**State University of Medicine and Pharmacy**

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***Department***

***Odontology, periodontology and oral pathology***

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**Methodological elaborations**

**”Clinical Periodontology”**

**for IV year students,**

**semester VIII**

**Time – 6 hours**

**The plan of the lesson:**

**Theme discussion – 45 min**

**Patient demonstration on theme – 45 min**

**Clinical work with students – 145 min**

**Checking the individual work – 15 min**

**Checking the medical records - 15 min**

Total of practical hours – 42 hours

**Total of theoretical hours– 18 hours**

**Thematic plan of practical lessons**

**1. Periodontology as medical science. Goals and tasks. Principles of organizing the periodontal care. Terminology and glossary.**

**2-3. The marginal periodontium. The notion of superficial and supportive marginal periodontium . Anatomo-physiological particularities of marginal periodontium, structure and functions.**

**4. Etiology, pathogenesis, modern conception in the onset and evolution of periodontal disease. Classification of periodontal disease.**

**5.** **Patient examination with periodontal disease. Instruments and methods of examination, diagnosis establishment.**

**6. Methods and instruments for dental deposits removal. Techniques and procedures of dental deposits removal. Professional brushing. Remedies and medications.**

**7-8. Gingivitis. Notion. Etiology. Pathogenesis. Classification. catarrhal, ulcerative, descuamative, hypertrophic gingivitis. Etiology, pathogenesis, clinical picture, positive and differential diagnosis. Treatment. Prophylaxis.**

**9. Marginal periodontitis. Notion. Degree of morbidity. Etiology, pathogenesis. The role of local and general factors in the onset and evolution of this process.**

**10-11. Complex treatment of marginal periodontitis (local and general). Treatment plan. Initial treatment (periodontal, dental / endodontic, surgical, temporary prosthetic). Corrective treatment (surgical and prosthetic) and maintenance treatment.**

**12. Local treatment of marginal periodontitis. Manual scaling, ultrasonic, sonic, Air-Flow, professional brushing. Tools, equipment, medication and antiseptics, including anesthetics, procedures and techniques.**

**13. Recapitulation.**

***Terminology and glossary***

**Abscess** – collection of circumscribed pus, that appears after an inflammatory process.
**Periodontal abscess** - a collection of pus formed in a periodontal pocket. It can also be defined as : lateral a .; lateral alveolar a., parietal a., peridental a.

**Abfraction -** pathological loss of the dental structure in the V-shape deffects,

caused by biomechanical forces: flexion, compression or tension.

**Abrasion** (abrassion) - the action of wear due to friction due to abnormal mechanical, non-physiological forces.

**Acanthosis** - Excessive thickening of the malpighian layer of the epithelium

**Dental alveolus** - complex of hard, bone and soft structures that provide fixation and maintain the teeth in the maxillary bones.

**Alveolectomy** - total or subtotal excision of the alveolar process at maxila or mandible.

**Ankylosis** (ankylosis also called arthrokleisis) - Immobilization of a joint in human body after a trauma or surgery.

**Anisodontia -** asymmetry, irregularity of shape and volume of teeth.

**Ankiloglosia (lingua frenata)** - reducing language movements.lingua frenata

**Ankilotomia** - surgical reduction of ankiloglosia.

**Aptialism** - the reduction or absence of salivary secretion.

**Attachment** structural complex between the tooth, epithelium and periodontal tissue
**Attached gingiva** (engl.)- fixed gingiva

**Axenic**  - uncontaminated by foreign bodies or microorganisms;"Germ-free".

**BARLOW Disease** - a deficiency caused by deficiency of vitamin C in children; scurvy

infant.

**Biofilm** - a thin layer of microorganisms adhering to the surface of an organic or inorganic structure, together with the polymers that they synthesize

**Biomodulator** – something that is modifying the biological response.

**Biotherapy** - Biological treatment.

**Cauterization** - chemical, thermal, electrical destruction by laser therapy of an excess portion of excess tissue through hyperplasia proliferation on a normal tissue substrate or after surgery at wound edges as a form of relapse shortly after surgery.

**Cauterization** **of the soft wall (sulcus)** - the action of dissolving micro-ulcerations by using a chemical, when the gingival curettage by mechanical means, even with the finest and sophisticated tools fails to achieve results.

**Cementicle** - a small calcification structure in the periodontal ligament with or without cement structure.

**Cementoma** - a benign tumor of the root cement.

**Giant cementoma** - cement mass developed in excess, lobular, which can cause deformity hypertrophy jaw bone. Also called multiple family cement.
**Cementoperiostitis**- marginal periodontitis

**Curette** - Spoon-shaped instrument with a convex surface and on the opposite face a concave with sharp edges, sharp. Used to remove from the cavity of a tissue or of an excessively high structure.

**Curettage** – process of removal from the level the walls of a cavity or a surface of excess tissue or foreign material.
**Gingival Chiuretage** - removal with a curette from the soft wall of the gingival sulcus and of the junctional epithelium of the microgrowth circumscribed and covered by epithelial tissue and tissue connective granulating subiacent.

**Root curettage** - Periodontal mechanical treatment of the tooth root.

**Subgingival curettage** - instrumental removal of the pathological content of periodontal pockets
**Occlusal clearance** - when occlusal surfaces glide freely without interference between them.
**Collutory-** mixture of substances medicaments embedded in a semiliquid vehicle, typically glycerin, administered to the gums and mucous membranes of the mouth.

**Contiguity** - a state in which two or more surfaces or organs are in contact.

**Gingival debridement** - v. Periodontal mechanical treatment.

**Dental Deposits**-v. Dental calculus and bacterial dental plaque.

**Dental calculus** - organic-mineral complex deposited on the tooth surface, super- and subgingival

**Scalling** - v. Periodontal mechanical treatment.

**Dentifrice** - powdered products, paste or gel used to clean accessible tooth surfaces and gums.

**Dentinalgia** - painful sensation caused by excessive instrumentation of the root surface with gingival retraction following the healing of some deep periodontal pockets after surgery.
**Epulis (epoulis)** - nonspecific term for tumors or tumor masses from the gum. It describes: congenital epulis, fibromatous, with giant cells, granulomatous, angiomatous cells.

