagnostics and treatment of caries of class V according to Black.

Tasks of the class:

1. To examine patients with caries of class V according to Black.
2. To carry out diagnostics of caries of cement.
3. To choose and apply additional methods of examination and analyse the obtained results.
4. To carry out differential diagnostics of caries of class V according to Black.
5. To prepare cavities of class V according to Black.
6. To select filling material for restoration class V according to Black.

Test questions on the class subject:

1. Clinical picture of caries of enamel of class V according to Black. Basic and additional diagnostic aids.
2. Differential diagnostics of caries of enamel and dentine of class V according to Black.
3. Principles of treatment of caries of enamel of class V according to Black.
4. Stages of preparing of decay cavities of class V according to Black.
5. Modern principles of adhesive preparing of decay cavities in the cervical areas of teeth.

6. Types of filling material used for restoration of decay cavities of class V according to Black. Explanation of filling material selection.

Clinical challenges.

Challenge 1. Patient M. came to dentist because of an esthetic defect of teeth 11 and 21. St. loc.: in the neck area of teeth 11, 21, there are decay cavities with edges of enamel hanging over. Probing is slightly felt in the area of defect. What methods of examination is it necessary to apply to determine a diagnosis? Determine a diagnosis, choose filling material.

Challenge 2. Examining patient K. of 22 years old, in the neck area of teeth 34, 35, 44, and 45, there were revealed parts of enamel white in colour, plain without defects. OHI-S = 1.8; GI = 0.7. Suggest methods of examination to clarify the diagnosis and specify treatment method.

Challenge 3. Patient S. of 32 years old came to doctor with complaints of short-term pain while brushing teeth. St. loc.: OHI-S = 1.0; GI = 0.5. During examination, there were revealed opened tooth roots by 13, 23, and 2 mm. In the neck area of teeth 13 and 23, there are decay cavities of small depth. Dentine is softened and pigmented. Probing is painful in the area of floor and walls of decay cavity. Determine a diagnosis; explain treatment methods and selection of filling material.

STUDY GUIDE FOR PRACTICAL CLASS № 13

Subject of the class: Possible mistakes and complications in diagnostics and treatment of dental caries

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to make the students acquainted with possible mistakes in diagnostics and treatment of caries, preventive measures and treatment of these complications.

Tasks of the class:

1. To study possible mistakes and complications in diagnostics of caries.
2. To study possible mistake in treatment of caries.
3. To study possible complications in treatment of caries.
4. To know preventive measures and treatment of the complications in diagnostics and treatment of caries.

Test questions on the class subject:

1. Possible mistakes in diagnostics of caries of enamel and concomitant complications. Specify the reasons.
2. Possible mistakes in diagnostics of caries of dentine and concomitant complications. Specify the reasons.

3. Mistakes and complications during preparing of decay cavities. Specify the reasons and ways of correction.

4. Mistakes and complications in the process of filling of decay cavities. Specify the reasons and ways of correction.

5. The concept of medical error and factors that lead to them.

6. Deontological problems connected with mistakes in diagnostics and treatment of caries.

7. Actions of dentist who made a medical error.

8. Mistakes and complications in the process of filling of decay cavities with different materials.

9. Mistakes at the stage of polishing and grinding of a filling.

Clinical challenges.

Challenge 1. Patient K. of 21 years old, who doesn't have any somatic disease, was diagnosed with caries of dentine of tooth 46. Decay cavity of class 1 according to Black was prepared under regional anesthesia with back truncated cone-shaped dental drill. During preparing, on the floor of decay cavity, dentist saw a drop of blood and connection with dental cavity. What are the reason of the complication and way of correction?

Challenge 2. Patient N. came to dentist with complaints of decay cavity in tooth 36. St. loc.: on the masticatory surface of tooth 36, there is a decay cavity of medium depth, of pigmented dentine. Probing of walls in the area of amelodental junction and of floor of decay cavity is pain-free. Thermal test is negative. Percussion is pain-free. Preparation test is negative. The tooth is a bit changed in colour. Dentist diagnosed carries of dentine, prepared decay cavity, put a lining and filling of composite material. What are the mistakes doctor made during diagnostics? What are possible complications of such a treatment?

Challenge 3. Patient M. had tooth 14 treated because of deep caries. Next day, the patient came to doctor complaining of sharp spontaneous pulsating pain extended into ear. Determine a diagnosis and specify possible reasons of the complication.

STUDY GUIDE FOR PRACTICAL CLASS № 14

Subject of the class: Dental caries prognostication methods

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to master modern dental caries prognostication methods.

Tasks of the class:

1. To study methods of identification of risk factors of caries.

2. To study the method of clinical prediction of caries (Leus, 1990).

3. To study the method of prediction (prognostication) of caries according to the determining CIL index, Streptococcus mutans, and buffer capacity of saliva.

4. To study evaluation methods of risk of new carious damages using interactive software “Carogram”.

Test questions on the class subject:

1. Definitions of medical prognosis, prognostication, risk, risk factors.

2. Methods of identification of risk factors of caries.

3. CIL index for prognostication of caries development. Advantages, disadvantages, accuracy of prognosis.

4. Complex evaluation of risk factors of caries through the interactive software “Cariogram”. Sectors of diagram and evaluated factors.

5. Practical importance of methods of prognostication of caries and evaluation of risk of caries.

Clinical challenges.

Challenge 1. DMF index of patient K. (20 years old) is 18. Identify CIL and explain it. What will be the DMF index in 10 years, given that the affect of risk factors don't change within this period?

Challenge 2. Patient A. of 22 years old came to dentist because of a cavity in tooth 21. From anamnesis: the patient takes antihistamines because of allergy, brushes teeth twice a day with different tooth pastes, has snacks during a day (6–7 times, sometimes even 8) because of student lifestyle, visits dentist when there is a cavity or pain in a tooth. Revealed during examination: DMF = 19, OHI-S = 0.9, many fillings with defect of marginal gap. What additional examination methods can be applied to prognosticate caries and motivate the patient?

Challenge 3. What information should be input in the interactive software “Cariogram” to evaluate your risk of caries development? How should the obtained data be explained?

STUDY GUIDE FOR PRACTICAL CLASS № 15

Subject of the class: Prevention of caries among adults

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to study programs and methods of prevention of caries among adults.

Tasks of the class:

1. To study scientific aspects of prevention of dental caries.

2. To study methods of caries prevention.

3. To evaluate importance of hygiene of mouth cavity in the development of caries.

4. To evaluate importance of diet of the development of caries.
5. To evaluate importance of fluorides in the prevention of caries.
6. To study basic methods of prevention of caries among adults, which are recommended by the National Prevention of Caries and Periodontal diseases Program.

Test questions on the class subject:

1. Methods of caries prevention.
2. Hygiene of mouth cavity as a method of prevention of caries and diseases of periodont among adults.
3. Use of fluorides in caries prevention among adults.
4. Balanced diet in the prevention of caries among adults
5. Planning of individual prevention of caries among adults.
6. Mass prevention of caries. Main recommendations of the National Prevention of Caries and Periodontal diseases Program among Population of Belarus.
7. Efficiency evaluation of preventive measures among adults.

Clinical challenges.

Challenge 1. Patient K. of 20 years old (lives in Minsk) came to dentist complaining of decay cavities in teeth 17, 27, and 21. The patient brushes teeth irregularly with the Lesnaya toothpaste (without F⁻), eats 8 times a day (5 snacks + 3 main meals). Hygiene of mouth cavity according to OHI-S index is 2.5. Suggest a caries prevention plan.

Challenge 2. Patient N. of 24 years old came to dentist with a complaint of decay cavity in tooth 21. DMF index is 10, hygiene of mouth cavity according to OHI-S index is 2.1. Condition of periodontal tissues according to CPI index is 2.5. After examination the patient was diagnosed with caries of dentine of tooth 21. Explain the indices. Make up a plan of preventive measures for the patient.

Challenge 3. Patient N. of 29 years old came to dentist for preventive examination. DMF = 9, OHI-S = 1.5, CPI = 1.5. The patient was born and lives in Minsk. Uses fluorine containing toothpaste regularly, has snacks often, likes sweet food. Explain the indices. What risk factor is the key one here in caries prevention? What methods and measures of prevention of caries and diseases of periodont will you recommend to the patient?

STUDY GUIDE FOR PRACTICAL CLASS № 16

Subject of the class: Diseases of hard tissues of teeth that develop before eruption (developmental disorders), mottled teeth, hypoplasia

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to know etiology, pathogenesis, differential diagnostics, prevention, and treatment of mottled teeth, hypoplasia of enamel, and dental fluorosis. To be able to make up an examination and treatment plan of a patient with enamel development defects.

Tasks of the class:

1. To study the K100 section of the international classification (ICD-10, 1995).
2. To study etiology, pathogenesis, and clinical signs of mottled teeth and hypoplasia of enamel.
3. To study etiology, pathogenesis, and clinical signs of dental fluorosis.
4. To study principles and methods of diagnostics and differential diagnostics of эндемической крапчатости, hypoplasia of enamel, and dental fluorosis.
5. To learn to make up an examination and treatment plan of a patient with development disorders of hard dental tissues.

Test questions on the class subject:

1. The K100 section. (ICD-10, 1995).
2. Mottled teeth. Etiology, pathogenesis, clinical picture, diagnostics, and differential diagnostics. Treatment methods and prevention.
3. Hypoplasia of enamel of teeth. International terminology. The DDE index (FDI, 1982). Prevalence of enamel development defects in Belarus and other countries.
4. Hypoplasia of enamel of teeth. Etiology, pathogenesis, clinical picture, diagnostics, and differential diagnostics. Treatment methods and prevention.
5. Dental fluorosis. Etiology, pathogenesis, clinical picture, diagnostics, and differential diagnostics. Treatment methods and prevention.
6. Classification of dental fluorosis (WHO (Muller), Dean's index).
7. Regions of endemic dental fluorosis in the world.

Clinical challenges.

