

**Ministry of Health of Ukraine
Danylo Halytsky Lviv National Medical University
Department of Surgical Dentistry and Maxillofacial Surgery**

METHODICAL GIDE

(for the English-Medium students of 3rd course of Dental faculty)

from surgical dentistry

Second level of higher education (Master's Degree)

Sphere of Knowledge 22 «Healthcare»

Specialty 221 «Dentistry»

Faculty, Year: Dentistry, III

**Content module 1: Propedeutics of Surgical Dentistry
(part 1)**

Recommended by the by the profile methodical commission for dentistry

(Protocol No. __ of _____201_)

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INTRODUCTION

Curriculum for Surgical Dentistry

(in accordance with the Standard of Higher Education for the second level of higher education

(Master's Degree)

Sphere of Knowledge 22 "Healthcare"

Specialty 221 "Dentistry"

Master's Degree Program in Dentistry

Description of the discipline (abstract). The discipline involves the study of surgical dentistry in its main sections: "Propedeutics of surgical dentistry and MFD", "Inflammatory diseases of MFA", "Oncology of MFA", "Traumatology of MFA", "Reconstructive-Restorative Surgery of MFA", with emphasis on the study of etiology, pathogenesis, clinics, diagnostics, emergency treatment and prophylaxis of the main and most widespread diseases of MFA.

The main focus of the program is on the formation and development of students' skills in collecting anamnesis, conducting the examination and differential diagnosis of diseases of the MFA with a variety of clinical course and their complications. In the course of this program, modern approaches to the diagnosis are taught in practice, the principles of treatment and prophylaxis are studied on the basis of evidence-based medicine. Furthermore, students are introduced to the range of urgent states in practical surgical dentistry. Students are also involved into the diagnostic and treatment process of in- and out- patients under the guidance of assistants and associate professors of the department. Students also look into a wide scope of therapeutic and prophylactic measures, which are most often applied in dental surgical practice.

The study of surgical dentistry in theory and practice, contributes to the formation of a holistic view of the structure and functioning of organs of MFA, deepening of theoretical and practical training, acquisition of professional practical skills for further independent medical activity.

Structure of the discipline	Number of credits, hours, including				Year of study/ semester	Test type
	Total	In class		Self-study		
		Lectures hours	Practical hours			
Name of the discipline: Surgical Dentistry Number of content modules: 2	7 credits / 210 h	20	120	70	III year (V, VI semester)	credit
Per semester						
<i>Content module 1</i>	3,2 credits / 96 h	8	53	35	V semester	credit
<i>Content module 2</i>	3,8 credits / 114 h	12	67	35	VI semester	credit

The subject of the study of the discipline is the pathological processes of MFA, which relate to the sphere of competence of surgical dentistry and maxillofacial surgery, their clinical course, the main diagnostic and therapeutic manipulations used in the practice of a surgical dentist.

Interdisciplinary connections: therapeutic dentistry, paediatric dentistry, orthopedic stomatology, normal anatomy, histology, normal physiology, pathologic physiology, topographical anatomy and operative surgery, microbiology, biochemistry, pharmacology, internal diseases, endocrinology, skin and venereal, nervous diseases, otorhinolaryngology, ophthalmology, medicine of extreme conditions.

1. Purpose and tasks of the discipline

1.1. The purpose of teaching the discipline (surgical dentistry) is to provide a comprehensive and highly-specialized training of a dentist, which involves mastering the theory and practice of all sections of surgical dentistry and basics of MFD, from organization of surgical department of dental clinic and maxillofacial hospital to the ability of providing urgent care in extreme conditions and qualified surgical dental and reconstructive-restoration assistance in MFD.

1.2. The main tasks of the study of surgical dentistry are to educate a professional surgical dentist who is able to provide a thorough examination of the patient, diagnose the main symptoms and syndromes of MFA pathologies, to substantiate and formulate the preliminary diagnosis; to analyze the results of the examination and conduct differential diagnosis, to formulate a clinical diagnosis of major diseases, to identify the manifestations of somatic diseases in the oral cavity, to define the principles of integrated treatment in the clinic of surgical dentistry, to identify various clinical variants and complications of the most common diseases of the MFA, to be aware of the measures of primary and secondary prevention the most common surgical dental diseases.

Content module #1:

Explain and interpret the principles of deontology and medical ethics in surgical dentistry and MFD, the method of examination of MFD patients, involvement of adjacent specialists in the examination.

Analyze the indications and contraindications, especially the application of the basic methods of general and local anesthesia, sedation in the practice of a surgical dentist.

Make a plan and conduct a patient's examination with MFA pathology, refer to an additional research (if needed) and be able to interpret their results, plan for comprehensive examination and treatment of AIDS patients.

Collect anamnesis and examination results of the patient with the specified MFA pathology, fill in the relevant medical documentation; carry out cardiopulmonary resuscitation.

Collect the material for additional research (microbiological, cytological, histological); preventive measures and emergency care.

Assign an individual scheme of premedication, depending on the psycho-somatic state of the patient, the nature and extent of surgical intervention, medical therapy in the postoperative period, to provide appropriate recommendations.

