

CONSERVATIVE DENTISTRY - I PART

LECTURES

ЛЕКЦИИ -ТЕЗИСИ

V семестър, III курс

ЛЕКЦИЯ № 1 - 2 часа

Dental caries.

ЛЕКЦИЯ № 2 - 2 часа

Class I tooth preparation for unaesthetic restorative materials.

ЛЕКЦИЯ № 3 - 2 часа

Class II tooth preparation for amalgam and cast metal restorations.

ЛЕКЦИЯ 4 - 2 часа

Class I and class II tooth preparation for aesthetic materials (direct and indirect).

ЛЕКЦИЯ № 5 - 1 час

Class III and class IV tooth preparation for aesthetic materials and veneers.

ЛЕКЦИЯ № 6 - 2 часа

Class V tooth preparation for direct and indirect materials.

ЛЕКЦИЯ № 7 - 3 часа

The second basic principle in operative treatment of dental caries - Medicatio Cavi dentis.

ЛЕКЦИЯ № 8 - 2 часа

The third basic principle in operative treatment of dental caries - Obturatio Cavi dentis.

ЛЕКЦИЯ № 9 - 2 часа

Dental amalgam. Fabrication of amalgam restorations.

ЛЕКЦИЯ № 10 - 2 часа

Glass-ionomer materials. Types, characteristics. Fabrication of glass-ionomer restoration.

ЛЕКЦИЯ №11 - 2 часа

Dental resin-composites materials - types, characteristics. Indications, contraindications.

ЛЕКЦИЯ № 12 - 2 часа

Dental adhesive systems - application and classification.

ЛЕКЦИЯ № 13 - 2 часа

Fabrication of direct composite material obturations.

ЛЕКЦИЯ № 14 - 2 часа

Indirect cast metal ceramic and composite restorations. CAD/CAM systems.

ЛЕКЦИЯ № 15 - 2 часа

**Cavity preparation and restoration strength of vital teeth with great destructions.
Veneers.**

PRACTICES

УПРАЖНЕНИЯ - ТЕЗИСИ

В семестър, III курс

УПРАЖНЕНИЕ № 1 - 4 часа

DENTAL CARIES

Essences of operative dentistry. Basic principles of treatment — preparation, medication, restoration. External anatomy and histology of the teeth. Tooth numbering. Dental caries - essence, classification, methods of treatment. Cavity — definition, elements Black's classification. Masticatory forces — direction and neutralization. Phases of tooth preparation. Instruments. Short characterization of the basic materials for restoration of the hard tooth tissues.

УПРАЖНЕНИЕ № 2 - 4 часа

CLASS I TOOTH PREPARATION FOR AMALGAM

Class I Restorations - definition. Conservative tooth preparation for Class I amalgam restorations. Tooth preparation for extensive carious lesions. Stages of tooth preparation for amalgam - instruments, resistant cavity form creation, critical analysis of principle “extension for prevention of secondary caries”. Masticatory forces - direction and neutralization. Creating retentions and outlining the cavity. Types of box shapes. Highlights of Class I Tooth Preparation. Dental simulator.

УПРАЖНЕНИЕ № 3 - 4 часа

CLASS II TOOTH PREPARATION FOR AMALGAM

Class II cavity - definition. Types of cavity configurations. Elements of the Class II cavity form. Phases of the amalgam cavity preparation. Masticatory forces - direction and neutralization, resistant cavity walls. Analysis and application of Black's principle “extension for prevention” towards Class II cavity for amalgam - occlusal box, proximal box and ISTMUS - connection between the occlusal and proximal boxes. Different types of macro-

mechanical retentions according cavity width. Different types of Class II cavities according caries localization. Isthmus preparation rules.

УПРАЖНЕНИЕ № 4 - 4 часа

CLASS I AND CLASS II TOOTH PREPARATION FOR UNEASTHETIC RESTORATIVE MATERIALS

Properties of indirect cast restorations, indications, manufacture technique. Nomenclature, basic configurations - inlays, onlays. Class I cavity preparation for cast restorations - special features and main characteristics. Differences between Class I amalgam and metal cast cavity preparations. Instruments and manufacture technique for Class II cast cavity preparations - walls, angles, retentions, beveling, phases, minimal cavity preparation depth.