**Erosion** - destructive process of dental substance produced by chemical substances, with non-bacterial involvement.

**Gingival fissure** - elongated fissure of the gum above an area of the alveolar bone dehiscence.

**Fulguration**- tissue destruction under the action of a high current frequency; method of treatment of dentinal hyperesthesia.
**Germ-free** (engl.)- v. Axenic.

**The interdental gum/gingiva** - the portion located between the proximal surfaces between two neighboring teeth.

**Septal gum** - Gingival portion located between lateral teeth.
**Gingivalgia - gingival pain.**

**Fagedenic gingivitis (phagedaina)** - acute ulcero-necrotic gingivitis.
**Glosophitia** – black tongue.

**Glosotrichia** – hairy tongue.

**Gomphosis**  - a fibrous joint through which a conical element is fixed in a place like a nail in a plank. Dentoalveolar syndesmosis.

**Halisteresis** (hal + gr steresis) - loss of calcium salts from the structure

of the bone.
**Halitosis -** bad breath.

**Herpangina** - acute virotic infection at the level of hay fever with vesicles and ulcerations. Also called vesicular pharyngitis, Zaborsky's syndrome.

**Gingival and dental junction** - joint between the gum and the tooth through junctional epithelium and epithelial insertion.

**Limbus, alveolar limbus** - the terminal portion of the interdental septum and

alveolar bone.

**Ligature** - a way of temporary contention of periodontal affected teeth by using metal or plastic threads.

**Mobilometry** - measurement of normal or pathological dental mobility.
**Mobilometer -** dento-periodontal device used to measure physiological and pathological mobility of the teeth.
**Muguet (muguet, mycotic stomatitis, white mouse)** - ulcers of oral mucousa coated with me mbranes of Candida albicans whitewash deposits.

**Neoinsertion** - restoration of the gum-dental junction after treatment surgically removing a periodontal bag.
**Odontolit-** v. dental calculus

**Osteopenia** - reducing bone density by decreasing the number of osteoblasts.

**Osteoporosis** - bone injury characterized by reduction in thickness and density of bone trabeculae that occurs under some circumstances such as: postmenopausal, elderly and predisposing to sedation bone fractures, especially in vertebrae, forearm, cervix femoral, but also in other bones, including maxillary and alveolar bones.
**Gingival recession (widening)** - Gingival retraction

**Reinsertion** - restoration of the gingival -dental junction after surgical treatment to restore gum level of the tooth

**Scalling** (engl.)- v. mechanical periodontal treatment
**Stomatodisodia**- v. halitosis
**Sindrom Zaborsky**- v. Herpangina.
**Tartar**- v. dental calculus.

**Practical lesson nr.1**

**Theme:Periodontology as medical science. Goals and tasks. Principles of organizing periodontal care.** **Terminology and glossary**

**Location: University Clinic, medical room**

**Time - 6 hours**

**Lesson Plan:**

**Topic discussion - 45 min**

**Patient demonstration on theme - 45 min**

**Clinical work with students - 145 min**

**Verification of individual work - 15 min**

**Verification of medical records -15 min**

**Verification questions:**

1. Periodontology. Definition. Goals and tasks.

2. Particularities of periodontology as a specialty in dentistry.

3. Terminology and glossary.

4. Basic principles of organization of dental / periodontal care. Requirements for the organization of the dental office.

5. Dental medical documentation in the department of periodontology.

**Annotation**

**Periodontology** - is a speciality of dentistry that deals with the pathologies that affect the surrounding tissues of the tooth, including gum, cementum, periodontal ligaments and alveolar bone.

There are two directions in the periodontology: therapeutic and surgical, but which, depending on the clinical situation, are often indispensable for each other.

Currently, there are used more classifications of periodontal disease, in order not to appear misunderstanding between practitioners and researchers, they need to know the terminology and glossary used in periodontology.

**Individual work**

1. To do a presentation in powerpoint on lesson’s theme, with respecting the requirements of the presentation and bibliografical sources.

**Bibliography**

1. E. Borovski Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale institutelor de medicina . - Chisinau : Lumina, 1990

1. Eni, Ana. Parodontologie : (prezentare schematică, ghid didactico-metodic) / A. Eni ; Universitatea de Stat de Medicină şi Farmacie "Nicolae Testemiţanu". - Chişinău : Medicina, 2003.
2. V. Chetruș ” Aspecte de etiologie, diagnostic și tratament ale parodontitelor marginale cronice”. Ed. Epigraf, Chișinău, 2007
3. I.Postolachi, Protetică dentară – Chișinău, Științe, 1993
4. Ciobanu S. Tratamentul complex în reabilitarea pacienților cu parodontită marginală cronică. Ed. Almor-Plus, Chișinău. 2012
5. Dumitriu H.T. Parodontologie. Ed. Viața Medicală Românească. București 1997, 2009
6. Dumitriu H.T. Tratat de parodontologie. Ed. Viața Medicală Românească, București 2015
7. Sculean A. Terapia parodontală regenerativă. Quintessence International România, 2013

**Practical Lesson nr.2, 3**

**Theme: The marginal periodontium. The notion of superficial and supportive marginal periodontium . Anatomo-physiological particularities of marginal periodontium, structure and functions.**

**Time - 6 hours**

**Lesson Plan:**

**Topic discussion - 45 min**

**Patient demonstration on theme - 45 min**

**Clinical work with students - 145 min**

**Verification of individual work - 15 min**

**Verification of observation records -15 min**

**Verification questions: Superficial marginal periodontium**

1. Marginal periodontium. Definition.Structure. Functions.

2. Superficial marginal periodontium. Definition. Structure. (Types of ligament / fibers of superficial marginal periodontium).