Demonstrate the techniques of preoperative preparation of the surgeon's hands by modern techniques, the technique of antiseptic treatment of the surgical site, techniques of local anesthesia on the upper and lower jaws; operations for the removal of individual groups of teeth on the upper and lower jaw, pericoronarectomy, atypical tooth extraction

Lecture lessons schedule

V semester

№	Topic	Hours
1.	The history of the surgical dentistry and maxillofacial surgery department in the Danylo Halytsky Lviv National Medical University. Examination and diagnostic methods in oral and maxillofacial surgery.	2
2.	Anaesthesia in oral surgery: classification, indications, complications. General anaesthesia. Sedation methods. Neuroleptanalgesia (NLA). Local anaesthesia methods in maxillofacial surgery.	2
3.	Tooth extraction: instruments, indication and contraindications for teeth extraction, treatment planning, tooth extraction technique. Atypical (surgery) extraction. Extraction of impacted and unerupted teeth. Complications of tooth extraction.	2
4.	General and local complications in Oral and maxillofacial surgery. Cardiopulmonary resuscitation.	2
Total:		8

Practical lessons schedule

V semester

№	Topic	Hours
1.	Topic №1. Organization of dental surgery care. The structure of oral and maxillofacial surgery department. Maxillofacial examination methods. Registration of medical documentation.	3,5
2.	Topic №2. Principles of asepsis in oral surgery. Oral resistance factors. Prevention of socially significant infections (AIDS, tuberculosis, hepatitis, syphilis).	3,5
3.	Topic №3. Pain, its components, pathways of pain. Classification of anesthesia methods, indications and contraindications. General anesthesia. Sedation.	3,5
4.	Topic №4. Local anesthetics, their properties, side effects. Classification. Indications and contraindications for local anesthesia. Methods of topical and infiltrative anesthetics.	3,5
5.	Topic №5. Peripheral conductive mandible anesthesia: torus, mandibular. Indications, methods. Local complications, treatment and prevention.	3,5
6.	Topic №6. Peripheral conductive mandible anesthesia: mental, buccal and lingual. Indications, methods. Local complications, treatment and prevention.	3,5
7.	Topic №7. Peripheral conductive maxilla anesthesia: tuberal, infraorbital. Indications, methods. Local complications, treatment and prevention.	3,5
8.	Topic №8. Peripheral conductive maxilla anesthesia: nasopalatal (incisal), palatal. Indications, methods. Local complications, treatment and prevention.	3,5
9.	Topic №9. Central conductive anesthesia methods of jaws and adjacent tissues.	3,5

	Local complications, treatment and prevention.	
10.	Topic №10. General complications of local anesthesia, treatment and prevention. Cardiopulmonary resuscitation.	3,5
11.	Topic №11. Indications and contraindications of tooth extraction. Instruments. Preoperative management of patients. Patients with concomitant pathology preparation for teeth extraction.	3,5
12.	Topic №12. Maxillary teeth extraction methods. Stages of the procedure.	3,5
13.	Topic №13. Mandible teeth extraction methods. Stages of the procedure.	3,5
14.	Topic №14 Complications of tooth extraction: clinical signs, diagnosis, treatment and prevention.	3,5
15.	Topic №15. Impacted and unerupted teeth. Classification of Impacted teeth. Indications and contraindications for Impacted teeth extraction. Surgery and perioperative care. Complications of Impaction surgery. Summary lesson.	4
Total:		53

6. Self-study work schedule

V semester

№	Topic	Hours	Type of Control
1.	Organization of dental surgery clinic.	3	Current control at practical classes
2.	Principles of asepsis in surgical dentistry.	4	Current control at practical classes
3.	Modern injection equipments in dentistry.	4	Current control at practical classes
4.	The peculiarities of local anaesthesia in patients with somatic diseases.	4	Current control at practical classes
5.	Intensive therapy, cardiopulmonary resuscitation in patient in oral Surgery.	4	Current control at practical classes
6.	Tooth extraction in patient's with cardiac diseases, blood system diseases and diabetes.	4	Current control at practical classes
7.	X-Ray Examination Methods in patients with dental diseases.	4	Current control at practical classes
8.	Equipments and instruments for atypical (surgical, open) teeth extraction.	4	Current control at practical classes
9.	Complex treatment of tooth retention.	4	Current control at practical classes
Total hours: 35			

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“Approved”
on the meeting of the Department
of Surgical Dentistry
and Maxillofacial Surgery

Head of the Department:
professor Ya. E. Vares

METHODICAL GIUDE FOR PRACTICAL LESSONS

Educational discipline	SURGICAL DENTISTRY
Topic of the lesson	Topic №1. Organization of surgical dental care. Acquaintance with the structure of the surgical department of the dental clinic and the department of maxillofacial surgery of the Clinical Hospital. Equipment, documentation for the outpatient dental office and department. Method of examination of the maxillofacial area and neck.
Course	3 rd
Faculty	Dental

Actuality of the topic: providing dental care to the population is one of the most common types of medical services. Proper organization of surgical dental care promotes quality treatment of patients, provides conditions for preventive measures. In the practice of the dental surgeon, an important place is the examination of patients, which is the basis for establishing a correct diagnosis and prescribing effective treatment.