Challenge 1. Patient K. Of 22 years old was born and grew up in Tajikistan. The patient came to dentists complaining of esthetic defect in the area of upper central teeth. Clinically observed: OHI-S = 1.5, DMF = 4. On the vestibular surface of teeth of upper and lower jaws, there are numerous bright white spots of various sizes without distinct border. The enamel is shiny and plain. Determine a diagnosis according to the international classification (ICD-10, 1995). What treatment can be suggested to the patient?

Challenge 2. Patient D. Of 25 years old has been living in Belarus since childhood. The patient came to dentist with complaints of esthetic defects in the area of upper and central upper incisors. Clinically observed: OHI-S = 1.8, DMF = 6. On the vestibular surface of upper incisors, on the cusps of first molars, there are numerous white spots without distinct border with surrounding enamel. The enamel is shiny and plain. Determine a diagnosis according to the international classification (ICD-10, 1995). What treatment can be suggested to the patient?

Challenge 3. Patient M. Of 25 years old has been living in Belarus since childhood. Came to dentists for preventive examination. Clinically observed:

OHI-S = 1.5; DMF = 6. On the vestibular surface of upper premolars, to the left and right sides in the gingival margin, there are white spots of strip shape with indistinct borders. The enamel is shiny and plain. What additional methods of examination should be applied here to clarify the diagnosis? Determine the diagnosis according to the international classification (ICD-10, 1995).

Challenge 4. Patient N. Of 19 years old came to dentists with complaints of defects of enamel on the lower central teeth. Clinically observed: OHI-S = 1.9; DMF = 5. On the vestibular surface of lower incisors, in the middle third part of the tooth crown there are defects of enamel a groove like with opened dentine. The enamel is plain and shiny. During probing, it is revealed that walls and floor of the defects are stiff. Determine a diagnosis according to the international classification (ICD-10, 1995). What treatment can be suggested to the patient?

STUDY GUIDE FOR PRACTICAL CLASS № 17

Subject of the class: Diseases of hard dental tissues that develop after eruption

Total term time: 245 minutes.

Plan of the class: goals and tasks — 5 minutes, asking test questions on the class subject — 45 minutes, clinical analysis and attendance of patients — 145 minutes, solving cases — 30 minutes. In every 90 minutes of class, there is a 10-minute break ($2 \times 10 = 20$ minutes).

Goal of the class: to study etiology, pathogenesis, diagnostics, differential diagnostic of non-carious damages of hard tissues of teeth that develop after eruption of teeth (erosion, attrition, abrasion), international and national classifications. To master the basic and additional methods of examination of hard dental tissues with non-carious damages.

Tasks of the class:

1. To know international classification of diseases of hard tissues of teeth.
2. To know etiology and pathogenesis of erosion.
3. To know etiology and pathogenesis attrition, abrasion, erosion, hyperesthesia of hard dental tissues.
4. To be able to make up a plan of examination of a dental patient with non-carious damages that occur after eruption of teeth, using the basic and additional methods.
5. To make up a plan of treatment of patients with damages of hard dental tissues that occur after eruption and to be able to evaluate efficiency of treatment of non-carious damages that occur after eruption.

Test questions on the class subject:

1. Increased wear (attrition) of teeth. Etiology, pathogenesis.
2. Clinical signs of attrition of hard dental tissues. Diagnostic, differential diagnostics. Treatment, prevention. (ICD-KO3.0)
3. Abrasion of teeth. Etiology, pathogenesis.

4. Abrasion of teeth. Clinical picture, diagnostics, differential diagnostic. Principles of treatment, prevention (ICD-KO3.1)
5. Erosion of hard dental tissues. Etiology, pathogenesis.
6. Erosion of hard dental tissues. Clinical picture, diagnostics, differential diagnostics. Treatment. Prevention (ICD-KO3.2).
7. Hyperesthesia. Classification. Etiology, pathogenesis.
8. Hyperesthesia of hard dental tissues. Clinical signs, diagnostics. Principles of treatment, prevention.

Clinical challenges.

Challenge 1. Patient of 36 years old came to dentist complaining of pain from cold and during teeth brushing in the anterior area of teeth of lower jaw. The pain has been afflicting for a month.

Clinically observed: OHI-S

1/0	0/0	1/0
1/0	0/0	1/0

In the area of front teeth of both jaws, there is a decrease of hard dental tissues within enamel, wedge-shaped in the gingival margin. The defect surface is plain. Probing is felt. Determine a diagnosis. Put on treatment; give recommendations on the mouth cavity care.

Challenge 2. Patient V. of 43 years old came to dentist complaining of pain from cold, sour, and drawing of mouth. From anamnesis: the patient has been working at the refrigerator factory for more than 20 years.

Clinically observed: OHI-S

1/2	1/2	1/2
1/2	1/3	1/2

In the area of the tooth 12 of upper jaw to the left, on the vestibular surface, there is a lesion of hard dental tissues a saucer form. The surface is plain. Probing is painful. Determine a diagnosis. Put on treatment and give recommendations on the mouth cavity care and nutrition.

Challenge 3. Patient of 24 years old came to dentist with complaints of esthetic defect in the front area on lower jaw, short-lasting pain from cold within 6 months.

Clinically observed: OHI-S

1/0	0/0	1/0
1/0	1/0	1/0

On teeth 13, 12, 11, 21, 22, 23, there are porcelain fused metal crowns that were placed 2 years ago. Occlusion is direct. On the cutting edge of teeth 43, 42, 41, 31, 32, 33, there is decrease of enamel. Under affect by thermal stimulus in the area of teeth 43, 42, 41, 31, 32, 33, there occurs a short-lasting pain. Determine a diagnosis. Make up a treatment plan.

THERAUPEUTIC DENTISTRY 3RD YEAR 6TH SEMESTER

PRACTICAL LESSONS MODULE

Number of the class	Subject of the class	Individual work
The use of materials in dentistry		Review of scientific and professional literature, preparation of the written paper and carrying on scientific investigation
1	Minimal invasive methods of tooth operative treatment	
2	Materials for pulp capping. Clinical usage peculiarities	
3	Clinical usage peculiarities of amalgam in the tooth restoration	
4	Clinical peculiarities of dental composites usage in tooth restoration	
5	Methods of adhesive preparation for tooth restoration	
Endodontics		
6	Acute pulpitis. Clinical picture, diagnostic aids	
7	Chronic pulpitis. Clinical picture, diagnostic aids	
8	Treatment of pulpitis under local anesthesia. Indications. Contraindications. Stages of treatment	
9	Treatment of pulpitis with devitalising agents. Indications. Contraindications. Stages of treatment	
10	Acute apical periodontitis. Clinical picture, diagnostic aids. Emergency aid	
11	Chronic apical periodontitis. Clinical picture, diagnostic aids	
12	Mechanical root canals treatment. Instructions on how to work with endodontic instruments in the clinic	
13	Techniques of root canal preparation. Determination of root canals length in the clinic	
14	Root canal treatment with medications. Medicaments for intracanal therapy in the clinic	
15	Techniques of root canals obturation. Medications for filling root canals	
16	Evaluation of treatment quality in endodontics	
17	Mistakes and complications when diagnosing and treating pulpitis and apical periodontitis, preventive measures	

STUDY GUIDE FOR PRACTICAL CLASS № 1

Subject of the class: Minimal invasive methods of tooth operative treatment

Total term time: 245 minutes.

Goal of the class: to know minimal invasive methods of tooth operative treatment.

Tasks of the class:

1. To study indications of tooth operative treatment use.
2. To study the dental caries ART-method.
3. To study the tunnel preparation method in dental caries treatment.
4. To study the invasive fissure sealing technique.
5. To study the prophylactic filling method.
6. To be able to determine indications for minimal invasive dental caries treatment and practise it.

Test questions on the class subject:

1. Minimal invasive dentistry as a priority direction of the contemporary medicine.
2. Give a definition of the term “dental caries minimal invasive treatment”.
3. Invasive fissure sealing. Indications, procedure, instruments, sealing materials.
4. Advantages and disadvantages of minimal invasive preparation for dental caries treatment.
5. Prophylactic filling. Indications. Procedure. Instruments, filling materials.
6. ART-method. Indications. Procedure. Instruments, filling materials.
7. Tunnel preparation. Procedure. Instruments, filling materials.

Clinical challenges.

Challenge 1. A 25 year- old patient complains of pain in tooth 15 after eating sweets. Objectively: on the distal surface of tooth 15 there is a grey shadow (tooth tissues are grey). Vertical tooth percussion is painless. On the dental X-ray: caries cavity is situated on the proximal surface within the outer layer of dentine. Determine a provisional diagnosis. Choose access to the cavity, preparation method and filling material.

Challenge 2. Patient K., 52 years old, refers to the dentist for the oral cavity hygiene. In the past medical history: recently suffered a stroke. Diagnosis: Dentin caries of teeth 46, 47. What are the most reasonable methods of treatment in this clinical situation? What instruments and materials are necessary to carry out this method?

Challenge 3. Patient A., 20 years old. The dentist is planning to carry out invasive sealing of tooth 28 and prophylactic filling of tooth 37. What instruments and filling materials are needed to carry out these treatment methods? What is necessary to advise the patient after treatment?

Challenge 4. Patient, 19 years old. During the dentin caries treatment of tooth 14 on proximal surface, the dentist uses the tunnel preparation method. Caries in-

tensity in this patient is 18 (DMF = 18). Oral hygiene is insufficient. The patient has frequent snacks and a carb-dominant diet; he doesn't pay attention to fluoride content when choosing toothpaste. What can long-term results of restoration be in this situation?

STUDY GUIDE FOR PRACTICAL CLASS № 2

Subject of the class: Materials for pulp capping. Clinical usage peculiarities

Total term time: 245 minutes.

Goal of the class: to improve knowledge and skills of dental filling materials clinical usage as a lining material.