3. Gingiva, (papilar, marginal, fixed). Types of gingiva (structure)

4. Clinical signs of healthy gingiva (color, texture, consistency).

5. Gingival structural components (gingival epithelium, connective tissue).

6. Gingival sulcus. Definition. Structure. Composition. (gingival crevicular fluid - functions).

7. The sulcular epithelium. Structure and Functions.

8. The junctional epithelium (JE). Structure. Functions. The role in the development of periodontal disease.

9. The notion of biological space. Definition. The width of the biological space.

**Supportive marginal periodontium**

1. Supportive marginal periodontium

2. Alveolar bone (cortical and spongy bone).

3. Root cementum. The types. Structure and Functions.

4. Periodontal / desmodontium space. Structure and Functions.

5. Vascularization and innervation of marginal periodontium.

6. Biomechanics of the tooth. The notion of "hypomochlion".

7. The role of tooth biomechanics in the onset and evolution of periodontal disease.

8. Notion of resorption and bone remodeling.

**Annotation**

**The marginal periodontium** has two main components:

**Superficial periodontium** - made from epithelium with: gingival epithelium; gingival corion, superalveolar ligaments.

**The supportive periodontium**- supportive or functional periodontium, consisting of: root cementum, desmodontium, alveolar bone.

**The basic functions of the marginal periodontium:**

**The function of protection** of the underlying tissues against the action of mechanical, thermal, chemical and microbial factors is ensured by the integrity of the epithelium and increased resistance due to keratinization and increased fiber content of the corion.

**Absorption and resorption function**-epithelial cells are permeable to hydro and liposoluble substances.

**The external epithelium is squamous, pluristrated, keratinized or parakeratinized,** presenting numerous digits to the underlying papillary corion. It is composed of 4 layers:

**-the basal layer:**

**-the spinous layer;**

**-the granular layer;**

**-the corneum layer;**

**Gingival corion** consists of:

- the fundamental substance consisting of non-fibrous molecular constituents

-celule

- collagen and elastin fibers

-vessels and nerves.

**The supportive periodontium:**

Tooth cementum is a rough, mineralized tissue located on the root surface of the tooth. It represents the dento-alveolar ligaments fixation site. It is a matte appearance tissue with a lower hardness than of the dentine. The permeability is higher than of the dentin. The thickness of the layer is variable, being thicker to the top of the root (150-200 microns) and thinner to the junction with the enamel (20-60 microns).

**Chemical characteristics of cement:**

**Mineral component** - 45-50% - hydroxyapatite, phosphates, carbonates

**Organic component** - 50-55% - collagen and glycoproteins

We distinguish two types of cement:

• **Acelullar (primary) cementum** - first deposited and covers all of the root dentine, being disposed in a radial canal system that assures the development of metabolic processes.

• **Cellular (secondary) cementum** - is located at the periphery of acellular cementum, especially in the apex zone and in the interdictional furnace areas. It has in its structure lacunar spaces oriented parallel to the cementocyte-bearing surface (cells specialized in forming the organic matrix of cementum).

• **Alveolar bone.**

The alveolar bone is that part derived from the maxillary bones that serves to support and maintain the teeth. The alveolar bone is an apophysial prolongation of the jaw bone and consists of:

-**the alveolar bone;**

-**the supporting alveolar bone.**

**Individual work**

1. Achievement of the thematic project - in powerpoint, with respect to the bibliographic references and sources.

**Bibliografie**

1. Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale

 institutelor de medicina / sub red. E. Borovski. - Chisinau : Lumina, 1990

1. Eni, Ana. Parodontologie : (prezentare schematică, ghid didactico-metodic) / A. Eni ; Universitatea de Stat de Medicină şi Farmacie "Nicolae Testemiţanu". - Chişinău : Medicina, 2003.
2. V. Chetruș ” Aspecte de etiologie, diagnostic și tratament ale parodontitelor marginale cronice”. Ed. Epigraf, Chișinău, 2007
3. I.Postolachi, Protetică dentară – Chișinău, Științe, 1993
4. Ciobanu S. Tratamentul complex în reabilitarea pacienților cu parodontită marginală cronică. Ed. Almor-Plus, Chișinău. 2012
5. Dumitriu H.T. Parodontologie. Ed. Viața Medicală Românească. București 1997, 2009
6. Dumitriu H.T. Tratat de parodontologie. Ed. Viața Medicală Românească, București 2015
7. Sculean A. Terapia parodontală regenerativă. Quintessence International România, 2013

**Practical Lesson nr.4**

**Theme: Etiology, pathogenesis, modern conception in the onset and evolution of periodontal disease. Classification of periodontal disease.**

**Time - 6 hours**

**Lesson Plan:**

**Topic discussion - 45 min**

**Patient demonstration on theme - 45 min**

**Clinical work with students - 145 min**

**Verification of individual work - 15 min**

**Verification of observation records -15 min**

**Verification questions:**

1. The role of local factors in the onset and evolution of periodontal disease.

2. The biofilm. Notion. Stage of formation and structure of microbial biofilm. (Realized pellicule, irreversible adhesion.)

3. Bacterial plaque. Notion. Stages of bacterial plaque formation.

4. Supragingival bacterial plaque. Composition. Its action on gingival tissues.

5. Subgingival bacterial plaque. Composition. Its action on periodontal tissues.

6. Dental calculus. Definition. Classification (supragingival, subgingival). Stages and mechanism of dental calculus. The mineral and organic composition of dental calculus.

7. The role of soft and hard deposits in the development of periodontal disease.

8. The role of B cells, T cells, cytokines, IgG, IgA and IgM in the gingivitis development stage.

9. Phases of acute inflammation (vascular phase).

10. The role of general factors in the onset and evolution of periodontal disease (gingivitis, marginal periodontitis).

11. Classification of Periodontal Disease (WHO, MMC, Amsterdam 2018).

**Annotation**

In the development of marginal periodontitis, **local and general etiological** factors are involved.

**Local Factors:**

- bacterial plaque

- physiological factors (saliva, local immunity)

**General Factors:**

- heredity

- endocrine pathologies

- Nervous system disorders

- cardiovascular diseases

- haematological disorders

- food or metabolic defects

The **bacterial plaque** is a deposit consisting of bacterial aggregates adhering to the dental surfaces or other solid surfaces (obturations, dental crowns, prostheses) from the oral cavity through a matrix. It is located especially in the area of the tooth cervical zone, between the interdental spaces, occlusal fissures. The old plaque on the teeth surfaces calcifies and forms the calculus especially on dental surfaces in the area of the major salivary ducts (the lingual surface of the lower incisors, and the vestibular surface of the upper molars). We distinct the supragingival and subgingival plaque.