Aim of the lesson: to acquaint students with the organization of work and structure of the surgical department (office) of the dental polyclinic and the department of maxillofacial surgery of the clinical hospital, their equipment, documentation. To study the methods of examination of the maxillofacial area, to familiarize with additional methods of examination used in surgical dentistry.

Learning objectives:

➤ *Professional competence:*

1. Collection of medical information on the patient's condition.
2. Evaluation of the results of laboratory and instrumental research.
3. Establishment of a clinical diagnosis of dental disease.
4. Planning and conducting preventive measures for dental diseases.
5. Execution of medical and dental manipulations.
6. Organization and conducting of dental medical examination of persons subject to dispensary supervision.
7. Assessment of the environmental impact on the health of the population (individual, family, population).
8. Maintaining medical records.
9. Processing of state, social and medical information.

➤ *General competence:*

1. The ability to abstract thinking, analysis and synthesis; the ability to learn and be trained today.
2. Knowledge and understanding of the subject area and understanding of the profession.
3. Ability to apply knowledge in practical situations.
4. Ability to communicate in the state language both verbally and in writing; Ability to communicate in a second language.
5. Skills in the use of information and communication technologies.
6. Ability to search, process and analyze information from various sources.
7. Ability to adapt and act in a new situation; ability to work autonomously.
8. Ability to identify, put and solve problems.
9. Ability to choose a communication strategy.
10. Ability to work in a team.
11. Interpersonal skills.
12. Ability to act on the basis of ethical considerations (motives).
13. Ability to act in a socially responsible and civic conscious manner.

Methods of training:

Preparatory stage - Frontal oral interview.

The main stage - practical training, role-playing game.

The final stage is brainstorming.

Interdisciplinary integration

Disciplines	Student should know	Student should be able to
Previous:		
Normal anatomy	Know the anatomical and physiological features of the	To be able to explain the structure of systems and organs

Normal physiology	maxillofacial area: - structure of the upper and lower jaws; - innervation and vascularization of these sites; - structure of the lymphatic system of the head and neck; - structure of the muscles of the head and neck; - structure of the head and neck areas.	of maxillo-facial area (MFA)
Pathologic anatomy Pathologic physiology	To know the appearance and flow of the pathological processes in the tissues and organs of MFA	To be able to explain the appearance and flow of the pathological processes in the tissues and organs of MFA
Topographical anatomy	To know the topography of the organs of MFA	To be able to explain the topography of the organs of MFA
Hystology	To know histological structure of soft and hard tissues of MFA	To be able to explain the stages of manufacturing of cytological, histological preparations
Mycrobiology	To know the species identification of microorganisms in the oral cavity	To be able to explain the stages of manufacturing of microbiological preparations and the essence of bacteriological examination
Radiation diagnostics.	To know the methods of radiological examination used in dental practice	To be able to explain the principles on which these or other methods are based (X-ray, CT, MRI, ultrasound)
Therapeutic dentistry Pediatric dentistry	To know diseases of hard tissues of tooth and pulp. To know additional methods of examination, which are used in dental practice.	Be able to carry out an intra-oral examination of individual teeth. Be able to diagnose caries, pulpitis of temporary and permanent teeth.

Plan and organizational structure of practical lesson of the discipline

Duration of practical lesson is 3.5 academic hours – 2 hours. 40 minutes including 10 minutes for a break.

№	The main stages of the lesson, their functions and content	Time period	Methods of education and control	Materials of methodical support	
1.	Preparatory stage	30 min.			
1.1	Organizational measures	5 min.			
1.2	Setting up of educational goals and motivation.	5 min.			
1.3	Control of the initial level of knowledge (standardized control methods).	20 min.	Individual theoretical evaluation.	Question for an individual oral and	Tables, phantoms, collapsible jaws.

			Solving typical tasks. Test control. Written interview.	written evaluation. Typical situational tasks and tests.	textbooks, manuals, reference books, atlas, methodical recommendations, video films.
2.	Main Stage	90 min.			
	<p>Formation of professional skills and abilities:</p> <ol style="list-style-type: none"> 1. To collect anamnesis and to conduct a review of the patient with the pathology of the maxillofacial area. 2. Set up a patient survey plan. 3. Make a plan for additional research methods. 4. Complete the relevant medical documentation. 5. To work out a method of examination and palpation of the maxillofacial area during the examination. 6. To work out the method of examination and palpation of vestibulum of the oral cavity. 7. To work out the method of examination and palpation of the oral cavity itself. 8. To work out a survey method, percussion, determination of degree of mobility of teeth, depth of tooth-ashen pockets. 9. To work out the method of determining the degree of limitation of opening the mouth. 10. Learn to fill the patient's dental formula. 11. Learn to formalize the documentation for additional diagnostic methods. 		Formation of professional skills: Work with patients with pathology of maxillofacial area. Work out the results of additional methods of examination of patients with diseases of the maxillofacial area. Solving typical situational tasks. Oral and written evaluation on standardized list of issues. Work with phantoms, view thematic videos.	Patients with pathology of maxillofacial area. The history of the disease. Selection of results of additional survey methods. Situational tasks. Algorithms. Phantoms, surgical instruments. Thematic videos.	
3.	Final stage	30 min.			
3.1	Control and correction of the level of professional skills and abilities		Individual skills control. Control of skills by solving non-typical situational problems with illustrative	Phantoms, surgical instruments. The history of the disease. Selection of results of additional methods of examination of thematic patients. Unusual situational tasks.	