Tasks of the class:

1. To deepen knowledge of composition and properties of liners.
2. To study advantages and disadvantages of dental lining materials.
3. To improve skills of dental linings preparation and application into the carious cavity.
4. To study the skill of dental lining materials usage.
5. To study different ways of pulp capping during the carious cavity restoration.
6. Clinical profile of GIC as a liner.

Primary function of luting and lining GIC.

Test questions on the class subject:

1. Function of dental lining.
2. Dental lining materials requirements.
3. Indications for lining dental material use. Rules of application.
4. Classification of liners.
5. Composition, features and peculiarities of zinc-oxypolyphosphate cement clinical usage.
6. Composition, features and peculiarities of polycarboxylate cement clinical usage.
7. Composition and features of lining GIC.
8. Peculiarities of lining GIC clinical usage.

Clinical challenges.

Challenge 1. Patient T. Diagnosis: dentin caries of tooth 25, Class II (Black). Treatment: the carious cavity is prepared, lining is applied, and the carious cavity is filled with composite. Edge of the carious lesion is lower, than gingival margin. Choose a lining material.

Challenge 2. Patient M. is diagnosed with dentin caries of tooth 47. In the dental office only adhesive-to-enamel system is available. To what extent should the lining be applied? Name lining materials which can be used in this situation.

Challenge 3. On examination, the dentist diagnoses caries of dentin of tooth 16. The carious cavity is prepared (Class I (Black)) during the first visit and

filled with GIC (Aqua Ionobond). The dentist appoints time of next visit on the following day in order to fill the cavity with a composite. Evaluate the dentist's action. Is the treatment plan correct?

STUDY GUIDE FOR PRACTICAL CLASS № 3

Subject of the class: Clinical usage peculiarities of amalgam in the tooth restoration

Total term time: 245 minutes.

Goal of the class: to know indications and working procedure with contemporary amalgam in the dental therapy.

Tasks of the class:

1. To study composition and properties of amalgam.
2. To study features of contemporary amalgam.
3. To study carious cavity preparation method for amalgam restoration.
4. To study the modeling of amalgam filling.

Test questions on the class subject:

1. Terminology when using amalgam.
2. Principles of amalgam classification.
3. Composition and features of different types of amalgam.
4. Advantages and objectionable features of amalgam.
5. Indications and contraindications for amalgam use.
6. Procedure of classical amalgam use.
7. Procedure of adhesive amalgam use.
8. Amalgam utilization. Human health effects of amalgam. Environmental effect.
9. Failures and complications when using amalgam. Ways of control.

Clinical challenges.

Challenge 1. After the preparation of tooth 36, a mesioocclusal-distal carious cavity is detected; the hard tooth tissue decrease is 1/2 of intercusp distance. Choose the optimal filling material. Justify the choice.

Challenge 2. A patient reports the filling falling out. Tooth 27 is half-destroyed, the distal surface is absent. The dental X-ray: three root canals are obturated a depth to physiological narrowing. The patient has neglected an artificial crown setting. As an alternative there was suggested an amalgam filling with adhesive technique using. What is the point of this technique? What materials are used in this technique? Term the working stages of adhesive technique?

Challenge 3. A patient reports multiple tooth crown defects. OHI-S = 2.1; CPI = 2.5. The patient is unmotivated. Professional oral hygiene wasn't carried out. St. Localis: In teeth 16, 17, 25, 26, 36, 46, 47 there are vast carious cavities with implication of several surfaces. What filling material is indicated in this case? Justify the choice of filling material and term its advantages.

STUDY GUIDE FOR PRACTICAL CLASS № 4

Subject of the class: Clinical peculiarities of dental composites usage in tooth restoration

Total term time: 245 minutes.

Goal of the class: to improve knowledge and skills of choice and work with dental composites.

Tasks of the class:

1. To study composition, features and indications for dental composite use.
2. To work out working technique with dental composites and compomers.
3. To study possible failures and complications of dental composite usage.
4. To study ways of control and correction of possible complications.

Test questions on the class subject:

1. Classification of dental composites. Concept of flow and packable composites.
2. Benefits and harm of dental composites. Advantages and disadvantages of dental composites over other groups of filling materials.
3. Compomers. Composition, features, indications for use.
4. Definition of indications for dental composites and compomers use.
5. Common rules and stages of working with dental composites and compomers.
6. Different techniques of dental composites usage(closed and open sandwich technique, the Bertholotti method)
7. Quality standards of dental composite fillings.
8. Failures and complications when working with dental composites.
9. Prevention of complications when working with dental composites.

Clinical challenges.

Challenge 1. Patient, 34 years old, complains about having of carious cavity on the proximal-distal tooth 26 surface. OHI-S = 2.7; CPI = 4.0; DMF = 24. Basing on objective and subjective results, dentin caries of tooth 26 (Class II (Black)) is diagnosed. Compose a treatment plan. What methods of preparation and technique will you use?

Challenge 2. Patient, 21 years old, complains about having a carious cavity in the neck area of tooth 15. OHI-S = 1.8; CPI = 3; DMF = 17. Basing on objective and subjective results, caries of dentin of tooth 15 (Class V (Black)) is diagnosed. Compose a treatment plan. What filling materials are most optimal for restoration of this carious cavity?

Challenge 3. During the restoration of tooth 36 (caries of dentin, Class V (Black)) the dentist uses a total-etching technique; next he applies the 5th generation adhesive system. But after the polymerization of bond, saliva gets into the cavity. What should the further actions of the dentist be?

STUDY GUIDE FOR PRACTICAL CLASS № 5

Subject of the class: Methods of adhesive preparation for tooth restoration

Total term time: 245 minutes.

Goal of the class: to master skills when working with contemporary adhesive systems in dental therapy.

Tasks of the class:

1. To study the terminology in the field of adhesive dentistry.
2. To study principles of contemporary adhesive systems classification.
3. To know advantages and disadvantages of contemporary adhesive systems.
4. To be able to work with different types of adhesive systems.

Test questions on the class subject:

1. Terminology in the adhesive dentistry.
2. Principles of classification of contemporary adhesive systems, requirements to adhesive systems.
3. Composition of contemporary adhesive systems.
4. Properties of adhesive systems and the influence of adhesion on the tooth hard tissues.
5. Positive and negative properties of adhesive systems.
6. Indications and contraindications for adhesive systems usage during tooth restoration.
7. Formation of hybrid layer at the dentine and enamel junction.
8. Stages of work with the 4th and 5th generation adhesive systems.
9. Stages of work with the 6th and 7th generation self-etch adhesive systems.
10. Failures and complications when working with adhesive systems
11. Prevention of complications after adhesive system use.

Clinical challenges.

Challenge 1. The patient complains of a sharp and transitory pain when exposed to cold and when cleaning anterior mandibular teeth. St. Localis: OHI-S = 0.4; all the teeth of the 5th sextant are intact. Gingival recession is 1/23–1/2 of root length. The gingiva has no inflammation signs. The probing of teeth root surfaces is painless. EPT = 6 mcA. The dentist suggested covering the exposed root with an adhesive system. What adhesive systems are used for this? Term the working stages.

Challenge 2. The patient complains of a sharp and transitory pain in tooth 46 when biting; the pain appeared just after the caries treatment of this tooth. Anamnesis: carious cavity in tooth 46 is within the mantle dentin; there is no pulp pathology. For tooth restoration, hybrid composite and the 5th generation adhesive system are used. St. Localis: OHI-S = 0.5; There is a qualitative filling in tooth 46. Sharp transitory pain to cold, probing of the filling margin and percussion are painful. Come up with a decision of the problem.

Challenge 3. The patient complains of a sharp and transitory pain when cleaning the teeth. St. Localis: there are wedge-shaped defects of enamel and dentin at the cervical areas of teeth 34, 35, 36; the tooth hard tissues are tight and

shining; probing is painless. The dentist is going to restore the defects with dental curing light composite using the self-etching adhesive system. Term the features of adhesive preparation and adhesive system working stages.

Challenge 4. On the stage of adhesive system application the carious cavity is contaminated with saliva. Come up with a decision of the problem.

Challenge 5. During the carious cavity restoration, after the adhesive system polymerization, the carious cavity is contaminated with blood. Come up with a decision of the problem.

STUDY GUIDE FOR PRACTICAL CLASS № 6

Subject: Acute pulpitis. Clinical picture, diagnostic aids

Total term time: 245 minutes.

Goal of the class: to know clinical picture, diagnostics and differential diagnostics of acute types of pulpitis.

Tasks of the class:

1. To study clinical signs of acute forms of pulpitis.
2. To study basic and additional diagnostic aids of acute forms of pulpitis.
3. To learn to examine a patient with acute pulpitis.
4. To learn to carry out differential diagnostics of acute pulpitis with other medical emergencies.

Test questions on the class subject:

1. Advantages and disadvantages of classifications sections of acute forms of pulpitis (ICD-10 - the 10th revision of the International Statistical Classification of Diseases and Related Health Problems, 1997; Gofung E. M., 1927). Options of implementation in the clinical picture, correlation.

2. Give the definition of acute pulpitis, enumerate external and internal causative factors aiding to its progression.

3. Clinical picture of acute pulpitis (ICD-10).

4. Clinical picture of suppurative pulpitis (ICD-10).

5. Diagnostics of acute forms of pulpitis. Basic and additional diagnostic aids of a patient.

6. Differential diagnostics of acute forms of pulpitis (ICD-10).

Clinical challenges.

Challenge 1. Patient K., 25 years old, complains of spontaneous, attack-like pain in the area of tooth 34. The pain develops without influence of exogenous irritants with extensive bright intervals. The tooth has been afflicting for 24 hours. There is also a long-lasting pain to temperature stimuli that doesn't stop after the stimuli are removed; the patient feels pain at night. During examination of tooth 34, there is a perceptible deep cavity with softened pigmented dentin that doesn't reach dental cavity. Probing is painful in one place, at the bottom of decay cavity, closer to the pulp horn. Suggest additional examination methods (if necessary). Determine a probable diagnosis. Carry out differential diagnostics.

