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STATE UNIVERSITY OF MEDICINE AND PHARMACY
"NICOLAE TESTEMITANU"

Valentina NICOLAICIUC

PRACTICAL GUIDE
CLINICAL PRACTICAL LESSONS
FOR THE IIIrd YEAR OF STUDY Vth SEMESTER

Subject: DENTAL CARIES (TOOTH DECAY)

CHISINAU
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The Department of Therapeutical Dentistry

Valentina NICOLAICIUC

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Practical Guide for Clinical Practical Lessons is a methodological manual in accordance with the curriculum for students - dentists.

This Guide will help foreign students to study the etiology, clinic, diagnosis and treatment of dental diseases.

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DESCRIEREA CIP A CAMEREI NAȚIONALE A CĂRȚII

Nicolaiciuc Valentina

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THE PLAN OF PRACTICAL LESSONS:

1	Examination of stomatological patients. Filling in the observation registers. Determination of the hygiene indices of the oral cavity.
2	Dental deposits. Green stone. Removing of dental calculus.
3	The clinical picture, positive and differential diagnosis of caries at the stages of stain, superficial, middle, profound.
4	Treatment of caries (surgical and conservative). Method of demineralization therapy.
5	Principles and rules in surgical treatment of caries (superficial, middle, profound).
6	Remedies for prevention of pain in treatment of caries.
7	Indirect capping (curative bandage). Substances, materials, techniques.
8	Treatment of caries cavities localized on the occlusal, vestibular surfaces, in the region of the neck of premolars and molars.
9,10	Treatment of caries cavities localized on the contact surfaces of premolars and molars.
11,12	Treatment of caries cavities localized on the contact surfaces of frontal teeth.
13	Choice of the filling material. Technique of filling the cavities with cements and amalgams.
14,15	Technique of filling the cavities with composite materials (self and light curing).
16	Reconstructive methods of contact point and the angle of frontal teeth. Parapulpal pins. Veneers.
17	Errors and complications in diagnosis and treatment of caries. Colloquium.

PRACTICAL LESSON № 1

Subject: The examination of stomatological patients. Filling in the medical card. Determination of OHI (Oral Hygiene Index).

Place: Dental office

Time: 3 hours

The aim of the lesson: student's familiarization with methods of examination of patients and filling in medical card. Determination of OHI.

The plan of the lesson:

1. Appreciation of student's knowledge on this subject – 25 min.
2. Practical lesson: students examine oral cavity of their colleges and fill in the medical card. Also determine OHI – 100 min.
3. Summary – 10 min.

Control questions:

1. The methods of collecting the causal data.
2. First stage in patient examination.
3. Dental equipment for oral cavity examination.
4. Ensemble examination of the patient.
5. The succession of oral cavity and teeth examination.
6. What information is obtained by probing.
7. What information is obtained by percussion and palpation.
8. What is the meaning of thermal and electrical test.
9. What are the basic and auxiliary methods of examination.
10. Radiologic methods in diagnosis of stomatologic diseases.
11. Estimation of oral hygiene state by Green and Vermillion.
12. In what succession the medical card is filled.
13. Necessary documents in dental office (039-2 y form).
14. Medical card – judicial document.

Homework: to write the classification of methods for patient examination with diagnosis dental caries.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R. Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 2

Subject: Dental deposits. Green stone. Removing of dental calculus (scaling).

Place: Dental office

Time: 3 hours

The aim of the lesson: to teach students to determine dental deposits and methods of it's removing.

The plan of the lesson:

1. Appreciation of student's knowledge on this subject – 25 min.
2. Practical lesson: determination of the Oral Hygiene and Dental calculus indices. The assimilation of practical skills for realizing the scaling - 100 min.
3. Summary – 10 min.

Control questions:

1. The functions and structure of gingival sulcus.
2. Enamel cuticle and its physiological significance.
3. The manner of changing the composition and quality of saliva depending upon the general state of organism.
4. The importance of saliva for tissues of oral cavity.
5. Microflora of oral cavity.
6. Distinctive signs between saliva and buccal liquid.
7. Types of dental deposits.
8. Causes that determine the appearance of soft deposits and its composition.
9. Clinical importance of soft dental deposits.
10. Types of dental calculus.
11. What is the composition and mechanism of formation for supra- and subgingival calculus.
12. Technique of removing the dental calculus (scaling).
13. What are the complications as a result of scaling and methods of their prevention.
14. Instruments used for scaling.
15. Advantages of Ultrasonic scaling.