			material.	
3.2	Control and correction of the level of professional skills and abilities.		Final evaluation of the students	
3.3	Homework. Informing students about the topic of the next lesson.			Recommended literature

Methodology of organization of educational process in practical lesson.

STRUCTURE OF PRACTICAL LESSON

Preparation stage (30 min.)

To substantiate the significance of the subject for further study of the discipline and professional activity of the doctor in order to formulate motivation and purposeful educational activity. Get acquainted with students with specific goals and lesson plans. Conduct standardized control of the initial level of student training, discussion and student answers.

- *Organizational part of the lesson: presence check, evaluation of the uniform.*
- *Informing about of the topic and the purpose of the lesson.*

Topic of the lesson: «Organization of surgical dental care. Acquaintance with the structure of the surgical department of the dental clinic and the department of maxillofacial surgery of the Clinical Hospital. Equipment, documentation for the outpatient dental office and department. Method of examination of the maxillofacial area and neck.»

Aim of the lesson: to acquaint students with the organization of work and structure of the surgical department (office) of the dental polyclinic and the department of maxillofacial surgery of the clinical hospital, their equipment, documentation. To study the methods of examination of the maxillofacial area, to familiarize with additional methods of examination used in surgical dentistry.

- *Motivation of educational activity.* Proper organization of surgical dental care promotes quality treatment of patients, provides conditions for preventive measures. In the practice of the dental surgeon, an important place is the examination of patients, which is the basis for establishing a correct diagnosis and prescribing effective treatment.

Materials of methodical support of the preparatory stage of the lesson:

Questions to frontal survey:

1. Principles of organization of dental care for the population of Ukraine.
2. Organization of work of the surgical department (office) of the dental polyclinic.
3. Features of organization and provision of specialized surgical dental care.
4. Sanitary and hygienic requirements for the surgical department (office) of the dental polyclinic.
5. Sanitary and hygienic requirements for the surgical department of the hospital.
6. Equipment, medical documentation of the surgery room (department).
7. Subjective examination of a surgical dental patient (complaints, medical history, life history).
8. Methods of examination of the general condition of a surgical dental patient.
9. Methods of extraoral examination of a surgical dental patient.
10. Methods of intraoral examination of a surgical dental patient. Oral examination tools.
11. Laboratory methods of examination.
12. Instrumental additional diagnostic methods.
13. Functional additional examination methods.
14. Indications for hospitalization of surgical dental patients.

The main stage: the formation of professional skills (90 min)

Conducting professional training.

Materials of methodical support of the main stage of the lesson:

Examination of a patient with surgical pathology of the maxillofacial area is a complex of studies that are conducted to identify the individual characteristics of the patient for the purpose of diagnosis, selection of rational treatment, monitoring the dynamics of the disease, determining the prognosis.

Algorithm of examination of maxillofacial patient:

- surveys (complaints, anamnesis, and life)
- face examination (examination, physical examination, bite study);
- examination of the oral cavity (examination, physical and instrumental examination). Instruments for examination of maxillofacial patient:
 - spatula - for removal of lips, cheeks or tongue, as well as during examination of the tongue, sublingual area, palatine tonsils, pharynx;
 - dental or anatomic forceps - to determine the degree of mobility of teeth and their percussion;
 - dental mirror - for examination of teeth, back of tongue, sublingual area, palate;
 - dental probe (angular or bayonet) - to determine the depth of the gum-pockets and defects of the crowns of the teeth;
 - a thin Bauman probe, blunted thin injection needles, plastic salivary catheters - to probe the ducts of the large salivary glands and fistula;
 - button probe - for probing oroantral junctions, fistulas, deep soft tissue wounds, palate defects and jaw bones.

In most cases, the above examination algorithm is sufficient for a full diagnosis of the condition, but if necessary, depending on the features of the disease and the general somatic status of the patient, additional methods of examination may be performed:

- laboratory diagnostic methods (blood, urine, wounds, saliva, etc.);
- Diagnostic methods (radiological examination, CT scan, etc.).
- Functional methods of diagnostics (thermometry, electroodontodiagnosis, functional chewing tests).

Laboratory research.

Morphological study

- cytological (imprint, scraping, flushing, punctate);
- histological (biopsy)
- excision, incisional, puncture, trepanation, curettage, accidental.

Microbiological research

- Identification of the pathogen in aerobic and anaerobic nutrient media (bacteriogram);
- microscopic examination (Gram staining);
- determination of sensitivity of microflora to antibiotics (antibiotic chart).