УПРАЖНЕНИЕ № 5 - 4 часа

CLASS I AND CLASS II TOOTH PREPARATION FOR EASTHETIC RESTORATIVE MATERIALS (DIRECT AND INDIRECT)

Properties of indirect aesthetic restorations (composites and ceramics), indications, manufacture techniques. Nomenclature, basic configurations - inlays, onlays. Types of direct and indirect aesthetic restorations - classification, properties, comparative analysis. Phases of cavity preparation - differences between cavities for amalgam and resin composite, phases' reduction. Evolution of cavity preparation for aesthetic materials - reasons to change the classical approach ("from Black to White"). Phases of cavity preparation for indirect aesthetic materials - differences between cavities for cast restoration and ceramic restoration. Argumentation of terms: resistant cavity form, "extension for prevention", "prevention of extension", and retentive form according aesthetic material requirements.

УПРАЖНЕНИЕ № 6 - 4 часа

PREPARATION CLASS III CAVITY FOR AESTHETIC MATERIALS

Class III Cavities - definition, indications, special features of cavity preparation, instruments. Caries access - different types of configurations of class III (proximal cavity, linguo-proximal, labio-proximal), preparation technique. Masticatory forces - direction and neutralization, specific rules in third phase of cavity preparation (resistant form creation). Type of retention, indications for additional macro-mechanical retentions. Beveling of cavity margins - types, preparation technique, purpose of beveling.

УПРАЖНЕНИЕ № 7 - 4 часа

PREPARATION OF CLASS IV CAVITY FOR AESTHETIC MATERIALS for direct and indirect restorations.

Class IV Cavities - definition, indications, special features of cavity preparation, instruments. Class IV cavities preparation for composite materials — indications, phases of cavity preparation, additional retentive features. Direct and indirect techniques for restoration of frontal teeth with extensive defects. Veneers - types, indications, work stages.

УПРАЖНЕНИЕ № 8 - 4 часа

PREPARATION OF CLASS V CAVITY FOR DIRECT AND INDIRECT RESTORATIONS

Class V Cavities - indications. Specific characteristics of the cervical area of the tooth. Elastic deformation of teeth due to vertical and lateral masticatory forces. Preparation of cavities for restorations with amalgam, glass-ionomer cements, composite materials and indirect techniques - special considerations, differences, retentions.

УПРАЖНЕНИЕ № 9 - 4 часа

MID-TERM TEST ON THE FIRST BASIC PRINCIPLE OF CARIES TREATMENT: PRAEPARATIO CAVI DENTIS (TEST, WRITTEN, ORAL EXAM) INDIRECT CAST METAL INLAYS FOR RESTORING VITAL TEETH.

Nomenclature, types, indications, fabrication techniques, advantages and disadvantages. Taking an impression - direct and indirect technique.

УПРАЖНЕНИЕ № 10 - 4 часа

THE SECOND BASIC PRINCIPLE OF CARIES TREATMENT: MEDICATIO CAVI DENTIS. VARNISHES, LINERS, BASES.

Definition, clinical indications. Dentin wound - characteristics. Basic groups of materials for long-term and short-term medication. Medicaments - classification, pharmacodynamics and application technique. Liners and bases - types, purposes, properties (biological and mechanical requirements). Instruments - specifics in application according to the type of medicament, liner or base. Fabrication technique with different cavity designs. Temporary restorations - types, qualities, indications, application techniques with different cavity designs.

УПРАЖНЕНИЕ № 11 - 4 часа

The second basic principle of caries treatment: obturatio Cavi dentis.

Dental amalgam. Fabrication of amalgam restorations, (по програма)

THE THIRD BASIC PRINCIPLE OF CARIES TREATMENT: OBTURATIO CAVI DENTIS. DENTAL AMALGAM. FABRICATION OF AMALGAM RESTORATIONS.

Definition of the third principle. Obturation materials - clinical requirements. Dental amalgam - definition, types, composition, chemical reactions. Physico-mechanical and medico-biological characteristics of amalgam restorations. Amalgam selection. Mixing (trituration), homogenizing. Matrices and matrix holders - purpose, types, placement and adaptation. Placement and condensation of amalgam. Proximal and occlusal contouring of the amalgam restoration. Fining and burnishing.