Composition: The first layer of the microbial plate consists mainly of glycoproteins, where large amounts of proline and glycine, glutamic acid amino acids are found. The first species of bacteria that adhere to the pellicle are oral streptococci, and Neisseria gram negative cocci. In mature plaque, epithelial cells, leucocytes, erythrocytes, food particles and protozoa are also observed. Mature plaque has the ability to rapidly metabolize sucrose from food intake through the glycolic chain, producing organic acids that provide a deep cleavage, and prolonging the pH of the plate, initiating the process of demineralisation of the enamel.

Dental calculus is an organo-mineral deposition resulting from the calcification of the bacterial plaque. It can be located on teeth, fixed and mobile dental prosthetic construction, on dental implants and orthodontic appliances located in the oral cavity.

In relation to its disposition towards the free gingival margin and the contour of the interdental papilla, the dental tartar may be supragingival or salivary and subgingival calculus, or serum calculus, depending on the main origin of its components: predominantly from saliva and gingival blood extravasations.

Supragingival calculus is a white-yellow organo-mineral deposit with low consistency at first; immediately after deposition it is brittle, soft, and easily dislocated.

The subgingival calculus is dark brown or black, dense, often very difficult to dislodge, disposed in the gingival sulcus under the free gingival margin, presenting lamellar deposits with a rough, irregular surface.

Subgingival calculus has different forms:

l. Crust with rough surface;

2. Spinous deposits;

3. Nodular formations;

4.Circular or partially circular bend;

5. With smooth surfaces or with surface free from irregularities.

6. Island of calculus, island stains.

From the point of view of the depth, the subgingival calculus can be located along the root: - apical; - into the middle area; - coronary

The composition of dental calculus:

- mineral substances - 75-85% (calcium ions, phosphate and carbonate, sodium ions, magnesium, potassium, very small amounts of chlorine, zinc, strontium)

-organic substances 15% (rests of dead microorganisms, descuamated epithelial cells, leukocytes).

Individual work

1. Make a thematic project - in powerpoint, with respect to the bibliographic references and sources.

**Bibliografie**

1. Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale

 institutelor de medicina / sub red. E. Borovski. - Chisinau : Lumina, 1990

1. Eni, Ana. Parodontologie : (prezentare schematică, ghid didactico-metodic) / A. Eni ; Universitatea de Stat de Medicină şi Farmacie "Nicolae Testemiţanu". - Chişinău : Medicina, 2003.
2. V. Chetruș ” Aspecte de etiologie, diagnostic și tratament ale parodontitelor marginale cronice”. Ed. Epigraf, Chișinău, 2007
3. I.Postolachi, Protetică dentară – Chișinău, Științe, 1993
4. Ciobanu S. Tratamentul complex în reabilitarea pacienților cu parodontită marginală cronică. Ed. Almor-Plus, Chișinău. 2012
5. Dumitriu H.T. Parodontologie. Ed. Viața Medicală Românească. București 1997, 2009
6. Dumitriu H.T. Tratat de parodontologie. Ed. Viața Medicală Românească, București 2015
7. Sculean A. Terapia parodontală regenerativă. Quintessence International România, 2013

**Practical lesson nr.5**

Theme: Examination of patient with periodontal disease. Instruments and methods of examination, diagnosis establishment.

**Time – 6 hours**

**The plan of the lesson:**

**Theme discussion – 45 min**

**Patient demonstration on theme – 45 min**

**Clinical work with students – 145 min**

**Checking the individual work – 15 min**

**Checking the observation cards - 15 min**

**Verification questions:**

1. Clinical examination: subjective (anamnesis), clinical-objective (instrumental examination).

2. Periodontometry. Notion. Clinical criteria of evaluation during periodontal examination (establishment of the periodontal status) – level of free gingival margin, depth of periodontal pocket, loose of clinical attachment, mobility, bleeding, suppuration, color, contour, texture, consistence of gingival tissue. Methods of bacterial plaque detection.

3. Indices of evaluation the periodontal disease (Plaque index, calculus index, index of gingival/periodontal inflammation).

4. Instruments for clinical - objective examination of patient with periodontal disease.

5. Periodontal probe. Types. Electronic probe – Florida probe.

6. Paraclinical examination. Purpose and objectives. Methods of paraclinical examination: radiographical (OPG, RVG, CT), laboratory (complete blood analyze, biochemistry blood test), microbiologic tests (bacteriologic test, PCR). Their role in definitive diagnosis establishment of periodontal disease.

7. Diagnosis establishment. Criteria. The preventive, differential, definitive diagnosis.

**Annotation**

Periodontometry is realized with a calibrated periodontal probe, inserted in gingival sulcus or periodontal pocket, as close as possible to the surface of the tooth. Periodontal probes have thin active parts, marked, but head is rounded. In periodontometry can be used the following types of periodontal probes:

- CP12 - 3,6,9,12mm. -Michigan - 3,6,8 mm.-Williams - 1,2,3,5,7,8,9, 10 mm.-Goldman -1,2,3,5,7,8,9, 10 mm-Plast-Probe: 3,6,9 mm.

The periodontal probe is advanced in depth untill a resistance is felt, the measurements should be done in three points of vestibular and lingual surfaces of each tooth, after performing the scaling.

The probe must be maneuvered such as not to be blocked on supragingival calculus. The level until where the probe get: probe width, insertion force in the pocket, access inside the pocket and presence of deposits.

Resulted data after periodontal probing: the loss of clinical attachment, bleeding, furcation lesion, periodontal pocket depth are fixed in periodontal chart.This allows an objective monitorization of patient with marginal periodontitis at all treatment stages.