Serological examination

- complement binding reaction: Wasserman, Colmer (with syphilis), Bordeaux-Zhang (with actinomycosis), Paul-Bunnell (with infectious mononucleosis);
- response to HIV infection.

Immunobiological study

- study of the immune status (immunogram); General clinical analyzes
- general blood test (hemogram);
- general study of urine;
- blood group and rhesus factor;
- blood glucose;-
- platelet count, bleeding duration, blood clotting time;
- coagulogram.

Biochemical blood test

- assessment of the functional state of the liver: bilirubin (direct, indirect, total), activity of hepatic transaminases (ALT, AST);
- assessment of the functional state of the kidneys: creatinine, uric acid, blood urea;
- presence of disturbances of water-electrolyte exchange: Na +, K +, chlorides;
- assessment of blood plasma protein content and protein fraction ratios;
- indicators of calcium-phosphorus metabolism: the level of calcium and phosphorus in the serum and the activity of alkaline phosphatase, parathormone.

Radiological methods of diagnostics.

Intraoral radiography

- contact (teeth, bottom of mouth);
- occlusal (teeth, hard palate).

Oral radiography

- examination of bones of the facial skeleton;
- the bones of the nose and paranasal sinuses;
- temporomandibular joints (laying by Schiller, Mayer, Pordes (in Parma modification));
- the maxilla and arches (in axial and semi-axial projections);
- mandible in lateral projection (laying by Cieszynski, Genish).

Tomography - obtaining a picture of a layer of the studied structure of a certain anatomical formation at a certain depth.

Orthopantomography (panoramic radiography) is a method of radiological examination that allows to obtain images of the volumetric curved surfaces of both jaws on a flat x-ray film. Gives the opportunity to get a single-image of the entire dentoalveolar system as a single functional complex.

Electro-radiography - obtaining x-ray image on plain paper with the use of charged selenium film, which is shown with the help of dry graphite powder in a special apparatus.

Contrast radiography - salivary glands (sialography), maxillary sinuses (sinusography), cystic cavities (cystography), fistulas (fistulography) with 30% solution of iodipol, 40% solution of iodipine, lipodiol, etiodol.

Angiography of the vascular system with cardiostrom, verographin, urotrast. Lymphography (indirect, direct) with lymphotrust. Computed tomography is a layer-by-layer study of the optical density of individual organs and tissues in the form of sections of parts of the human body on a monitor screen using computer-aided mathematical modeling of x-rays.

Computer Three-Dimensional Stereoscopic (Volume) Tomography (3 D-Image) - Construction using computer technology of a series of 2-dimensional computer tomographs of a 3-dimensional model by combining tomographic sections in the required sequence (spiral mode, 16 scans in 0.5 seconds (or 32 "sections" in 1 second) up to 0.5 mm thick. High-definition images of any area are obtained and the most accurate three-dimensional images of the human or individual body are reproduced in different spatial planes. It is possible to manufacture a 3-dimensional stereolithographic plastic model of the bones of the facial skeleton.

Stereolithography - allows to determine the actual size of the pathological lesion (tumor) in the jaw, its exact location, the size of the bone defect and the relationship with the surrounding structures. Colored stereolithographic models are obtained by contrasting substance when staining the lesion (tumors, nerves, blood vessels, etc.).

Other methods of radiation diagnostics

Contact thermography - obtaining color thermograms based on the ability of liquid cholesterol crystals to change their color depending on the skin temperature (infrared radiation) above the test area.

Remote infrared thermography (telemetry) - capture at a distance by special optical systems of infrared rays emitted by the human body and converting them into electrical signals in the form of an image on the screen electron beam tube thermograph.

Magnetic resonance imaging (MRI) - the study of organs and tissues using a constant magnetic field and short-term activation of an alternating electromagnetic field for the polarization

of hydrogen atoms with subsequent mathematical modeling using a computer, which allows to obtain a layer-by-layer image of an organ or tissue on the monitor to characterize.

Ultrasonography (ultrasound) is a visualization of the deep structures of the body by recording the reflection of high-frequency pulses of ultrasonic waves directed into the tissue and calculating the time between generation and return of the pulse delivered on the screen of the ultrasonic diagnostic apparatus in the form of different image densities.

Doppler imaging is a study of changes in blood flow velocity in blood vessels.

Echoostometry - determination of bone density when passing ultrasonic waves using an osteometer.

Maxillofacial endoscopy:

- sinusoscopy of maxillary sinuses;
- arthroscopy of the temporomandibular joints;
- sialoscopy of the large salivary glands;
- diagnostic endoscopy of intraosseous hollow formations.

Functional methods of research

Electroodontometry - Measurement of the minimum amperage to which the pulp of the tooth or periodontal tissue responds with the help of an electroodontometer. Rheography is a method of investigation of blood supply to organs and tissues based on the recording of changes in blood flow resistance when high frequency current passes through tissues by means of a rheograph.

Polarography - the method is based on the reaction of electrochemical oxygen recovery at the polarographic electrode during electrolysis.