УПРАЖНЕНИЕ № 12 - 4 часа

FABRICATION OF AESTHETIC MATERIALS RESTORATIONS - ADHESIVE SYSTEMS, DIRECT OBTURATIONS OF COMPOSITE MATERIALS AND GLASS IONOMER CEMENTS.

Composite materials - definition, composition, types, qualities. Instruments and techniques for the fabrication of direct composite restorations. Adhesive systems - purposes, types. Adhesion to enamel. Adhesion to dentin. Classification of contemporary adhesive systems. The hybrid layer — definition. Characteristics of the micromechanical bond with enamel and dentin. Advantages and disadvantages of adhesive systems. Amalgam bonding. Bonding of ceramic

materials. Glass-ionomer cements - definition, composition, types, and qualities. Indications and work technique.

УПРАЖНЕНИЕ № 13 - 4 часа

FABRICATION OF COMPOSITE RESTORATIONS - INDIRECT COMPOSITE RESTORATIONS.

Indications, basic principles determining the margins of preparation, the contours and occlusion. Advantages and disadvantages of indirect restorations. Taking an impression - direct and indirect technique. Adjusting and cementing of the indirect restorations. Contemporary systems for indirect restorations.

УПРАЖНЕНИЕ № 14 - 4 часа

FINAL TEST ON THE THREE BASIC PRINCIPLES OF CARIES TREATMENT - PRAEPARATIO CAVI DENTIS, MEDICATIO CAVI DENTIS, OBTURATIO CAVI DENTIS.

УПРАЖНЕНИЕ № 15 - 4 часа

ACCEPTANCE OF THE FINISHED PRACTICAL WORK AND VERIFICATION OF THE SEMESTER

LECTURES

ЛЕКЦИИ -ТЕЗИСИ

VI семестър, III курс

ЛЕКЦИЯ № 16 - 2 часа

Endodontics: subject, goal, and objectives. Anatomy of pulp cavity.

ЛЕКЦИЯ №17 - 2 часа

Endodontic treatment - goals, biological and mechanical principles. Rubber dam.

ЛЕКЦИЯ № 18 - 2 часа

Endodontic access.

ЛЕКЦИЯ № 19 - 2 часа

Hand endodontic instruments for cleaning and shaping of the root canal.

ЛЕКЦИЯ № 20 - 2 часа

Contents of cavum pulpaе and root canals. Hand instruments (Barbed broaches).

ЛЕКЦИЯ № 21 - 2 часа

Root canal working length.

ЛЕКЦИЯ № 22 - 2 часа

Machine driven instruments for cleaning and shaping of the root canal system - types, indications. Working technique.

ЛЕКЦИЯ № 23 - 2 часа

Techniques for root canal preparation.

ЛЕКЦИЯ № 24 - 2 часа

Characteristics of the prepared root canal and root canal medication.

ЛЕКЦИЯ № 25 - 2 часа

Root canal obturation - definition, goals, means, methods.

ЛЕКЦИЯ № 26 - 2 часа

Root canal filling materials - pastes that harden inside the root canal - classifications.

ЛЕКЦИЯ № 27 - 2 часа

Obturation of the root canal system with gutta-percha and adhesive systems.

ЛЕКЦИЯ № 28 - 2 часа

Restoration of endodontically treated teeth.

ЛЕКЦИЯ № 29 - 2 часа

Errors and complications in process of endodontic treatment - Part I.

ЛЕКЦИЯ № 30 - 2 часа

Errors and complications in process of endodontic treatment - Part II.

PRACTICES

УПРАЖНЕНИЯ - ТЕЗИСИ

VI семестър, III курс

УПРАЖНЕНИЕ № 16 - 4 часа

ENDODONTICS: SUBJECT, GOAL AND OBJECTIVES

Endodontium - definition. History of endodontics. Topographic anatomy of the pulp cavity in different teeth groups. The pulp cavity - shape, chamber floor with root canal orifices, chamber roof with pulp horns. The root canals - number, location, comparative dimensions, shape. Exceptions to the standard number of canals in a single root. Anatomical apical foramen - definition, location, shape, size. Change of location and size with age, reasons for this change. Anatomical and radiological apex. Physiological apical foramen - synonyms, definition, location, size, changes with age, distance from the anatomical apical foramen.