16. Technique of sharpening the instruments for scaling.

17. What are the causes that generate gingival inflammation as a result of scaling.

Homework: to write in the copy-book the Hygiene Index by Green – Vermillion and Dental calculus Index with picture demonstration, and solutions for pointing out dental plaque.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R.Hume

2. Lecture material

3. Propedeutics and Preventive Dentistry – P. Godoroja

4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 3

Subject: The clinical picture, positive and differential diagnosis of caries at the stage of stain, superficial, middle, profound.

Place: Dental office

Time: 3 hours

The aim of the lesson: to teach students the methods of examination and diagnosis of different forms of caries.

The plan of the lesson:

1. Appreciation of student's knowledge on this subject – 25 min.
2. Practical work: examination of patients with various clinical forms of dental caries with application methods for diagnosis – 100 min.
3. Summary – 10 min.

Control questions:

1. Determination of notion about Dental caries.
2. Principal indices to appreciate the degree of teeth lesion by caries.
3. Intensity index.
4. Index COE (caries, obturation, extraction) and its value.
5. Degrees to estimate caries intensity by WHO.
6. Caries classification (by Lukomski, M. Gafar and C. Andreescu, WHO).

7. The etiology of dental caries.
8. The role of local and general factors in caries evolution.
9. Clinical picture and differential diagnosis of caries in stage of stain.
10. Clinical picture and differential diagnosis of caries in stage of superficial.
11. Clinical picture and differential diagnosis of caries in stage of middle.
12. Clinical picture and differential diagnosis of caries in stage of profound.
13. Basic and auxiliary methods in diagnosis of dental caries.

Homework: to write in the copy-books the classification of dental caries, degrees to estimate dental caries by WHO; to write factors that favor the appearance of dental caries.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R. Hume
2. Lecture material
3. Propeudeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 4

Subject: Treatment of dental caries (surgical and conservative).
Methods for remineralization therapy.

Place: Dental office

Time: 3 hours

The aim of the lesson: to assimilate methods for remineralization therapy, indications for usage the conservative method; curative remedies.

The plan of the lesson:

1. Appreciation of student's knowledge on this subject – 25 min.
2. Practical lesson: treatment of patients with different forms of dental caries by conservative method – remineralization therapy – 100 min.
3. Summary – 10 min.

Control questions:

1. Methods of caries diagnosis at the stage of stain.
2. Essence and method to perform remineralization therapy.
3. What is remineralization therapy based on?
4. What remedies are used in the treatment of dental caries in the stage of stain.
5. Physiotherapeutic methods of treatment dental caries in the stage of stain.
6. Call the remedies used in remineralization therapy.
7. Recommendations for patients that are subject to conservative therapy.
8. Methods to estimate the efficiency of treatment with remineralization therapy.

Homework: to write in the copy-books the plan of remineralization therapy with indication the treatment cure lasting and of curative remedies.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R.Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 5

Subject: Basic principles and rules in surgical treatment of dental caries

(Superficial, middle and profound).

Place: Dental office

Time: 3 hours

The aim of the lesson: to assimilate basic principles and rules in surgical treatment of dental caries.

The plan of the lesson:

1. Appreciation of student's knowledge on this subject – 25 min.
2. Practical work: to lend stomatologic assistance to patients with different forms of dental caries – 100 min.
3. Summary – 10 min.

Control questions:

1. Principles in surgical treatment of dental caries.
2. Stages in preparation caries cavities.
3. Rules in preparation caries cavities.
4. Stages in surgical treatment for superficial caries.
5. Handle driven instruments for cavities preparation.
6. Stages in treatment for middle caries.
7. Stages in treatment for profound caries.
8. Rotary instruments used in preparation caries cavities.

Homework:

1. To draw in the copy books the depth of caries cavities with evident marking the destroyed layers of dental tissues in superficial, middle, profound caries.
2. From the book to copy out the pathologic-morphologic zones in these forms of caries.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R. Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 6

Subject: Remedies for prevention the pain in treatment of dental caries.

Place: Dental office.

Time: 3 hours.

The aim of the lesson: To assimilate methods for prevention the pain with anesthetic solutions, by physic methods, by injections and with the respect of general rules of preparation the caries cavities.

The plan of the lesson:

1. To verify student's knowledge on the subject – 25 min.
2. Practical work: to treat patients with different forms of dental caries with application the methods of anesthesia (applicable, trunk, infiltrative) – 100 min.
3. Summary: 10 min.

Control questions:

1. Methods of anesthesia used in preparation of caries cavities.
2. Substances (solutions to perform anesthesia).
3. Remedies used to apply anesthesia.
4. Physical methods to perform anesthesia.
5. General rules in painless preparation of caries cavity.
6. Possible complications in application of anesthesia.