Electromyography - determination of the functional state of chewing and mimic muscles using an electromyograph.

Final clinical diagnosis is determined on the basis of the preliminary diagnosis, made after the subjective and objective examination of the patient, the results of additional methods of examination, the differential diagnosis. The information obtained during the examination of the patient and the complex of diagnostic and treatment-and-prophylactic measures are reflected in the Medical map of the dental patient (form № 043 / o). The records should be clear, concise, using standard medical terminology and fully reflect the objective clinical picture of the disease. The diagnosis should use the international classification of diseases. In the future it is necessary to indicate the dynamics of the disease.

The medical record of the dental patient is used not only as a source of medical or statistical information, but also as legal documentation and can appear in the resolution of conflict situations between the patient and the doctor.

• Algorithms for the formation of professional skills.

1. To work out the technique of examination and palpation of the maxillofacial area during the extraoral examination.

2. To work out a procedure for examination and palpation of the vestibulum of the oral cavity.

3. To work out a method of examination and palpation of the oral cavity itself.

4. To work out the methodology of examination, percussion, determination of the degree of mobility of teeth, depth of gingival pockets.

5. To work out a method for determining the degree of restriction of mouth opening.

6. To learn how to fill a patient's dental formula.

7. To learn how to formalize the documentation for additional diagnostic methods.

- Practical tasks (typical, atypical, unpredictable situations). Individual tasks:

Task # 1. What is the operating area for one dental chair (operating table) in the surgical department of the dental polyclinic?

- A. Not less than 23 m²
- B. Not less than 21 m²
- C. Not less than 18 m²
- D. Not less than 15 m²
- E. Not less than 10 m².

Task # 2. Which of the following types of X-ray examination is performed using contrast agents?

- A. Dental X-ray
- B. Panoramic X-ray
- C. Viewing X-ray
- D. Sialography
- E. Telereöntgenography

- Tasks for independent work and work in small groups (interactive teaching methods).

Patient G. for 28 years went to the surgical office of the dental polyclinic with complaints of painful swelling in the submandibular area on the right, subfebrile body temperature, general malaise. The swelling was noted two days ago. Pregnancy, the second month. Objectively: there is a slightly painful infiltrate in the submandibular region, enlarged lymph nodes are palpated, no fluctuation is present; the crown 46 of the tooth is destroyed by the carious process completely before the bifurcation of the roots; tooth percussion is somewhat painful. What additional examination methods should be used to diagnose it? What alternative examination methods can be used in this clinical situation? Justify your choice.

Final stage (30 min.)

Summing up of the lesson

Materials of methodological support of the final stage of the lesson:

- Brain storm. Students demonstrate an exhaustive description of the unusual clinical situation and offer to offer the most rational diagnostic methods. After recording all the proposed diagnostic methods during the discussion, students choose the most rational.
- Tasks for self-employment. To work on phantoms the technique of examination and palpation of maxillofacial area, oral cavity under conditions of phantom class.
- Evaluation.

Conduct standardized final control using individual test tasks and questions (20 min.), Work check (10 min.). Evaluate the student's current activities during the classroom, taking into account standardized final control, analyze the student's progress, announce the evaluation of each student's activity, and display it in the student attendance and student log book. An adult group at the same time makes assessments in the record of the record of success and attendance of classes by students, the teacher certifies them with his signature.

Brief informing the students about the topic of the next lesson and the methodical measures for preparing for it.

Basic knowledge level:

1. Subjective examination of patients.
2. Objective (general and local) survey.
3. Basic methods of examination (review, palpation, percussion, auscultation).

List of questions to be studied by the student:

1. Principles of the organization of dental care to the population of Ukraine.
2. Organization of the operation of the surgical department (cabinet) of the dental clinic.

3. Features of the organization and provision of special surgical dental care.
4. Sanitary-hygienic requirements to the surgical department (cabinet) of the dental clinic and inpatient department.
5. Equipment, medical documentation of the surgical office (department).
6. Subjective examination of a surgical dentist (complaints, history of the disease, history of life).
7. Method of examination of the general condition of a surgical dentist.
8. Method of local examination (extraoral and intraoperative) of a surgical dentist.
9. Additional methods of examination (electrodontometry, radiography, morphological, microbiological, functional research).
10. Indications for hospitalization of dental surgical patients.

The list of practical skills to be learned by the student:

1. To work out the technique of examination and palpation of the maxillofacial area during the extraoral examination.
2. To work out a procedure for examination and palpation of the vestibulum of the oral cavity.
3. To work out a method of examination and palpation of the oral cavity itself.
4. To work out the methodology of examination, percussion, determination of the degree of mobility of teeth, depth of gingival pockets.
5. To work out a method for determining the degree of restriction of mouth opening.
6. To learn how to fill a patient's dental formula.
7. To learn how to formalize the documentation for additional diagnostic methods.

Situational tasks and questions on the topic of the lesson:

1. Specify of which parts consists the clinical examination of the patient.
 - A. Patient complaints and history of life.
 - B. Examination of the oral cavity and additional examination methods.
 - C. Examination of the general condition of the patient and radiography of the teeth.
 - D. Extra- and intra-oral examinations.
 - E. Subjective and objective examination.