**Individual work**

1. To realize the thematic project in power pint, respecting the arrangement and bibliography.

**Bibliography:**

1. Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale

 institutelor de medicina / sub red. E. Borovski. - Chisinau : Lumina, 1990

1. Eni, Ana. Parodontologie : (prezentare schematică, ghid didactico-metodic) / A. Eni ; Universitatea de Stat de Medicină şi Farmacie "Nicolae Testemiţanu". - Chişinău : Medicina, 2003.
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3. I.Postolachi, Protetică dentară – Chișinău, Științe, 1993
4. Ciobanu S. Tratamentul complex în reabilitarea pacienților cu parodontită marginală cronică. Ed. Almor-Plus, Chișinău. 2012
5. Dumitriu H.T. Parodontologie. Ed. Viața Medicală Românească. București 1997, 2009
6. Dumitriu H.T. Tratat de parodontologie. Ed. Viața Medicală Românească, București 2015
7. Sculean A. Terapia parodontală regenerativă. Quintessence International România, 2013

**Practical lesson nr.6**

**Theme: Methods and instruments for dental deposits removal. Techniques and procedures of dental deposits removal. Professional brushing. Remedies and medications.**

**Time – 6 hours**

**The plan of the lesson:**

**Theme discussion – 45 min**

**Patient demonstration on theme – 45 min**

**Clinical work with students – 145 min**

**Checking the individual work – 15 min**

**Checking the observation cards - 15 min**

**Verification questions:**

1. Scaling. Notion. Manual and mechanical techniques of scaling.

2. Types of scalers. Sonic and ultrasonic scaler. ( Magnetostrictive ultrasonic scaler, piezoelectric ultrasonic scaler). Mechanism of action.

3. Indications for manual and ultrasonic scaling.

4. Contraindications to ultrasonic scaling. Protection measures.

5. Professional brushing. Technique and remedies. Airflow, notion, indications, contraindications.

6. Evaluation the efficiency of proffesional hygiene by bacterial plaque control. Procedures and remedies.

**Adnotation**

Scaling represents a procedure to remove supra and in special the subgingival calculus with manual instruments dedicated for scaling and ultrasonic and sonic devices.

**- instruments for manual scaling and radicular curettage**: sickles, hoes, curettes,

- **instruments for fine planning and polishing the dental surfaces after scaling**: rosette rubber funnels, rotary brushes, abrasive bands and polishing bands.

There are two types of scalers: **sonic and ultrasonic** ( with **piesoelectric effect** and **magnetostrictive effect**).

Magnetostictive type is practically replaced with that piezoelectric ( it is tolerated by cardiac patients). Active part of piezoelectric type can have spatula, sickle, probe shape.

Mechanism of action the magnetostrictive scales: it occurs by the conversion of electric energy in magnetic energy, in form of fast vibrations.

Trajectory:

a. forward-backward

b. circular

c. eight shape

Mechanism of action for piezoelectric scaler: these devices use high pulses frequency which produce ultrasonic effect, are preferable to those with magnetostrictive action, and sonic devices. They are tolerated by heart disease patients with a pace maker.

**Mechanism of action of sonic scales:** they are similar to ultrasonic but trained by a powerful air jet, placed in place of the turbine piece. Disadvantage: low vibrational effect.

**Individual work**

1. To realize the thematic project in power pint, respecting the arrangement and bibliography.

**Bibliography:**

1. Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale

 institutelor de medicina / sub red. E. Borovski. - Chisinau : Lumina, 1990

1. Eni, Ana. Parodontologie : (prezentare schematică, ghid didactico-metodic) / A. Eni ; Universitatea de Stat de Medicină şi Farmacie "Nicolae Testemiţanu". - Chişinău : Medicina, 2003.
2. V. Chetruș ” Aspecte de etiologie, diagnostic și tratament ale parodontitelor marginale cronice”. Ed. Epigraf, Chișinău, 2007
3. I.Postolachi, Protetică dentară – Chișinău, Științe, 1993
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6. Dumitriu H.T. Tratat de parodontologie. Ed. Viața Medicală Românească, București 2015
7. Sculean A. Terapia parodontală regenerativă. Quintessence International România, 2013

**Practical lesson no. 7, 8**

**Theme: Gingivitis. Notion. Etiology. Pathogenesis. Classification. catarrhal, ulcerative, descuamative, hypertrophic gingivitis. Etiology, pathogenesis, clinical picture, positive and differential diagnosis. Treatment. Prophylaxis.**

**Time - 6 hours**

**Lesson Plan:**

**Topic discussion - 45 min**

**Patient demonstration on theme - 45 min**

**Clinical work with students - 145 min**

**Verification of individual work - 15 min**

**Verification of observation pads -15 min**

**Verification questions:**

1. Notion of gingivitis.

2. Etiological, local and general factors, the pathogenic mechanism in the onset and evolution of gingivitis.

3. Initial lesions of gingivitis. Early lesions of gingivitis. Signs of acute gingivitis , chronic and advanced stage.

  4. Classification of gingivitis.

5. Gingivitis induced by bacterial biofilm. Catarrhal gingivitis. Etiology, pathogenesis, clinical picture, positive and differential diagnosis. Treatment. Prophylaxis.

6. Gingivitis induced by bacterial biofilm. Ulcero-necrotic gingivitis. Etiology, pathogenesis, clinical picture, positive and differential diagnosis. Treatment. Prophylaxis.

II. Gingivitis non-induced by bacterial plaque.

7. Descuamative gingivitis. Etiology, pathogenesis, clinical picture, positive and differential diagnosis. Treatment. Prophylaxis.

8. Hypertrophic gingivitis. Pregnancy gingivitis. Etiology, pathogenesis, clinical picture, positive and differential diagnosis. Treatment. Prophylaxis.

9. Gingival dilatation influenced by drugs

10. Fibromatic-hereditary gingivitis.

**Annotation**

**Gingivitis (inflammation of the gum)** - is the most common form of periodontal disease. This form of gingival inflammation occurs in response to the presence of bacterial plaque and predisposing factors (lack of oral hygine, unproper dental filling, teeth crowding, weak or absent interdental contact points, etc.) that predispose to the accumulation of plaque in these areas. Gingivitis is the precursor form of chronic marginal periodontitis.