Challenge 2. Patient B., 40 years old, complains of continuous, spontaneous pain of a tearing, throbbing character in the area of the upper jaw teeth to the right. There is pain at night. Pain irradiates to the temporal region and ear. The patient is tortured by pain episodes and is unable to describe his condition and identify the aching tooth. Pain becomes more severe when affected by something hot. Cold stimulus stops a pain episode to some extent. Objectively: surfaces of all upper jaw teeth to the right are macroscopically intact. Nevertheless, under intact dental enamel of marginal ridge in the area of tooth 1.6 and tooth 1.7, a gray shadow is observed. Suggest additional examination methods (if necessary). Determine a probable diagnosis. Carry out differential diagnostics.

Challenge 3. Patient A., 28 years old, is undergoing necrectomy with dental drill in tooth 2.6 because of deep dentin caries. During this process, the doctor does not use water cooling. Next day, the patient complains of attack-like, spontaneous pain in the area of tooth 2.6 with irradiation to temporal region. There is also pain to temperature stimuli that does not stop for long after having been removed. Evaluate the doctor's actions. What complication can be relevant in this case? What disturbing factor was the reason for the development of the pathological process?

Challenge 4. Person H., 18 years old, complains of acute spontaneous paroxysmal pain in the tooth that irradiates to the right eye and temporomandibular area. Objectively: there is a deep carious cavity near parapulpal dentin in tooth 2.7; the dentin is bright and soft. Probing of bottom is sharp and painful; positive reaction to cold. Determine the diagnosis according to ICD-10.

Challenge 5. The patient complains of temporary pain in the teeth of the lower jaw on the left side lasting for twenty-four hours. Pain is radiating to the ear, back of head, and also increases when eating cold and hot food. Objectively: there is a deep carious cavity on the medial surface in tooth 3.6. Probing at the bottom is sharp and painful. Determine the diagnosis according to ICD-10.

Challenge 6. A woman, 40 years old, complains of short lasting, spontaneous pain, as well as pain after taking hot and cold food in the area of tooth 4.6. On the occlusal surface of tooth 4.6 there is a carious cavity filled with softened dentin. Probing of the bottom of the carious cavity is painful. Reaction to thermal irritants is positive and does not disappear after they are removed. EPT is 25 mcA. Determine the diagnosis according to ICD-10.

Challenge 7. Throbbing pain in case of acute pulpitis is caused by increase in hydrostatical pressure inside the pulp chamber; irritation of the nerve endings by the product of anaerobic glycolysis; periodical shunting of blood flow through arteriolo-venular anastomosis.

Challenge 8. A patient (43 years old) complains of spontaneous, paroxysmal night time pain with a long painless period in the upper jaw on the right side. These complains arise in case of:

- K04.00 Initial (hyperaemia) pulpitis;
- K04.01 Acute pulpitis;
- K04.02 Suppurative [pulpal abscess] pulpitis;

- K04.03 Chronic pulpitis;
- K04.04 Chronic, ulcerative pulpitis;
- K04.05 Chronic, hyperplastic [pulpal polyp] pulpitis.

Challenge 9. Male (24 years old) complains of spontaneous, paroxysmal night time pain in the upper jaw on the right side with irradiation to the branches of n. trigeminus with short painless periods. These complaints arise in case of:

- K04.00 Initial (hyperaemia) pulpitis;
- K04.01 Acute pulpitis;
- K04.02 Suppurative [pulpal abscess] pulpitis;
- K04.03 Chronic pulpitis;
- K04.04 Chronic, ulcerative pulpitis;
- K04.05 Chronic, hyperplastic [pulpal polyp] pulpitis.

Challenge 10. The patient, 23 years old, complains of long term pain (10–20 min) in tooth 1.1 which arises after exposure to thermal and chemical irritants, and the retention of food in the interdental spaces of upper incisors. Periodic acute night time pain. He first felt the pronounced pain in tooth 1.1 three days ago. Objectively: on the medial surface of tooth 1.1 there is a carious cavity within the circumpulpal dentin. The dentin of the walls and bottom is softened. The color of dentin is pale yellow. The probing of the bottom is very painful. Percussion of tooth 1.1 is painless. During thermal diagnostics of tooth 1.1 pronounced long-term pain was observed. EPT (the pulp electroexcitability test) is 18 mcA. These complaints and the result of objective examination are typical of:

- K04.00 Initial (hyperaemia) pulpitis;
- K04.01 Acute pulpitis;
- K04.02 Suppurative [pulpal abscess] pulpitis;
- K04.03 Chronic pulpitis;
- K04.04 Chronic, ulcerative pulpitis;
- K04.05 Chronic, hyperplastic [pulpal polyp] pulpitis.

Challenge 11. The patient, 43 years old, complains of transient pain in the upper right premolars which suddenly occurred twice during the past day. The patient first felt short term pain in tooth 1.5 after exposure to thermal irritants 8 months ago. Objectively: on the medial surface of tooth 1.5 there is a carious cavity within the circumpulpal dentin. The dentin of the walls and bottom is softened. The color of dentin is pale yellow. The probing of bottom is very painful. Percussion of tooth 1.5 is painless. During thermal diagnostics of tooth 1.5 there was observed pronounced pain which lasted more than 10 minutes. EPT (the pulp electroexcitability test) is 17 mcA. These complaints and the result of objective examination are typical of:

- K04.00 Initial (hyperaemia) pulpitis;
- K04.01 Acute pulpitis;
- K04.02 Suppurative [pulpal abscess] pulpitis;
- K04.03 Chronic pulpitis;
- K04.04 Chronic, ulcerative pulpitis;
- K04.05 Chronic, hyperplastic [pulpal polyp] pulpitis.

STUDY GUIDE FOR PRACTICAL CLASS № 7

Subject: Chronic pulpitis. Clinical picture, diagnostic aids

Total term time: 245 minutes.

Goal of the class: to know clinical picture, differential diagnostics of chronic forms of pulpitis.

Tasks of the class:

1. To study clinical signs of chronic forms of pulpitis.
2. To learn to carry out diagnostics of chronic forms of pulpitis according to subjective and objective data.
3. To learn to carry out differential diagnostics of chronic forms of pulpitis.
4. To learn to examine a patient with chronic pulpitis.

Test questions on the class subject:

1. Classifications of chronic forms of pulpitis (ICD-10 — the 10th revision of the International Statistical Classification of Diseases and Related Health Problems, 1997; Gofung E. M., 1927). Comparison of classifications.
2. Plan of examining a patient with chronic pulpitis.
3. Clinical picture and diagnostics of chronic pulpitis.
4. Clinical picture and diagnostics of chronic ulcerative pulpitis.
5. Clinical picture and diagnostics of chronic hyperplastic pulpitis.
6. Differential diagnostics of chronic forms of pulpitis.
7. Pulp necrosis. Clinical picture, diagnostics, differential diagnostics.
8. Pulp degeneration. Causes, forms, clinical picture.

Clinical challenges.

Challenge 1. Patient N., 28 years old, complains of pain and bleeding in the area of tooth 26 that arises while eating hard food. Objectively: there is a deep decay cavity on the distal surface of tooth 26. It is formed by a proliferous granulating tissue that bleeds with a light touch of dental probe. During deep probing, pain arises. Percussion is painless.

Determine a probable diagnosis. Indicate possible additional examination methods that are necessary to determine the final diagnosis.

Challenge 2. Patient P. complains of periodically arising pain in the area of tooth 22 that lasts 15–20 minutes while eating hot food. Pain goes off with cold water. Objectively: on the distal surface of tooth 22 there is a deep decay cavity that reaches dental pulp cavity. Probing is clinically observed. The color of the tooth has changed. Percussion is only slightly sensitive.

Conduct necessary examination to determine a diagnosis. Determine a diagnosis.

Challenge 3. Patient K., 65 years old, complains of pain that arises when the patient changes position of the body. Pain has been afflicting for around a month.

Objectively: tooth 46 is intact, gingiva recession is 2 mm. In tooth 46 there is attrition of the enamel and dentin to the 1/3 level of the tooth crown. From

the lingual side, sharp edges of the tooth are observed. There is no reaction of the tooth to thermal irritants, percussion is negative. On the X-ray there is a visible homogeneous shadow in the dental pulp cavity. There are no changes in the periapical area of the root. Determine a diagnosis.

STUDY GUIDE FOR PRACTICAL CLASS № 8

Subject of the class: Treatment of pulpitis under local anesthesia.

Indications. Contraindications. Stages of treatment

Total term time: 245 minutes.

Goal of the class: to learn treatment methods of pulpitis under local anesthesia.

Tasks of the class:

1. To study indications and contraindications for vital treatment method.
2. To study stages of vital treatment method (dental pulpectomy).
3. To study mistakes and complications due to treatment of pulpitis by vital method.
4. To learn to carry out vital pulpectomy.

Test questions on the class subject:

1. Vital method of pulpitis treatment (vital pulpectomy). Definition, characteristics of the method.
2. Indications for vital pulpectomy.
3. Contraindications for vital methods of pulpitis treatment.
4. Stages of pulpotomy.
5. Stages of vital pulpectomy.
6. Pharmacological agents and appliances used for vital method of pulpitis treatment.
7. Evaluation criteria of results of pulpitis treatment by vital method.
8. Complications due to vital methods of pulpitis treatment.

Clinical challenges.

Challenge 1. Patient M., 20 years old, complains of acute, sudden pain in teeth 1.1, 1.2 that becomes worse when exposed to thermal and mechanical stimuli. From anamnesis: 5 hours ago the patient fell down and, as a result, chipped parts of dental crown of teeth 1.1, 1.2. St. localis: in teeth 1.1, 1.2 cutting edges and one third of clinical crowns are missing. During examination, punctate pulp exposure in both teeth is revealed, probing is painful. What treatment method is indicated in this case? Justify the choice, specify the stages.