2. Premolars of the upper jaw are innervated by:
 - A. Greater palatal nerve.
 - B. Upper anterior alveolar branches and small palatal nerve.
 - C. Upper posterior alveolar branches and large palatal nerve.
 - D. Upper middle alveolar branches and small palatal nerve.
 - E. Upper median alveolar branches and large palatal nerve.

3. Excision biopsy is:
 - A. The excision of a tissue fragment.
 - B. curettage of pathological tissues.
 - C. Excision of neoplasm within healthy tissues.
 - D. Puncture of pathological focus.
 - E. Sampling-fingerprint of the pathological lesion.

4. Name the method of graphical diagnostics of blood supply of tissues:
 - A. Ultrasonography.
 - B. Angiography.
 - C. Polarography.
 - D. Rheography.
 - E. Thermography.

5. To what section of the patient's examination the general and local examination belong?

- A. To subjective examination.
- B. To anamnesis of disease.
- C. To the anamnesis of disease and life.
- D. To objective examination.
- E. To objective and subjective examination.

Literature:

Basic:

1. Oral and Maxillofacial Surgery: Textbook, Part 1, 2 / V.O. Malanchuk. – Vinnytsia: Nova Knyha Publishers, 2011. – 453p.
2. Principles of Dental Local Anaesthesia and Teeth Removal / Ya. E. Vares, R. Z. Ogonovsky, Ch. R. Pohranychna – LNMU, 2007. – 63p.
3. Atlas of Human Anatomy / F. Netter – 2nd ed. – New Jersey: ICON Learning Systems. – 592 p.

Additional:

1. Contemporary Oral and Maxillofacial Surgery / L. J. Peterson, E. Ellis, J. R. Hupp, M.R. Tucker – 3rd ed. – St. Louis: Mosby – Year Book, Inc. – 1998. – 1477 p.

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“Approved”
on the meeting of the Department
of Surgical Dentistry
and Maxillofacial Surgery

Head of the Department:
professor Ya. E. Vares

METHODICAL GIUDE FOR PRACTICAL LESSONS

Educational discipline	SURGICAL DENTISTRY
Topic of the lesson	Topic №2. Principles of asepsis in oral surgery. Oral resistance factors. Prevention of socially significant infections (AIDS, tuberculosis, hepatitis, syphilis).
Course	3 rd
Faculty	Dental

Actuality of the topic: providing of dental care to the population is associated with significant microbiological load in dental clinics and hospitals. The oral cavity is both the entrance gate of the body and the source of infection. Considering the high risk of transmission of the pathogens through blood and saliva, disappointing epidemic statistics (in particular as regards the HIV pathogen), all aseptic and antiseptic rules should be carefully observed during surgical dental admission.

Aim of the lesson: to get acquainted with the basic rules and methods of aseptic, antiseptic and prevention of infectious diseases in the work of a dental surgeon.

Learning objectives:

➤ *Professional competence:*

1. Collection of medical information on the patient's condition.
2. Evaluation of the results of laboratory and instrumental research.
3. Establishment of a clinical diagnosis of dental disease.
4. Planning and conducting preventive measures for dental diseases.
5. Execution of medical and dental manipulations.
6. Organization and conducting of dental medical examination of persons subject to dispensary supervision.
7. Assessment of the environmental impact on the health of the population (individual, family, population).
8. Maintaining medical records.
9. Processing of state, social and medical information.

➤ *General competence:*

1. The ability to abstract thinking, analysis and synthesis; the ability to learn and be trained today.
2. Knowledge and understanding of the subject area and understanding of the profession.
3. Ability to apply knowledge in practical situations.
4. Ability to communicate in the state language both verbally and in writing; Ability to communicate in a second language.
5. Skills in the use of information and communication technologies.
6. Ability to search, process and analyze information from various sources.
7. Ability to adapt and act in a new situation; ability to work autonomously.
8. Ability to identify, put and solve problems.
9. Ability to choose a communication strategy.
10. Ability to work in a team.
11. Interpersonal skills.
12. Ability to act on the basis of ethical considerations (motives).
13. Ability to act in a socially responsible and civic conscious manner.

Methods of training:

Preparatory stage - Frontal oral interview.

The main stage - practical training, role-playing game.

The final stage is brainstorming.