Home work:

- To write in the copy-books substances to perform anesthesia in treatment of dental caries.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R.Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 7

Subject: Indirect capping (curative bandage), substances, materials, techniques.

Place: Dental office.

Time: 3 hours

The aim of the lesson: To assimilate indications and techniques for application indirect capping in treatment of dental caries; to study curative remedies.

The plan of the lesson:

1. To verify student's knowledge on this subject – 25 min.
2. Practical work: dental caries treatment with application of curative remedies (liners). Treatment of dental caries in a single and two visits. Study of modern curative remedies for indirect capping – 100 min.
3. Summary – 10 min.

Control questions:

1. Notion about direct and indirect capping.
2. Indications for indirect capping.

3. What the Smear Layer is?
4. Call the difference between the Smear Layer and wounded surface of soft tissue.
5. Dentinal fluid.
6. Call the groups of curative pastes and their composition.
7. Mechanism of action for pastes that contain Calcium hydroxide.
8. Light-curing curative remedies.
9. The aim of treatment caries in two visits.

Homework:

- To copy out in the note books the remedies and curative pastes that are used in the treatment of dental caries.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R.Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 8

Subject: Treatment of caries cavities localized on the occlusal, vestibular surfaces and in the region of the neck of premolars and molars.

Place: Dental office.

Time: 3 hours

The aim of the lesson: To study the peculiarities of treatment dental caries localized on occlusal vestibular surfaces of molars and premolars and in the region of the neck.

The plan of the lesson:

1. To verify student's knowledge on this subject – 25 min.
2. Practical work: Treatment of patients with dental caries of Ist, Vth classes and to assimilate the peculiarities of preparation and formation of these cavities – 100 min.
3. Summary – 10 min.

Control questions:

1. Variants of Ist class cavities by Black.
2. Peculiarities of preparation of each called variant.
3. Necessary instruments for preparation cavities at each stage.
4. What does the cavity of Ist class cavity depend upon?
5. Peculiarities of formation the cavity floor in different variants.
6. Inward shape of caries cavities localized in the region of the neck and vestibular surfaces.
7. The thickness of enamel in the region of the neck.
8. Peculiarities of preparation caries cavities localized in the region of the neck with subgingival extension.

Homework:

- To draw in the copy-books variants of Ist, Vth class cavities before and after preparation.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R. Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 9-10

Subject: Treatment of caries cavities, localized on the contact surfaces of molars and premolars.

Place: Dental office.

Time: 6 hours.

The aim of the lesson: To assimilate peculiarities of treatment the caries localized on contact surfaces of molars and premolars.

The plan of the lesson:

1. To verify student's knowledge in preparation of cavities and treatment IInd class caries by Black – 40 min.
2. Practical work: To diagnose and treat caries cavities on contact surfaces of molars and premolars – 220 min.
3. Summary – 10 min.

Control questions:

1. Peculiarities in evolution IInd class caries.
2. Variants of IInd class cavities.
3. Peculiarities in preparation cavities with or without creation the access.
4. Preparation of vertical cavities.
5. Preparation of horizontal cavities.
6. MOD, VDO, VMD cavities and their preparation.
7. Tunnel method (complete and incomplete)
8. Significance of contact point.
9. Restoration of contact point.
10. Methods of diagnosis dental caries on the contact surface.
11. Instruments necessary to restore contact point.
12. Smoothing the gingival wall.

Homework:

- to draw variants of IInd class cavities by Black before and after preparation.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R.Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 11-12

Subject: Treatment of caries cavities, localized on the contact surfaces of the frontal teeth.

Place: Dental office.

Time: 6 hours.

The aim of the lesson: to assimilate peculiarities of caries treatment, localized on contact surfaces of frontal teeth with or without involving incise /cutting angles.

The plan of the lesson:

1. To verify student's knowledge on this subject – 40 min.
2. Practical work: Diagnosis and treatment of dental caries IIIrd and IVth classes by Black – 220 min.
3. Summary – 10 min.

Control questions:

1. Evolution peculiarities of IIIrd and IVth class by Black.
2. Variants of IIIrd class cavity.
3. Creation of access to cavity of IIIrd class with different localization.
4. Preparation peculiarities and formation peculiarities of IIIrd class cavities.
5. Preparation peculiarities and formation peculiarities of IVth class cavities.
6. Methods of restoration for destroyed angles of frontal teeth.
7. Parapulpal posts (pins). Characteristics.
8. Methods of restoration the angles with parapulpal posts.
9. Rubber dam. Peculiarities of application.

Home work: To draw variants of IIIrd and IVth class cavities by Black before and after preparation.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R. Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 13

Subject: Choice of filling material. Techniques of filling cavities with cements and amalgams.