Challenge 2. Patient A., 53 years old, complains of dull pain in tooth 23 that has been afflicting for one week. The pain becomes worse when exposed to thermal stimuli. The patient's condition is satisfactory, the patient doesn't have somatic diseases or any allergy. In tooth 23 on the distal surface there is filling material, changed in color. Marginal adaptation is imperfect. Percussion is pain-free. Specify a probable diagnosis, treatment plan, method and amount of help to render.

Challenge 3. Patient K., 38 years old, refers for first aid complaining of severe, spontaneous, intermittent pain lasting for 5–10 minutes in tooth 24. The tooth started aching 24 hours ago. The patient is on a short-term business trip. From anamnesis: the tooth has not been treated before; allergic anamnesis is not aggravated; the last visit to dentist was 3 years ago. St. localis: OHI-S = 0.7, GI = 0.4, CPI = 1.0. During examination, on the distal surface of tooth 24 an extensive carious cavity is revealed, dental tissue is softened, not pigmented. Probing is very painful in one place. Determine a diagnosis, make up a treatment plan, specify an optimal method of root canal treatment, Justify the choice, and enumerate the stages of treatment.

Challenge 4. The patient, 33 years old, reports the presence of a large cavity in tooth 4.6. From anamnesis: 10 months ago tooth 4.6 was treated for dental caries, but the filling fell out in a month. There was no pain. Allergic anamnesis is not aggravated. St. localis: OHI-S = 1.7, GI = 0.7, CPI = 3.2. During examination, on the distal and occlusal surfaces of tooth 4.6 a large carious cavity is revealed, enamel edges are sapped, dentin is softened, pigmented and removed in layers; connection with the cavity of the tooth is revealed. Probing causes mild pain. Specify a probable diagnosis, treatment plan, method and amount of help to render. Enumerate the stages to treat tooth 26.

Challenge 5. Patient S., 25 years old, reports change of color of tooth 21. From anamnesis: 2 years ago there was an injury in the area of tooth 21 but due to the absence of pain, the patient did not go to the doctor. The patient has allergy to penicillin antibiotics. St. localis: OHI-S = 0.7, GI = 0.3, CPI = 0.7. Tooth 21 is intact, dental crown is brown in color, percussion is pain-free. EOD 60 mcA. No changes are observed on dental radiography examination. Make up a treatment plan, specify an optimal method of root canal treatment, Justify the choice, and enumerate the stages of treatment.

Challenge 6. A 20 year-old patient complains of idiopathic, short-lasting, localized pain in the area of tooth 26, lasting one day. Objectively: in tooth 2.6 there is deep carious cavity of Class I (Black); the dentin on the walls and bottom is non-pigmented, soft; a carious cavity is not connected with the tooth cavity. Probing is very painful at the bottom; reaction to cold irritants is very positive. What is the most rational method of treatment in this case?

1. Biological method;
2. Congratulatory amputation;
3. Congratulatory extirpation;
4. Devitalized amputation;
5. Devitalized extirpation.

Challenge 7. The method of pulp vital extirpation is recommended to:

1. Patients with acute pulp inflammation types;
2. Patients with allergic reactions to anesthesia;
3. Patients with serious somatic pathology;
4. Pregnant women from 1st to 3rd month.

Challenge 8. What is the method of chronic pulp gangrene treatment?

1. Vital amputation;
2. Vital extirpation;
3. Devital amputation;
4. Devital extirpation;
5. Biological;
6. The root apex resection.

Challenge 9. A 46-year-old patient complains of pain and bleeding from the carious cavity of tooth 2.7 when eating. Previously, she has had spontaneous pain. Examination of tooth 27 reveals a deep carious cavity on the masticatory surface consisting of red tissue, probing induced pain and haemorrhage. What treatment method should be chosen?

1. Vital amputation;
2. Vital extirpation;
3. Devital amputation;
4. Devital extirpation;
5. Biological;
6. The root apex resection.

STUDY GUIDE FOR PRACTICAL CLASS № 9

Subject of the class: Treatment for pulpitis with devitalising agents.

Indications. Contraindications. Stages of treatment

Total term time: 245 minutes.

Goal of the class: to learn the method of pulpitis treatment with devitalising agents.

Tasks of the class:

1. To study indications for devital method of pulpitis treatment.
2. To study agents for pulp devitalisation.
3. To study methods of devital pulp extirpation.
4. To get to know possible complications while implementing devital method of teeth treatment.
5. To get to know iatrogenic factors that cause complications while implementing devital method of pulpitis treatment.
6. To learn to carry out stages of devital method of pulpitis treatment.

Test questions on the class subject:

1. Devital methods of pulpitis treatment. Indications and contraindications.
2. Formula and characteristics of devitalising agents. Instructions for usage. Antidotes.
3. Mechanisms of action of devitalising agents based on paraformaldehyde and arsenous acid.
4. Stages of the method of devital pulp extirpation.

5. Possible mistakes and complications that appear while treating pulpitis with devitalising method. Preventive measures.

6. Deontological aspects of devital method of pulpitis treatment.

Clinical challenges.

Challenge 1. Having examined patient K., 30 years old, the dentist diagnosed acute pulpitis of tooth 21. From anamnesis: the patient K. has anesthetics intolerance. Speak on the treatment method of tooth 21. What stages does the suggested method include?

Challenge 2. Patient K., 21 years old, comes to the dentist complaining of intermittent dull pain of tooth 36 and bleeding while eating solid food. Objectively: on the occlusal surface of tooth 36 there is a deep carious cavity with overgrowth of granulating tissue. Probing is very painful. What medical tests should be conducted to confirm a diagnosis? Determine a diagnosis. What treatment method will you choose?

Challenge 3. Patient A., 63 years old, comes to the dentist complaining of dull pain of tooth 27 that becomes worse while eating cold food. The pain has been afflicting for a week. From anamnesis: 3 months ago the patient had myocardial infarction. Objectively: General condition is satisfactory. On the distal surface of tooth 27 there is a deep decay cavity represented by softened dentin and food debris. Probing of the decay cavity bottom is very painful in one place. Percussion of the tooth is pain-free. Determine a diagnosis. What treatment method is indicated in this case? Enumerate the stages of tooth 27 treatment.

Challenge 4. A dentist was called to a patient who was being treated in the cardiological department after myocardial infarction. The patient was diagnosed with acute condition of chronic fibrous pulpitis of tooth 3.6. What method of pulpitis treatment should be chosen taking into account a grave condition of the patient?

1. Devital amputation;
2. Vital extirpation;
3. Vital amputation;
4. Devital extirpation;
5. Conservative method.

STUDY GUIDE FOR PRACTICAL CLASS № 10

Subject of the class: Acute apical periodontitis. Clinical picture, diagnostic aids. Emergency aid

Total term time: 245 minutes.

Goal of the class: to know clinical picture, diagnostics of acute apical periodontitis according to both national and international classifications. To be able to render emergency aid.

Tasks of the class:

1. To study the role of causative factors setting up inflammation in the tissues of periapical region.

2. To study the ICD-10 (1997) international classification of apical periodontitis and classification of Lukomskiy (1936).
3. To study pathogenetic aspect of apical periodontitis illnesses.
4. To study clinical picture of acute forms of apical periodontitis.
5. To be able to carry out differential diagnostics of acute forms of apical periodontitis with other emergencies.

Test questions on the class subject:

1. Definition of apical periodontitis.
2. Classifications of apical periodontitis (international ICD-10 (1997) and classification of Lukomskiy dated 1994)
3. Methods of acute apical periodontitis diagnostics.
4. Clinical signs of acute apical periodontitis.
5. Differential diagnostics of acute apical periodontitis.
6. Indications for rendering emergency aid.
7. Sequence of actions while rendering emergency aid to patients with acute apical periodontitis.

Clinical challenges.

Challenge 1. Patient A. complains of constant dull pain of tooth 15 that arose 24 hours ago. The pain becomes stronger when biting on this tooth. Lymph nodes are not palpated. Mucogingival junction is not changed. Objectively: on the mesioproximal surface of tooth 15 there is a deep carious cavity; probing is pain-free. There is no response to temperature stimuli. EOD = 120 mcA. On the dental X-ray: periodontal gap is clearly visible; bone tissue has no abnormal changes. Determine a diagnosis and prove it.

Challenge 2. Patient D. complains of constant dull pain of tooth 35 and it develops when biting on the tooth. According to the patient, four days ago devitalising arsenic paste was applied. The patient did not come to the doctor for the next appointment. Objectively: on the distal surface of tooth 35 there is a temporary filling; vertical percussion is very painful. Determine a diagnosis and prove it.

Challenge 3. Patient K. comes to the dental clinic to get help and is diagnosed with acute apical periodontitis of tooth 1.6. What should the dentist's tactics be?

Challenge 4. A 35 year-old patient complains of constant dull pain in tooth 25 that gets worse when biting down on food. Objectively: masticatory surface of tooth 25 has a carious cavity communicating with the dental cavity. A purulent discharge from the canal follows the probing. What method of diagnostics should be applied to confirm the diagnosis?

1. X-ray examination;
2. Electric pulp test;
3. Thermal test;
4. Bacteriological examination;
5. Deep probing.

STUDY GUIDE FOR PRACTICAL CLASS № 11

Subject of the class: Chronic apical periodontitis. Clinical picture, diagnostic aids

Total term time: 245 minutes.

Goal of the class: to know clinical picture, diagnostics and differential diagnostics of various forms of apical periodontitis.

Tasks of the class:

1. To learn to a dental patient questioning with apical periodontitis.
2. To study basic methods of examination of patients with chronic forms of apical periodontitis.
3. To know additional methods of examination of patients having chronic forms of apical periodontitis.
4. To study clinical picture of different forms of apical periodontitis.
5. To be able to carry out differential diagnostics of various forms of apical periodontitis.

Test questions on the class subject:

1. Structure of apical periodontium. Notion of “pulp-periodontal complex”.
2. Diagnostics of chronic apical periodontitis.
3. Clinical implications of chronic apical periodontitis according to the ICD-10 (1997) and classification of Ilya Lukomskiy (1994).
4. Clinical picture, diagnostics, differential diagnostics of radicular cyst (ICD-10, 1997)
5. Differential diagnostics of chronic apical periodontitis.
6. Aggravated chronic apical periodontitis, diagnostics, doctor’s tactics.
7. Differential diagnostics of aggravated chronic apical periodontitis.