**Etiology**

**Etiological factors:** a) local, b) general (systemic), c) some vicious habits.

**Local Factors:**

 - bacterial plaque and calculus

 - proximal or cervical odontal lesions and overflow or cervical obturations

 - some orthodontic abnormalities (eg dento-alveolar crowding incongruity) and the wearing of orthodontic devices, especially fixed devices.

**Systemic factors:**

- hormonal influences (puberty, pregnancy)

- general disorders: haematological disorders, genetic disorders (eg Down syndrome),

- metabolic disorders (diabetes mellitus), HIV / AIDS immunological disorders

- administration of some medicines (immunosuppressive, cytostatic, neuroleptic)

- malnutrition.

**Vicious habits** that play a role in the etiology of gingivitis ,oral respiration.

The microbial factor - the bacterial plaque, has a determining role in the production of gingivitis, the other factors being favorable or predisposing factors.

Under the conditions of inappropriate oral hygiene as well as in the presence of local factors which promotes food retention, creates conditions conducive to plaque formation on the dental surfaces in the cervical region.

**Classification of periodontal and peri-implantation diseases and health conditions 2018**

**I. Periodontal Health, Gingival Disorders and Other Conditions**

(Chapple, Mealey, et al., 2018 Consensus Rept, Trombelli et al., 2018 Case definitions)

**1. Periodontal and gingival health**

**2. Gingivitis induced by dental biofilm**

**3. Gingivitis not induced by dental biofilm**

**II. Periodontitis**

(Papapanou, Sanz et al., 2018, Consensus Rept, Jepsen, Caton et al., 2018 Consensus Rept, Tonetti, Greenwell, Kornman, 2018 Case Definitions)

1. Neurotic periodontal diseases

2. Periodontitis

3. Systemic manifestations in periodontitis

**III. Other conditions affecting the marginal periodontium**

(Jepsen, Caton et al., 2018 Consensus Rept, Papapanou, Sanz et al., 2018 Consensus Rept)

1. Systemic conditions and conditions affecting periodontal support tissues

2. Periodontal abscesses and endo-periodontal lesions

3. Mucogingival malformations and other conditions

4. Traumatic occlusal forces

5. Factors determined by dental position and prostheses

**Peri-Implant inflamatory diseases and other conditions**

1. Peri-implant health
2. Peri-implant mucositis
3. Peri-implanitits
4. Peri-implant soft and hard dehiscences

|  |
| --- |
| **Clasification of Moscow school** |
| **Forms** | Severity of the process | **Evolution** | **Extension** |
| **Catarrhal** | Easy | Acute | Local |
| **Ulcero-necrotic** | Medium | Chronic | General |
| **Hypertrofic** | Grave | In agrravation |  |

**Individual work**

1. Achievement of the thematic project - in powerpoint, keeping the bibliographic references and sources. **Correlation of Classification of the Consensus of the Amsterdam Periodological Association 2018 with the Classic Classification.**

**Bibliography**

1. Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale

 institutelor de medicina / sub red. E. Borovski. - Chisinau : Lumina, 1990

1. Eni, Ana. Parodontologie : (prezentare schematică, ghid didactico-metodic) / A. Eni ; Universitatea de Stat de Medicină şi Farmacie "Nicolae Testemiţanu". - Chişinău : Medicina, 2003.
2. V. Chetruș ” Aspecte de etiologie, diagnostic și tratament ale parodontitelor marginale cronice”. Ed. Epigraf, Chișinău, 2007
3. I.Postolachi, Protetică dentară – Chișinău, Științe, 1993
4. Ciobanu S. Tratamentul complex în reabilitarea pacienților cu parodontită marginală cronică. Ed. Almor-Plus, Chișinău. 2012
5. Dumitriu H.T. Parodontologie. Ed. Viața Medicală Românească. București 1997, 2009
6. Dumitriu H.T. Tratat de parodontologie. Ed. Viața Medicală Românească, București 2015
7. Sculean A. Terapia parodontală regenerativă. Quintessence International România, 2013
8. Materials from the International Congress EuroPerio 9, Amsterdam 2018.

**Practical Lesson No.9**

**Theme: Marginal periodontitis. Notion. Degree of morbidity. Etiology, pathogenesis. The role of local and general factors in the onset and evolution of this process.**

**Time - 6 hours**

**Lesson Plan:**

**Topic discussion - 45 min**

**Patient demonstration on theme - 45 min**

**Clinical work with students - 145 min**

**Verification of individual work - 15 min**

**Verification of observation pads -15 min**

**Verification questions:**

1. Marginal periodontitis. Notion. Degree of morbidity.

2. Etiology. The role of local and general factors. Predisposing factors in the development of marginal periodontitis. Lack of contact point, food impaction and iatrogenic impact.

3. Biological space. Iatrogenic aggression on biological space.

4. Pathogenic mechanism in the onset and evolution of marginal periodontitis. Immunological aspects.

5. Classification of marginal periodontitis.

6. Clinical forms of marginal periodontitis: acute, chronic and aggressive.

7. Severity of the process (incipient, moderate, severe / advanced form). Clinical aspects.

**Annotation**

Marginal periodontitis is an inflammatory process that extends to periodontium,

is characterized by the progressive destruction of periodontium and interdental bone septum.

**Classification**

**MARGINAL PERIODONTITIS**

**A. AGGRESSIVE** **PERIODONTITIS**

**1. Prepubertal marginal periodontitis:**

-associated with general diseases: leukemia, neutropenia;

- associated with diseases and genetic disorders: PAPILLON-LEFEVRE syndrome; CHEDIAK-HIGASHI; DOWN; COHEN; EHLERS-Danlos; Marfan; leukocyte adhesion deficiency syndrome, CROHN disease; LANGERHANS Cell Disease (Histiocytosis Syndrome); genetic infantile agranulocytosis; familial cyclic neutropenia; hypophosphatasia.