Place: Dental office.

Time: 6 hours.

The aim of the lesson: to assimilate the correct choice of materials for filling cavities and technique of filling cements and amalgam.

The plan of the lesson:

1. To verify student's knowledge on the subject filling materials: cements and amalgams – 25 min.
2. Practical work: Filling of caries cavities with cements and amalgams – 100 min.
3. Summary – 10 min.

Control questions:

1. Classification of filling materials.
2. Physical chemical properties of filling materials.
3. Requirements for filling materials.
4. Necessary conditions to assure the high quality of filling material.
5. Indices to chose a filling material.
6. Stages for preparing and filling a cavity.
7. The destination of Base (isolation material) in filling with amalgam.
8. What rules must be respected in application of a base material?
9. The peculiarities in filling with amalgam.
10. The peculiarities in filling with cements.
11. Methods of isolation from saliva.
12. The aim of grinding and polishing the filling material.
13. The correct filling of IInd class cavities with amalgams and cements when neighboring teeth are present.
14. Ionomer cements. Indications in application.
15. Varnishes and liners.

Homework:

- to write in the copy-book the classification of filling materials and indications for application.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R. Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 14-15

Subject: Technique of obturation cavities with Composite materials (self – and light curing)

Place: Dental office.

Time: 6 hours.

The aim of the lesson: To assimilate the method of preparation, indications and technique of filling with acrylic materials and composites.

The plan of the lesson:

1. To verify student's knowledge on this subject – 40 min.
2. Practical work: To study materials and technique of filling the caries cavities with different self – and light curing composites – 220 min.
3. Summary – 10 min.

Control questions:

1. Classification of composite materials.
2. What are the physico-chemical properties for composite materials.
3. What are the properties for lightcuring composites.
4. Technique of preparation cavities for application self – and light-curing composites.
5. Instruments for polishing composite materials.
6. Grinding and polishing the filling material.
7. What does smear layer mean?
8. Methods and remedies in etching hard dental tissue.
9. Compomer materials.
10. Adhesive systems and their aim.
11. Hybrid zone.
12. Peculiarities in rinsing and drying the cavity for application Composite materials.

Homework:

- In the notebooks to write the classification of composite materials and their variety.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R. Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 16

Subject: Reconstructive methods of contact point and angle in frontal teeth. Parapulpal pins. Veneers.

Place: Dental office.

Time: 6 hours.

The aim of the lesson: To teach students with reconstructive methods of contact point in obturation of teeth and application of parapulpal pins in restoration of cutting angle.

The plan of the lesson:

1. To verify students knowledge on this subject – 25 min.
2. Practical work: To treat patients with dental caries of frontal teeth; application of different retentive systems and filling cavities with composite materials – 100 min.
3. Summary – 10 min.

Control questions:

1. Doctors' attitude to overhanging enamel margins.
2. What filling materials are used in frontal teeth.
3. What does Rubber dam present and how it is applied.
4. How are parapulpal pins applied?
5. Veneers classification to apply?
6. How must be cavities prepared for veneer application.
7. From what materials are veneers manufactured.
8. Adhesive systems and their importance.

Homework:

- To draw in the copy – books:

1. The correct and incorrect application of the obturation in IInd class cavities in 4.7; 4.6 teeth.
2. To draw the correct and incorrect application of isolating obturation in 4.7; 4.6 teeth.
3. To put down the classification of veneers and to draw veneers in frontal teeth.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount, W. R. Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

PRACTICAL LESSON № 17

Subject: Errors and complications in diagnosis and treatment.

Colloquium

Place: Dental office.

Time: 6 hours.

The aim of the lesson: To teach students the analyze of errors, made during work and to avoid errors and complications in diagnosis and treatment the caries.

The plan of the lesson:

1. To verify the student's knowledge gained all along the semester in subject "Dental caries" – 60 min.
2. Practical work: The study of X-ray films, analysis of patients' observation register with clinical situations, which have been treated and discussed – 75 min.
3. Summary – 10 min.

At the last one lesson to verify student's knowledge and it is over with colloquium that includes: test – control and examination with billet.

References:

1. Preservation and restoration of tooth structure – Graham J. Mount , W. R.Hume
2. Lecture material
3. Propedeutics and Preventive Dentistry – P. Godoroja
4. Pediatric dentistry – P. Godoroja

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Dental Materials

- **Biocompatibility of Dental Materials**
Gottfried Schmalz and Dorthe Arenholt-Bindslev
Berlin: Springer, 2009
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Ulrich Meyer and Hans Peter Wiesmann
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Fabio Meneghini
Berlin: Springer, 2005
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