Clinical challenges.

Challenge 1. Patient L. comes to the dental clinic for periodic health examination. Objectively: On the distal surface of tooth 15 there is a filling. On the mesial surface there is a carious cavity. Probing and percussion are pain-free. During palpation of mucogingival junction in the projection of the root apex of tooth 15, defect of bone tissue is observed.

What examination methods are necessary to determine a final diagnosis? Determine a diagnosis.

Challenge 2. Patient D., 22 years old, reports dental fistula in the area of tooth 36. Objectively: tooth 36 is changed in color; on the occlusal surface there is a filling of chemical composite resin cement, and marginal gap is imperfect. Percussion and probing are pain-free. During palpation of mucogingival junction, there is no purulent discharge. Determine a provisional diagnosis. What examination methods are necessary to determine a final diagnosis?

Challenge 3. Patient B., 30 years old, reports a decay cavity in tooth 17. Objectively: on the occlusal surface there is a deep carious cavity; the tooth cavity is open, root canal orifices are visible, and their probing is pain-free. On the X-ray:

at the apex of palatal root, there is a focus of bone tissue lesion with clear straight contour of 0.5–0.7 mm. The canals are not filled.

Determine a diagnosis. Are any other examination methods necessary to determine a diagnosis?

Challenge 4. A 51 year-old female patient reports food sticking in a right inferior tooth. Objectively: distal masticatory surface of tooth 45 has a deep carious cavity filled with dense pigmented dentin that doesn't communicate with the tooth cavity. The patient is diagnosed with chronic deep caries. What method of examination will allow the dentist to eliminate chronic periodontitis?

1. Electric pulp test;
2. Probing;
3. Palpation of projection of root apex;
4. Percussion;
5. Cold test.

STUDY GUIDE FOR PRACTICAL CLASS № 12

Subject of the class: Mechanical root canals treatment. Instructions on how to work with endodontic instruments in the clinic

Total term time: 245 minutes.

Goal of the class: to know the principles of mechanical root canal treatment.

Tasks of the class:

1. To study endodontic teeth preparation.
2. To explain dental X-rays of teeth of the upper and lower jaws.
3. To know modern endodontic instruments.
4. To be able to carry out mechanical root canal treatment.

Test questions on the class subject:

1. Notion of modern endodontic treatment. Indications, goals, tasks.
2. The basic instructions on how to carry out endodontic preparing technique.
3. Principles of endodontic preparation of tooth crown; goals and tasks.
4. The basic anatomic features of every tooth in three views, age-related changes to be taken into consideration.
5. Significance of anatomic information while carrying out endodontic preparation of tooth crown.
6. Technique of endodontic preparation of tooth crown and tooth root; quality standards of performance.
7. Standards and classification of endodontic instruments. The ISO international standard.
8. Instruments for opening dental cavity and finding canal orifices.
9. Diagnostic instruments.
10. Instruments for extracting soft tissue from the root canal.

11. Instruments for root canals widening and straightening. Endodontic handpieces. Nickel-titanium instruments for root canals widening. Instruments for root canals penetrating, widening and forming:

- K-type instruments;
- modification of the K-type instruments;
- H-type instruments;
- modifications of the H-files;
- instruments of other types;
- handpieces for root canal treatment.

Clinical challenges.

Challenge 1. Enumerate endodontic instruments.

Challenge 2. On the basis of diagnostic findings and X-ray, patient I., 35 years old, is diagnosed with chronic apical periodontitis. Enumerate the treatment stages and methods of endodontic preparation of root canal.

Challenge 3. Patient L., 27 years old, is diagnosed with pulp necrosis. Mention the stages and instruments for endodontic preparation of root canal.

STUDY GUIDE FOR PRACTICAL CLASS № 13

Subject of the class: Techniques of root canal preparation.

Determination of root canal length in the clinic

Total term time: 245 minutes.

Goal of the class: to know techniques of instrumental root canal treatment.

Tasks of the class:

1. To study principles of endodontic teeth preparation.
2. To explain dental X-rays of teeth of the upper and lower jaws.
3. To know modern endodontic instruments.
4. To be able to carry out mechanical treatment of root canals.
5. To be able to carry out instrumental treatment of root canals by the Step Back and Crown-Down methods.
6. To be able to determine working length of root canals. To know different ways of its determination.
7. To know possible mistakes and complications at the stages of endodontic preparation of tooth crown and roots, to know the causes.

Test questions on the class subject:

1. Principles of endodontic preparing of tooth roots; goals and tasks.
2. Indications for choosing techniques of instrumental root canal treatment (apical-coronal and coronal-apical).
3. Clinical evaluation of diagnostic X-rays.
4. Techniques of instrumental treatment of root canals: apical-coronal (“Step back”); coronal-apical (“Step Down” = “Crown Down”).
5. Working length of root canal and ways of its determination (effective length of tooth and root, X-ray method, apex locator, etc.).

6. Notion of anatomical, physiological and X-ray apex of root canal, “Master File”.

7. The basic anatomic features of every tooth in three views; age-related changes to be taken into consideration.

Clinical challenges.

Challenge 1. Having been examined, patient V., 26 years old, is diagnosed with acute pulpitis of tooth 23. Justify the treatment method, sequence of the dentist’s actions, technique of root canal treatment. Enumerate endodontic instruments.

Challenge 2. Specify the order of instruments to be applied for the root canal treatment by the Step-Back method.

Challenge 3. Specify the order of instruments to be applied for the root canal treatment by the Crown-Down method.

STUDY GUIDE FOR PRACTICAL CLASS № 14

Subject of the class: Root canal treatment with medications.

Medicaments for intracanal therapy in the clinic

Total term time: 245 minutes.

Goal of the class: to know medications and principles of root canals treatment with medicaments.

Tasks of the class:

1. To learn to choose medicaments for root canal treatment with medications.
2. To learn to determine indications for intracanal therapy.
3. To learn to fill in dental medical record of a patient with apical periodontitis.

Test questions on the class subject:

1. Classification of medicaments used in endodontia.
2. Medicaments for antiseptic treatment of root canals:
 - for irrigation;
 - for temporary filling (specify the period of exposure);
 - for temporary filling of teeth root canals: with corticosteroids and antibiotics, metronidazole, mixture of antiseptics, calcium hydroxide (specify the period of exposure, advantages/disadvantages).
3. Irrigation technique of teeth root canals.
4. Medications for chemical widening of teeth root canals.
5. Alternative methods of root canals disinfection:
 - laser irradiation;
 - photo radiation;
 - ultrasonic disinfection;
 - disinfection with medical ozone;
 - disinfection with depopohoresis of copper and calcium hydroxide.

Clinical challenges.

Challenge 1. Patient L., 35 years old, comes to the dentist complaining of acute pain in tooth 46. Objectively: tooth 46 is changed in color, with pink shade. On the mesial, occlusal and distal surfaces of the tooth, there is a filling with imperfect marginal gap. Vertical percussion of tooth 46 is very painful. There is hyperaemia and infiltration at the mucogingival junction in the area of this tooth. Determine a diagnosis. Decide on the plan of the tooth treatment and Justify the necessity of intracanal therapy with medications.

Challenge 2. Patient A, 19 years old, comes to the dentist complaining of pain in tooth 16 when biting. Objectively: on the occlusal surface of tooth 16, there is a deep decay cavity; percussion is pain-free. There is no reaction to cold test. Enumerate the sequence of actions during treatment with medications. Determine a diagnosis. Enumerate the stages of tooth 16 treatment.

STUDY GUIDE FOR PRACTICAL CLASS № 15

Subject of the class: Techniques of root canal obturation. Medications for filling root canals

Total term time: 245 minutes.

Goal of the class: to master techniques of root canal obturation. Indications and contraindications for using medications for filling root canals.

Tasks of the class:

1. To master technique of endodontic treatment of pulpitis and apical periodontitis.

2. To learn to evaluate quality of endodontic treatment of pulpitis and apical periodontitis.

3. To learn to fill in a dental medical record of a patient with pulpitis and apical periodontitis.

Test questions on the class subject:

1. Classification of materials for root canal obturation.

2. Characteristics of the main groups of sealers.

3. Composition and qualities of gutta-percha.

4. Technique of lateral condensation (criteria of correct fitting of the main post, selection of spreader and additional posts, techniques of filling root canals with sealer).

5. Mistakes during root canals filling.

6. Complications during root canals filling.

Clinical challenges.

Challenge 1. Basing on examination (subjective and objective) of patient L., 20 years old, the dentist has got the following data: dental X-ray of tooth 12 shows that in the root canal, there are traces of inhomogeneous dental filling material in the orifice and middle third, at a distance of 2 mm from apex. At the apex of tooth 12, there is an integrity violation of compact plate of alveolus. Aggressive lesion is

round-shaped with sharp contours, 3–4 mm in diameter. Determine a diagnosis. Decide on the treatment tactics.

Challenge 2. Patient L., 35 years old, comes to the dentist complaining of acute pain in tooth 46. Objectively: tooth 46 is changed in color, with pink shade. On the mesial, occlusal and distal surfaces of the tooth, there is a filling with imperfect marginal gap. Vertical percussion of tooth 46 is very painful. There is hyperaemia and infiltration at the mucogingival junction in the area of this tooth. Determine a diagnosis. Decide on the plan of the tooth treatment.

Challenge 3. Patient A., 19 years old, comes to the dentist complaining of pain, in tooth 16 when biting. Objectively: on the occlusal surface of tooth 16, there is a deep decay cavity. Probing of caries and percussion are pain-free. There is no reaction to cold test. Enumerate necessary additional examination methods. Determine a diagnosis. Enumerate the stages of the tooth 16 treatment.