**2. Juvenil Marginal Periodontitis:**

-local

-general

**3.The aggressive, rapid progressive marginal periodontitis.**

**B.CHRONIC MARGINAL PERIODONTITIS**

**1. Chronic superficial perodontitis:**

- with hyperplasic phenomena:

-in the background of prococious involution.

**2. Gradual slow progressive chronic marginal periodontitis:**

**localized, expanded, generalized.**

**3. Deep ulcero-necrotic marginal periodontitis;**

**By degree of evolution**

- **Initial -** bone tissue destruction up to 1/3, pockets up to - 3.5 mm

- **Moderate** - Bone tissue destruction up to 2/3, pockets up to - 5 mm

- **Severe**-Bone tissue destruction of more than 2/3, pockets over 5-6 mm.

**Characteristic features of PMC:**

**-inflammation;**

**-alveolysis;**

**- presence of periodontal pockets.**

**Biological space** is defined as the size of soft periodontal tissues attached to the tooth, more coronary than the alveolar bone ridge. This term was described by Gargiulo, who described the dimensions and relationships between the dento-gingival junction for humans. He measured dentogingival components in 287 teeth of 30 individuals after autopsy, and concluded that there is a certain correlation between: the alveolar crest, the connective tissue of attachment, the epithelial attachment, and the depth of the sulcus. It found that the depth of the sulcus was 0.69 mm, the epithelial attachment level 0.97 mm, and the connective tissue attachment 1.07 mm. Based on these studies it was concluded that the mean values of the biological space constituted 2.04 mm.

**Installation of aggression on the biological space takes place through the following mechanisms:**

l. Reduction of salivary flow, which deprives the periodontium of antibacterial protection

2. Local factors act on the degree of keratinization of the gingival epithelium

influences the penetration of bacterial plaque products.

3. Influence on the rhythm of regeneration of the sulcus epithelium;

4. On the content and onset of gingival ditch fluid.

5. By disrupting the local microbial balance, which must oppose aggression on

tissues by exogenous flora.

**Individual work**

1. Achievement of the thematic project - in powerpoint, keeping the bibliographic references and sources**.**

**Bibliography**

1. Therapeutic dentistry: manual for students of dentistry faculties

medical / sub institutes. E. Borovski. - Chisinau: The Light, 1990

2. Eni, Ana. Periodontology: (schematic presentation, didactic-methodical guide) / A. Eni; State University of Medicine and Pharmacy "Nicolae Testemitanu". - Chisinau: Medicine, 2003.

3. V. Chetruş "Aspects of etiology, diagnosis and treatment of chronic marginal periodontitis". Epigraf Ed., Chisinau, 2007

 4. I.Postolachi, Dental prosthetics - Chisinau, Sciences, 1993

**Practical lesson nr.10,11**

**Theme: Complex treatment of marginal periodontitis (local and general). Treatment plan. Initial treatment (periodontal, dental / endodontic, surgical, temporary prosthetic).**

**Time – 6 hours**

**Lesson plan:**

**Theme discussion – 45 min**

**Demonstration of the patient on the topic – 45 min**

**Clinical work with students – 145 min**

**Checking of individual work – 15 min**

**Checking of the observation cards -15 min**

**Control questions:**

1. The notion of complex treatment of marginal periodontitis.

2. Stages/steps of complex treatment of marginal periodontitis.

3. Local treatment of marginal periodontitis:

* The initial stage of treatment of chronic marginal periodontitis. (Dental treatment, periodontal, surgical, prosthetic, general).
* The corrective stage in the treatment of chronic marginal periodontitis (surgical, prosthetic).
* Maintenance treatment (local and general).

4. Remedies and medications used in the local treatment of marginal periodontitis.

5. Biostimulation methods in the local treatment of marginal periodontitis. Procedures and techniques.

6. General treatment. Medicines/drugs used in the treatment of marginal periodontitis.

**Adnotation**

At present, dental practice often involves the complex treatment of chronic marginal periodontitis. It’s purpose is : the elimination of inflammatory-infectious processes in periodontal tissues, restoring the structure and functions of the elements of the periodontal complex, improving local and general immunity factors through etiotropic and systematic therapy.

Complex treatment imply: use of nonsteroid preparations: salicylates, preparations of the group of organic acids: indomethacin etc., which have synergistic effect: antiinflammatory, analgesic and antipyretic.

In the drug complex treatment, antibiotics are also administered to reduce the number of pathogens in the subgingival bacterial plaque. These are taken when there are indications such as: purulent secretions from periodontal pockets, periodontal abscesses, fistulas, progressive destruction of the alveolar bone. The use of the antibiotics lead to the stabilization of the process and reduces alveolar bone resorption.

Long-term use of antibiotics can lead to microbial flora resistance, that is why local antibacterial preparations are indicated (antiseptics). Therefore the efficacy of chlorhexidine is well known. This being a cation interacts with negatively charged microorganisms, which are accumulated in conglomerates, being destroyed afterwards. The disadvantages of this drug are: it can cause allergies, dental change of colour, taste disturbance, oral epithelium desquamation.

Nowadays, the methods of local treatment of marginal periodontists are: professional cleaning of the oral cavity, treatment of dental caries and its complications, dental extractions of non-restorable teeth, restoration of contact points, polishing or replacement of bad adapted fillings, removal of prosthetic constructions made incorrectly.

Of all the local treatment methods of MCP, the most effective one is ultrasonic scaling, professional brushing and airflow use. These should be done systematically at 6-12 months, depending on the severity of the MCP and the patient's hygiene habits.

In complex treatment of MCP an important role is played by surgical methods of treatment. The main aim of this treatment is to restore the structure and functionality of the periodontal complex removing the periodontal pockets and improving the periodontal regeneration conditions. For a more efficient regeneration, various osteoplastic materials based on hydroxyapatite, calcium sulphate, tri-calcium phosphate etc. are currently used. By using these materials a good result is expected, but sometimes failures can also occur due to tissue incompatibility.

Basic surgical methods are considered: curettage, gingivectomy, gingivotomy, flap surgery, gingivoplasty. The auxiliary surgical methods in the periodontal treatment are: frenuloplasty, vestibuloplasty, muscle insertion sectioning.