УПРАЖНЕНИЕ № 17-4 часа

ENDODONTIC TREATMENT - GOALS, BIOLOGICAL AND MECHANICAL PRINCIPLES. RUBBER DAM.

The endodontic triad - preparation, medication, obturation. Isolation of the operative field - types of isolation, devices and working technique. Rubber dam - definition, working technique, importance.

УПРАЖНЕНИЕ № 18 - 4 часа

ENDODONTIC ACCESS

Endodontic access - definition, goals, requirements, stages. Preparation of the endodontic cavity - definition, differences from a caries cavity, access cavities in different teeth groups and various carious lesions. Burs - types and work technique.

УПРАЖНЕНИЕ № 19 - 4 часа

ACCESSING CAVUM PULPAE. FINDING THE ORIFICES.

Contents of cavum pulpaе - pulp tissue, putrid pulp tissue, cements and obturation materials. Instruments and medicaments for their removal - excavator, round bur, hydrogen peroxide, sodium hypochlorite.

Finding the root canal orifices - visually, using a dental probe, configuration of the pulp floor. Securing a free and safe access of the endodontic instruments to the tooth apex - anatomical reasons, instruments and working technique.

УПРАЖНЕНИЕ № 20 - 4 часа

HAND AND MACHINE DRIVEN ENDODONTIC INSTRUMENTS

History of endodontic instruments. Standardization of instruments - essence, lengths, diameters, numbering, color codes according ISO. Shortcomings of conventional standardization system, contemporary changes in standards (ProFile29). Hand endodontic instruments, taper .02 - K-files, K-reamers, H-files, barbed broaches. Characteristics, types, working technique, bland endodontic instruments, taper .04, .06 et. - ProFile .04, GT, MicroOpener. Machine driven endodontic instruments - Gates-Glidden, Largo, and NiTi - ProFile, ProTaper, GT, K3, LightSpeed, Quantec. FlexMaster, RaCe et. Basic characteristics of NiTi alloy and endo-instruments - tapers, sizes, symbols, designation. Instruments with reciprocal movement - left and right (Giromatic, Micromega, W&H, WaveOne, Reciproc). Instruments with forward/backward motion and combined movements. Endosonic instruments - ultrasonic mechanism and working action, working technique, devices.

УПРАЖНЕНИЕ № 21 - 4 часа

CONTENTS OF THE ROOT CANALS AND INSTRUMENTS FOR THEIR REMOVAL

Root canal contents - characteristics. Eland instruments for removing soft pulp tissue. Barbed broaches - characteristics, working technique when removing vital pulp tissue and putrid pulp tissue. Machine driven files for removal of soft pulp tissue - hand-pieces Giromatic. Instruments for initial scouting of the root canals.

УПРАЖНЕНИЕ № 22 - 4 часа

ROOT CANAL WORKING LENGTH – DEFINITION

Coronal and apical part of the root canal. Methods for establishing working length - anatomical, clinical, radiographic, electrometric. Anatomical methods for establishing working length - definition, tables with average values, crown/root proportion, comparison between symmetrical teeth, critical analysis. Clinical methods - DTSAC and PS - anatomical prerequisites for their application; working technique and instruments; advantages and disadvantages - critical analysis. Radiographic methods - radiography, mathematical technique with an instrument in the root canal, mathematical with a vestibular standard post, method for correction of the mistake; critical analysis. Electrometrical methods - definition, physiological explanation, apparatuses, working technique, advantages, disadvantages; influence of the root canal techniques on the accuracy of the electrometrical methods. Ways for fixing the endodontic working length on the instruments.

УПРАЖНЕНИЕ № 23 - 4 часа

HAND ENDODONTIC INSTRUMENTS FOR CLEANING AND SHAPING OF THE ROOT CANAL. WORKING TECHNIQUE.