Challenge 4. While preparing patient V., 56 years old, for dental prosthetics, on the dental panoramic X-ray there have been revealed aggressive lesions of bone tissue, 3–4 mm in diameter, with sharp contours in the area of root apexes of teeth 17, 28 and 41. A year ago, the patient suffered infective endocarditis. Enumerate the necessary examination methods. Make up a treatment plan of the patient.

STUDY GUIDE FOR PRACTICAL CLASS № 16

Subject of the class: Evaluation of treatment quality in endodontics

Total term time: 245 minutes.

Goal of the class: to master methods of evaluation of treatment quality in endodontics.

Tasks of the class:

1. To examine patients with endodontic pathological condition.
2. To carry out clinical evaluation of endodontic treatment quality.
3. To carry out X-ray evaluation of endodontic treatment quality.
4. To evaluate endodontic treatment quality according to the diagnosis for the treatment.
5. To plan terms of case follow-up of patients with endodontic pathological condition.

Test questions on the class subject:

1. To define “physiologic tooth apex”, “radiological tooth apex”.
2. Methods of identification of working length of the root canal.
3. Methods of the root canal obturation.
4. Clinical evaluation criteria of endodontic treatment quality.
5. X-ray evaluation criteria of endodontic treatment quality:
 - X-ray successful result;
 - X-ray controversial result;
 - X-ray unsuccessful result.
6. Term of evaluation of endodontic treatment quality (nearest and distant).

Clinical challenges.

Challenge 1. Patient K. of 30 years old comes to the dentist complaining of a dull pain in tooth 16. From anamnesis: 3 months ago, the canals in tooth 16 were filled. During the clinical examination, percussion of tooth 16 was slightly painful. Periapical X-ray of tooth 16 reveals filling material in the root canals, at a distance of 2 mm to the root apices. The filling material tightly fills the root canal. Evaluate the quality of endodontic treatment. What is the tactics of the dentist in this case?

Challenge 2. While examining patient N. of 45 years old, panoramic X-ray showed filling material in the root canals of tooth 36, in the distal canal — at a distance of 0.5 mm from the apex, in the mesial canals — at a distance of 2 mm from the apex. Filling material tightly fills all the length of the root canals. Integrity of the compact plate in the area of the apices is saved. No complaints. From anamnesis: the tooth was treated 2 years ago. Evaluate the quality of endodontic treatment. What is the tactics of the dentist in this case?

Challenge 3. Patient D. of 52 years old comes to the dentist for treatment before dental prosthetics. No complaints of pain. The examination reveals that percussion of tooth 11 is pain-free; there are no changes of the mucous membrane in the projection of the root apex. Periapical X-ray of tooth 11 reveals filling material in the root canal. It homogeneously fills the root canal up to the apex. Behind the apex, there is a round X-ray shading of 2×2 mm. Evaluate the quality of endodontic treatment. What is the tactics of the dentist in this case?

STUDY GUIDE FOR PRACTICAL CLASS № 17

Subject of the class: Mistakes and complications during diagnostics and treatment of pulpitis and apical periodontitis, preventive measures

Total term time: 245 minutes.

Goal of the class: to know possible mistakes and complications during treatment of pulpitis and apical periodontitis, to know preventive measures.

Tasks of the class:

1. To study possible mistakes and complications during pulpitis treatment.
2. To study possible mistakes and complications during apical periodontitis treatment.
3. To know preventive measures of possible complications during pulpitis and apical periodontitis treatment.
4. To study methods to eliminate complications during pulpitis treatment.

Test questions on the class subject:

1. Mistakes in diagnosing pulpitis.
2. Mistakes in diagnosing apical periodontitis.
3. Mistakes while choosing pulpitis treatment technique.
4. Mistakes while applying technique of saving tooth pulp.

5. Mistakes while treating pulpitis with vital extirpation.
6. Mistakes while treating pulpitis with devital method.
7. Mistakes while choosing apical periodontitis treatment technique.
8. Significance of the rubber dam (Germ. Kofferdam) system and rules of asepsis in endodontic treatment.
9. Deontological problems in diagnostics and treatment of pulpitis and apical periodontitis. Necessity of documentation in endodontic treatment.

Clinical challenges.

Challenge 1. Patient A. complains of pain in tooth 26 when affected by hot food. From anamnesis: a week ago, the tooth was treated for acute pulpitis. Clinically observed: tooth 26 is under filling. On the dental X-ray: palatine canal is 1/4 filled, buccal canals are not filled. Describe your actions. Make up the treatment plan. Determine a diagnosis.

Challenge 2. Patient K. comes to the dentist complaining of colicky pains from thermal stimuli and night pains of tooth 46 within two days. With anesthesia, the dentist performed cavity preparation, opened and exposed the tooth cavity. In the trifurcation area, the doctor carried out perforation of the cavity floor. Determine a diagnosis. Make up the treatment plan and describe your actions in this situation.

Challenge 3. Patient P. is being treated for chronic apical periodontitis of tooth 11. During mechanical root canal treatment, N-file breaks off in the root canal of tooth 11. What will your following steps be in this situation?

QUESTIONS FOR THE EXAM IN DENTAL THERAPY FOR THE 3RD YEAR STUDENTS

1. Sterilization of dental tools. Preparation before sterilization.
2. Diagnostic techniques in dental therapy.
3. Plan of the patient's initial examination.
4. Dental records. Dental paperwork: registration and report.
5. Index assessment of dental status.
6. Personal oral hygiene. Hygiene products. Qualifying standards.
7. Professional oral hygiene. Stages.
8. Methods of dental deposits display. Oral hygiene indexes. Methods of dental deposits removal.
9. Risk factors of gingival inflammation genesis.
10. Clinical signs of gingivitis. Diagnostic techniques. Gingival Index (GI, Loe-Silness), methods of display. Interpretation.
11. Preventive and curative measures of gingival inflammation elimination.
12. Clinical signs of destruction in tissues of marginal periodontium.
13. Clinical methods of testing that characterize destruction in periodontal tissues. Complex Periodontal Index (CPI). Methods of identification. Interpretation.
14. Dental caries. Mechanism of tooth decay, epidemiology, classification.
15. Definition of dental caries. Caries classification: international (ICD-10), clinical and topographical (G.V. Black classification), etc.
16. Tooth decay risk factors. Resistance to caries and susceptibility to caries.
17. Current concept of tooth decay.
18. Caries limited to enamel (White spot lesions). Clinical picture. Differential diagnostics.
19. Caries limited to enamel (superficial caries). Clinical picture. Differential diagnostics.
20. Caries limited to enamel. Differential diagnostics.
21. Caries limited to enamel. Treatment.
22. Caries of dentine. Clinical picture. Diagnostic techniques.
23. Caries of dentine. Differential diagnostics.
24. Caries of dentine. Treatment modes.
25. Diagnostics of masticatory teeth occlusal surface caries.
26. Treatment of masticatory teeth occlusal surface caries. Selection of filling material.
27. Diagnostics of masticatory teeth proximal surface caries.
28. Treatment of masticatory teeth proximal surface caries. Selection of filling material.
29. Contact points. Methods of restoration.
30. Diagnostics of precervical caries.
31. Treatment of precervical caries. Selection of filling material.
32. Indication for selection of filling material during the carious cavity restoration of different localization.

33. Probable mistakes and complications during dental caries diagnostics.
34. Probable mistakes and complications during dental caries treatment.
35. Theoretics of dental caries prevention.
36. Prevention of dental caries in adults.
37. Fluoride in prevention of caries. Methods of fluoridation.
38. Toothpaste. Composition. Requirements. Recommendations for selection.
39. Methods of forecasting tooth decay.
40. Hypoplasia of the tooth hard tissues. Etiology. Clinical picture. Differential diagnostics. Treatment modes. Prevention.
41. Endemic mottled teeth. Etiology. Clinical picture. Differential diagnostics. Treatment modes. Prevention.
42. Endemic mottled teeth (dental fluorosis). Etiology. Clinical picture. Differential diagnostics. Treatment modes. Prevention.
43. Erosion of the tooth hard tissues. Etiology. Clinical picture. Differential diagnostics. Treatment modes. Prevention.
44. Wedge-shaped tooth defect. Etiology. Clinical picture. Differential diagnostics. Treatment modes. Prevention.
45. Treatment modes of pre-eruptive tooth pathology. Selection of filling material for dental restoration.
46. Treatment modes of post-eruptive tooth pathology. Selection of filling material for dental restoration.
47. Methods of anesthesia. Anesthetics used in dental therapy.
48. Local anesthesia indications and contraindications during dental therapy treatment.
49. Local anesthesia complications. Prevention of complications.
50. Minimally invasive methods of dental caries operative treatment. Indications and contraindications. Techniques.
51. Types of insulating pads. Composition. Properties. Indications for use. Methods of usage.
52. Types of pulp caps. Composition. Properties. Indications for use. Methods of usage.
53. Clinical peculiarities of amalgam usage during dental restoration.
54. Clinical peculiarities of composites usage during dental restoration.
55. Dental composites. Classification.
56. Methods of adhesive preparation for tooth restoration.
57. Adhesive systems. Classifications. Composition. Properties. Indications for use.
58. Main stages in working with adhesive systems.
59. Self-curing dental composites. Composition. Properties. Indications and contraindications. Procedure.
60. Main stages in working with self-curing dental composites.
61. Light-curing dental composites. Composition. Properties. Indications and contraindications. Procedure.
62. Main stages in working with light-curing composites.
63. Criteria of the filling quality evaluation.