**Individual work**

1. Thematic powerpoint presentationt -respecting the requirements and bibliographic sources.

**Bibliography**

1. Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale

 institutelor de medicina / sub red. E. Borovski. - Chisinau : Lumina, 1990

1. Eni, Ana. Parodontologie : (prezentare schematică, ghid didactico-metodic) / A. Eni ; Universitatea de Stat de Medicină şi Farmacie "Nicolae Testemiţanu". - Chişinău : Medicina, 2003.
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3. I.Postolachi, Protetică dentară – Chișinău, Științe, 1993
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7. Sculean A. Terapia parodontală regenerativă. Quintessence International România, 2013

**Practical lesson nr.12**

**Theme: Local treatment of marginal periodontitis. Manual scaling, ultrasonic, sonic, Air-Flow, professional brushing. Tools, equipment, medication and antiseptics, including anesthetics, procedures and techniques.**

**Time – 6 hours**

**Plan of the lesson:**

**Discuss of the theme – 45 min**

**Demonstrating of the patient to the theme – 45 min**

**Clinical work with students – 145 min**

**Verification of individual work – 15 min**

**Verification of medicals cards -15 min**

**Control questions:**

1. Local treatment of periodontal disease. Definition. Methods

2. Scaling: manual, ultrasonic, sonic.

3. Instruments used in manual scaling.

3. Professional brushing. Auxiliary methods for removing deposits, Air-flow.

4. Methods of checking the efficiency of local treatment of periodontal disease.

5. Antiseptic and antimicrobial solutions used in the treatment of periodontal disease.

6. Local and general complications and accidents resulting from the use of antiseptic and antimicrobial substances.

7. Medicinal remedies used in the treatment of periodontal disease.

8. Anesthetic substances used in the stages of periodontal disease treatment.

9. Procedures and techniques of anesthesia during the periodontal treatment.

10. Local and general complications and accidents resulting from the use of anesthetics.

**Individual work**

1. The implementation of the thematic project - in powerpoint, with the observance of the abstracts and the bibliographic sources.

**Bibliography**

1. Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale

 institutelor de medicina / sub red. E. Borovski. - Chisinau : Lumina, 1990

1. Eni, Ana. Parodontologie : (prezentare schematică, ghid didactico-metodic) / A. Eni ; Universitatea de Stat de Medicină şi Farmacie "Nicolae Testemiţanu". - Chişinău : Medicina, 2003.
2. V. Chetruș ” Aspecte de etiologie, diagnostic și tratament ale parodontitelor marginale cronice”. Ed. Epigraf, Chișinău, 2007
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5. Dumitriu H.T. Parodontologie. Ed. Viața Medicală Românească. București 1997, 2009
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7. Sculean A. Terapia parodontală regenerativă. Quintessence International România, 2013

**Practical lesson nr.13**

**Tema:** Recapitulation

**Time – 6 hours**

**Plan of the lesson:**

**Discuss of the theme – 45 min**

**Demonstrating of the patient to the theme – 45 min**

**Clinical work with students – 145 min**

**Verification of individual work – 15 min**

**Verification of medicals cards -15 min**

**Control questions:**

1. Periodontology. Definition. Goals and tasks.
2. The marginal periodontium. Definition. Structure. Functions.
3. Marginal superficial periodontium. Definition. Structure. (Types of ligaments / fibers of superficial marginal periodontium).
4. Deep / support marginal periodontium.
5. Gingival sulcus. Notion. Structure. Composition. (gingival sulcus fluid - functions).
6. The junctional epithelium (JE). Structure. Functions. The role in the development of periodontal disease.
7. The notion of biological space. Definition. The width of the biological space.
8. Biomechanics of tooth. The notion of "hypomochlion". The role of tooth biomechanics in the onset and evolution of periodontal disease.
9. The role of local factors in the onset and evolution of periodontal disease.
10. Biofilm. Notion. Stage of formation and structure of microbial biofilm. (The acquired film. Reversible adhesion. Irreversible adhesion).
11. The bacterial plaque. Notion. Stages of bacterial plaque formation.
12. Dental calculus. Definition. Classification (supragingival, subgingival). Stages and mechanism of dental calculus formation. The mineral and organic composition of dental calculus.
13. Classification of periodontal disease (WHO, MMC, Amsterdam 2018).
14. Clinical examination. The paraclinical exam. Purpose and objectives. Paraclinical examination methods: radiographic (OPG, RVG, CT), laboratory (blood chemistry, biochemical analysis of blood), microbiological tests (bacteriological examination, PCR). Their role in establishing the definitive diagnosis of periodontal disease.
15. Scaling. Notion. Manual and mechanical techniques for scaling. Instructions for manual and ultrasonic scaling. Contraindications to ultrasonic scaling. Protection measures.
16. Assess the effectiveness of professional hygiene by controlling the bacterial plaque. Procedures and remedies.
17. Notions of gingivitis. Etiologic and local and general factors, pathogenic mechanism in the onset and evolution of gingivitis.
18. Classification of gingivitis. Gingivitis induced by bacterial biofilm. Gingivite non-induced by bacterial plaque.
19. Marginal periodontitis. Notion. The etiology. The role of local and general factors. Factors favoring the development of marginal periodontics.
20. Pathogenic mechanism in the onset and evolution of marginal periodontitis. Immunological aspects.
21. Classification of marginal periodontitis.
22. The notion of complex treatment of marginal periodontitis. The stages of complex treatment of marginal periodontitis.
23. Local treatment of periodontal disease. Definition. Methods.
24. Antiseptic and antimicrobial solutions used in the treatment of periodontal disease.
25. Local and general complications and accidents resulting from the use of antiseptic and antimicrobial substances.
26. Anesthetic substances used in the stages of periodontal disease treatment..
27. Methods and techniques of anesthesia in the stages of periodontal treatment.
28. Local and general complications and accidents resulting from the use of anesthetics.

**Individual work**

 1. Recapitulation of the material on the basis of the control questions to achieve the colloquium.

**Bibliography**

1. Stomatologie terapeutica : manual pentru studentii facultatilor de stomatologie ale

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