Types of hand endodontic instruments - Kerr reamers, Kerr files, Hedstrom files, Rash files, flexible instruments for cleaning and shaping of the root canals and instruments for enlarging of the apical foramen. Instrument standardization - lengths, diameters, ISO numbering system and colour coding.

УПРАЖНЕНИЕ № 24 - 4 часа

MACHINE DRIVEN INSTRUMENTS FOR CLEANING AND SHAPING OF THE ROOT CANAL SYSTEM - TYPES, INDICATIONS. WORKING TECHNIQUE.

Advantages and disadvantages of the machine driven cleaning and shaping. Historical development of the various instruments and systems for machine driven cleaning and shaping. Instruments with reciprocal movement - left and right, 45° motion - Giromatic, Micromega, W&H. Instruments with combined movements - left/right and forward/backward motion - Canal Leader (SET, Germany) system. Endosonics - definition, working mechanism, apparatuses. Rotary NiTi instruments. Basic characteristics of the NiTi instruments, sizes, symbols, designations. Systems for machine driven cleaning and shaping of the root canals. NiTi instruments with forward/backward movement - Reciproc, Wave-One.

УПРАЖНЕНИЕ № 25 - 4 часа

TEST ON ENDODONTIC ACCESS, WORKING LENGTH, INSTRUMENTS AND TECHNIQUES FOR ROOT CANAL PREPARATION. CHARACTERISTICS OF THE PREPARED ROOT CANAL AND ROOT CANAL MEDICATION.

Free dentinal debris, smear layer, contents of the dentinal tubules. Short-term medication and pharmacological activity - 3% hydrogen peroxide, sodium hypochlorite, etc. Final root canal irrigation - meaning, devices, methods. Working technique - Miller needles, syringes and needles for irrigation, irrigation systems. Advantages. Long-term medication - calcium hydroxide, potassium iodide, etc. - pharmacodynamics.

УПРАЖНЕНИЕ № 26 - 4 часа

ROOT CANAL OBTURATION - DEFINITION, GOALS, MEANS, METHODS.

Apical and coronary boundaries of the root canal obturation. Classification of root canal filling materials - soft, soluble pastes that do not harden inside the root canal; soft pastes that harden inside the root canal; sealers; gutta-percha; dental adhesives. Pastes that do not harden inside the root canal - historical review - iodoform-based, tricresol-formalin-based and trioxymethylene-based - contents, pharmacodynamics and indications, medicated non-hardening pastes - calcium hydroxide-based, antibiotics and chemotherapeutic mixtures - contents, pharmacodynamics and indications.

Instruments and methods for paste filling - Lentulo spiral fillers, syringes with a rotating piston, Miller needle with a cut tip. Criteria for filling the root canal with paste and a Lentulo spiral filler.

УПРАЖНЕНИЕ № 27 - 4 часа

ROOT CANAL FILLING MATERIALS - PASTES THAT HARDEN INSIDE THE ROOT CANAL - CLASSIFICATION.

Types, contents, pharmacodynamics and indications. Eugenol-based pastes; formalin-resorcinol-based, pastes that are plasticized with acids - phosphatic, polycarboxilatic, calcium hydroxide and glass-ionomer cements; pastes based on epoxide and other resins. Instruments and methods for filling root canals with pastes. Posts for firming up the paste filling - types, advantages and disadvantages.

УПРАЖНЕНИЕ № 28 - 4 часа

OBTURATION OF THE ROOT CANAL SYSTEM WITH GUTTA-PERCHA AND ADHESIVE SYSTEMS.

Gutta-percha as a material for filling root canals - definition, types, qualities. Lateral condensation - instruments, standard and accessory posts, sealers and their significance. Working technique. Advantages and disadvantages of this method. Vertical condensation - definition, instruments, methods. Gutta-percha plasticization methods - thermo- and ultrasonic technique. The Thermafill system - definition, advantages and disadvantages. New concepts in root canal obturation - adhesive materials. Errors and complications during obturation.

УПРАЖНЕНИЕ № 29 - 4 часа

FINAL TEST ON ENDODONTIC TREATMENT.

УПРАЖНЕНИЕ № 30 - 4 часа

HANDING IN OF THE FINISHED PRACTICAL WORK AND VERIFICATION OF THE SEMESTER.

X-RAY ASSESMENT.