64. Pulpitis. Etiology. Pathogenesis. Classifications (WHO, 1997; Gofung)
65. Acute pulpitis. Clinical picture. Diagnostic techniques. Treatment.
66. Acute pulpitis treatment modes.
67. Suppurative acute pulpitis. Clinical picture. Diagnostics. Differential diagnostics. Treatment.
68. Suppurative acute pulpitis treatment modes.
69. Chronic pulpitis. Clinical picture. Diagnostics. Differential diagnostics. Treatment.
70. Chronic pulpitis treatment modes.
71. Chronic hyperplastic pulpitis. Clinical picture. Diagnostics. Differential diagnostics. Treatment.
72. Chronic hyperplastic pulpitis treatment modes.
73. Chronic ulcerative pulpitis. Clinical picture. Diagnostics. Differential diagnostics. Treatment.
74. Chronic ulcerative pulpitis treatment modes.
75. Pulp necrosis. Etiology. Pathogenesis. Clinical picture. Diagnostics. Differential diagnostics. Treatment.
76. Pulp necrosis treatment modes.
77. Differential diagnostics of different forms of pulpitis.
78. Diagnostic errors and complications during pulpitis treatment.
79. Pulpitis treatment modes.
80. Pulpitis treatment under local anesthesia. Indications and contraindications. Treatment stages.
81. Pulpitis treatment using devitalizing pastes. Indications. Contraindications. Treatment stages.
82. Errors and complications during pulpitis treatment.
83. Apical periodontitis. Etiology. Pathogenesis. Classifications (WHO, 1997; Lukomskiy, 1936).
84. Acute apical periodontitis. Clinical picture. Diagnostic techniques. Emergency care.
85. Chronic apical periodontitis. Clinical picture. Diagnostic techniques.
86. Errors and complications in diagnosing apical periodontitis.
87. Root canal preparation. Rules to follow when working with dental tools in clinic.
88. Root canal preparation techniques.
89. Clinical methods of the root canal length determination.
90. Endodontic tools. Classification. Rules to follow.
91. Root canal preparation using the Step-back technique.
92. Root canal preparation using the Crown-down technique.
93. Root canal irrigation.
94. Medicines for clinical root canal therapy.
95. Methods of root canal obturation.
96. Root canal filling materials. Classification. Indications and contraindications. Methods of usage.
97. Quality evaluation of endodontic treatment.

EVALUATION CRITERIA OF STUDENT'S KNOWLEDGE AT THE COURSE EXAM

10 (ten) points

- To have systemised, profound and full knowledge of all the sections of the educational program on dental therapy (3rd year), as well as to know the main questions of related subjects.
- To be able to use scientific terminology (in foreign language, as well), to answer questions in a stylistically correct and logical manner.
- To perfectly handle instruments for diagnostics and treatment of hard dental tissues, tissues of periodontium, oral mucous membrane, to be able to use it efficiently and as necessary.
- To be able to individually and creatively solve challenging tasks in non-typical clinical situations in the framework of the educational program on dental therapy (3rd year).
- To have full and profound knowledge of materials from the main and additional sources, recommended by the educational program on dental therapy (3rd year).
- To be competent in theories and aspects of the dental therapy sections and evaluate them critically.
- To be able to work individually and creatively in practical classes, participate in group discussions and have a high level of performance of tasks.
- To attend scientific students group on dental therapy, be involved in research work, to take part in academic competitions on dental therapy.
- To get a final score not less than 7 for the 5th and 6th semesters.
- To accomplish the practical minimum for the 5th, 6th semesters.

9 (nine) points

- To have systemised, profound and full knowledge of all the sections of the educational program on dental therapy (3rd year), as well as to know the main questions of related subjects.
- To be able to use scientific terminology (in foreign language, as well), to answer questions in a stylistically correct and logical manner.
- To perfectly handle instruments for diagnostics and treatment of hard dental tissues, tissues of periodontium, oral mucous membrane, to be able to use it efficiently and as necessary.
- To be able to individually and creatively solve challenging tasks in non-typical clinical situations in the framework of the educational program on dental therapy (3rd year).
- To fully acquire material from the main and additional literature, recommended by the educational program on dental therapy (3rd year).
- To be competent in theories and aspects of the dental therapy sections and evaluate them critically.

- To be able to work individually and actively in practical classes, systematically participate in group discussions of subjects and have a high level of performance of tasks.
- To get a final score not less than 7 for the 5th and 6th semesters.
- To accomplish the practical minimum for the 5th, 6th semesters.

8 (eight) points

- To have systemised, profound and full knowledge of all the questions of the educational program on dental therapy (3rd year).
- To be able to use correctly scientific terminology (in foreign language, as well), to answer questions in a stylistically correct manner and make reasonable conclusions.
- To handle instruments for diagnostics and treatment of hard dental tissues, tissues of periodontium, oral mucous membrane, to be able to use it efficiently and as necessary.
- To be able to individually solve challenging tasks in typical clinical situations in the framework of the educational program on dental therapy (3rd year).
- To acquire material from the main and additional literature, recommended by the educational program on dental therapy (3rd year).
- To be competent in the main theories and aspects of the dental therapy sections (3rd year) and evaluate them critically.
- To work individually and actively in practical classes, participate in group discussions of subjects and have a high level of performance of tasks.
- To get a final score not less than 7 for the 5th and 6th semesters.
- To accomplish the practical minimum for the 5th, 6th semesters.

7 (seven) points

- To have systemised, profound and full knowledge of all the sections of the educational program on dental therapy (3rd year).
- To be able to use scientific terminology (in foreign language, as well), to answer questions in a logically correct manner and make reasonable conclusions.
- To handle instruments for diagnostics and treatment of hard dental tissues, tissues of periodontium, oral mucous membrane, to be able to use it efficiently and as necessary.
- To acquire material from the main and additional literature, recommended by the educational program on dental therapy (3rd year).
- To be competent in the main theories and aspects of the dental therapy sections (3rd year) and evaluate them critically.
- To work individually in practical classes and have a high level of performance of tasks.
- To accomplish the practical minimum for the 5th, 6th semesters.

6 (six) points

- To have quite full and systemised knowledge of all the sections of the educational program on dental therapy (3rd year).
- To be able to use necessary scientific terminology, to answer questions in a logically correct and stylistically correct manner and make reasonable conclusions.
- To individually make typical decisions in typical clinical situations in the framework of the educational program on dental therapy (3rd year).
- To handle dental instruments for diagnostics and treatment of hard dental tissues, tissues of periodontium, oral mucous membrane.
- To acquire material from the main literature, recommended by the educational program on dental therapy (3rd year).
- To be competent in the basic theories and aspects of dental therapy according to the educational program (3rd year).
- To work individually in practical classes, sometimes participate in group discussions of subjects and have a high level of performance of tasks.
- To accomplish the practical minimum for the 5th, 6th semesters.

5 (five) points

- To have sufficient amount of knowledge of all the sections of the educational program on dental therapy (3rd year).
- To use scientific terminology, to answer questions in a logically correct manner and make conclusions.
- To handle dental instruments for diagnostics and treatment of patients having problems with hard dental tissues, tissues of periodontium, oral mucous membrane.
- To individually make typical decisions in typical clinical situations in the framework of the educational program on dental therapy (3rd year).
- To acquire material from the main literature, recommended by the educational program on dental therapy (3rd year).
- To be competent in the basic theories and aspects of dental therapy according to the educational program (3rd year), to evaluate them comparatively.
- To work individually in practical classes, participate in group discussions of subjects and have a high level of performance of tasks.
- To accomplish the practical minimum for the 5th, 6th semesters.

4 (four) points PASS

- To have sufficient level of knowledge of dental therapy according to the educational program (3rd year).
- To acquire material from the main literature, recommended by the educational program on dental therapy (3rd year).
- To use scientific terminology and make conclusions without serious mistakes.

- To partially handle instruments for diagnostics and treatment of patients having problems with hard dental tissues, tissues of periodontium, oral mucous membrane.
- To solve typical situational challenges under the teacher`s guidance.
- To be competent in the main theories and aspects of dental therapy according to the educational program (3rd year), to evaluate them.
- To work under the teacher`s guidance in practical classes and have an acceptable level of performance of tasks.
- To accomplish the practical minimum for the 5th, 6th semesters.

3 (three) points NON-PASS

- To have insufficient amount of knowledge of dental therapy in the framework of the educational program (3rd year).
- To have insufficient knowledge of material from the main literature, recommended by the educational program on dental therapy (3rd year).
- To be unable to use scientific terminology or use it incorrectly; to answer questions with serious logical and linguistic mistakes.
- Absence of skills to use dental instruments for diagnostics and treatment of patients having problems with hard dental tissues, tissues of periodontium, oral mucous membrane.
- To make incompetent decisions in typical clinical situations according to the educational program on dental therapy (3rd year).
- To be incompetent in the main theories and aspects of dental therapy according to the educational program (3rd year).
- To be inactive in practical classes and to have a low level of performance of tasks.

2 (two) points NON-PASS

- To have fragmentary knowledge of dental therapy according to the educational program (3rd year).
- Absence of knowledge of the main literature, recommended by the educational program on dental therapy (3rd year).
- To be unable to use scientific terminology and to answer questions with serious stylistic and logical mistakes.
- To be inactive in practical classes and have a low level of performance of tasks.

1 (one) score NON-PASS

- Absence of competence and knowledge of materials under study about dental therapy according to the educational program (3rd year); or refusal to answer.

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Учебное издание

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**РУКОВОДСТВО ДЛЯ ПРАКТИЧЕСКИХ ЗАНЯТИЙ
ПО ТЕРАПЕВТИЧЕСКОЙ СТОМАТОЛОГИИ**

**GUIDE FOR PRACTICAL CLASSES
IN DENTAL THERAPY**

Учебно-методическое пособие

На английском языке

Ответственная за выпуск Л. А. Казеко
Переводчик Е. Л. Колб
Компьютерная верстка Н. М. Федорцовой

Подписано в печать 17.12.15. Формат 60×84/16. Бумага писчая «Снегурочка».
Ризография. Гарнитура «Times».
Усл. печ. л. 3,49. Уч.-изд. л. 3,43. Тираж 40 экз. Заказ 98.

Издатель и полиграфическое исполнение: учреждение образования
«Белорусский государственный медицинский университет».
Свидетельство о государственной регистрации издателя, изготовителя,
распространителя печатных изданий № 1/187 от 18.02.2014.
Ул. Ленинградская, 6, 220006, Минск.