Interdisciplinary integration

Disciplines	Student should know	Student should be able to
Previous:		
Normal anatomy	Know the anatomical and physiological features of the maxillofacial area: - structure of the upper and lower	To be able to explain the structure of systems and organs of maxillo-facial area (MFA)

Normal physiology	jaws; - innervation and vascularization of these sites; - structure of the lymphatic system of the head and neck; - structure of the muscles of the head and neck; - structure of the head and neck areas.	
Pathologic anatomy Pathologic physiology	To know the appearance and flow of the pathological processes in the tissues and organs of MFA	To be able to explain the appearance and flow of the pathological processes in the tissues and organs of MFA
Topographical anatomy	To know the topography of the organs of MFA	To be able to explain the topography of the organs of MFA
Histology	To know histological structure of soft and hard tissues of MFA	To be able to explain the stages of manufacturing of cytological, histological preparations
Microbiology Virusology	To know the species identification of microorganisms of oral cavity; notions of pathogenic and pathogenic microorganisms, their role. To know the possible ways of transmission of the infection.	To be able to explain the stages of manufacturing of microbiological preparations and the essence of bacteriological examination
Radiation diagnostics.	To know the methods of radiological examination used in dental practice	To be able to explain the principles on which these or other methods are based (X-ray, CT, MRI, ultrasound)

Plan and organizational structure of practical lesson of the discipline

Duration of practical lesson is 3.5 academic hours – 2 hours. 40 minutes including 10 minutes for a break.

№	The main stages of the lesson, their functions and content	Time period	Methods of education and control	Materials of methodical support	
1.	Preparatory stage	30 min.			
1.1	Organizational measures	5 min.			
1.2	Setting up of educational goals and motivation.	5 min.			
1.3	Control of the initial level of knowledge (standardized control methods).	20 min.	Individual theoretical evaluation. Solving typical tasks. Test control. Written interview.	Question for an individual oral and written evaluation. Typical situational tasks and tests.	Tables, phantoms, collapsible jaws, textbooks, manuals, reference books, atlas, methodical recommendations

				s, video films.
2.	Main Stage	90 min.		
	<p>Formation of professional skills and competences:</p> <p>1.To develop the technique of preoperative cleaning of the surgeon's hands using modern methods.</p> <p>2. To learn the technique of conducting antiseptic cleaning of the operative field on the phantom.</p> <p>3. To make a plan for comprehensive examination and dental treatment of patients with AIDS, HIV.</p>		<p>Formation of professional skills: Work with patients with pathology of maxillofacial area. Work out the results of additional methods of examination of patients with diseases of the maxillofacial area. Solving typical situational tasks. Oral and written evaluation on standardized list of issues.Work with phantoms, view thematic videos.</p>	<p>Patients with pathology of maxillofacial area. The history of the disease.Selection of results of additional survey methods. Situational tasks.Algorithms.Photomorphs, surgical instruments.Thematic videos.</p>
3.	Final stage	30 min.		
3.1	Control and correction of the level of professional skills and abilities		Individual skills control.Control of skills by solving non-typical situational problems with illustrative material.	Phantoms, surgical instruments.The history of the disease.Selection of results of additional methods of examination of thematic patients.Unusual situational tasks.
3.2	Control and correction of the level of professional skills and abilities.		Final evaluation of the students	
3.3	Homework. Informing students about the topic of the next lesson.			Recommended literature

Methodology of organization of educational process in practical lesson.

STRUCTURE OF PRACTICAL LESSON

Preparation stage (30 min.)

To substantiate the significance of the subject for further study of the discipline and professional activity of the doctor in order to formulate motivation and purposeful educational activity. Get acquainted with students with specific goals and lesson plans. Conduct standardized control of the initial level of student training, discussion and student answers.

- *Organizational part of the lesson: presence check, evaluation of the uniform.*
- *Informing about of the topic and the purpose of the lesson.*

Topic of the lesson: «Principles of asepsis in oral surgery. Oral resistance factors. Prevention of socially significant infections (AIDS, tuberculosis, hepatitis, syphilis).»

Aim of the lesson: to get acquainted with the basic rules and methods of aseptic, antiseptic and prevention of infectious diseases in the work of a dental surgeon.

- *Motivation of educational activity.* Proper organization of surgical dental care promotes quality treatment of patients, provides conditions for preventive measures. In the practice of the dental surgeon, an important place is the examination of patients, which is the basis for establishing a correct diagnosis and prescribing effective treatment.

Materials of methodical support of the preparatory stage of the lesson:

Questions to frontal survey:

1. General principles and methods of asepsis.
2. Preparation of the rooms of the surgical dental department (office) of the polyclinic and the hospital.
3. Methods of processing tools and dressing material (disinfection and sterilization), their storage.
4. Disinfection of used tools.
5. Pre-sterilization cleaning of tools and methods of determining its quality.
6. Dry heat sterilization.
7. Steam sterilization under pressure.
8. Chemical (cold) sterilization.
9. Preparation of the surgeon's hands.
10. Preparation of the operational field.
11. General principles and methods of antiseptics.
12. Ways of transmission of infection in the office of surgical dentistry.
13. Prevention of HIV infection, viral hepatitis.
14. AIDS: etiology and pathogenesis. Features of the clinical course. Diagnosis, treatment.

The main stage: the formation of professional skills (90 min)

Conducting professional training.

Infection in dentistry can occur through contact (direct and indirect), implantation, airborne droplets and dust. Contact direct path - consists in direct contact with the source of infection - through hands, linen, tools, indirect - through objects (towels, tools, valves of water taps, door handles, etc.) Implantation - associated with insufficient sterilization of suture material or objects that remain in the wound or by foreign bodies entering the wound. Airborne pathway - from the source of infection through the respiratory system. Dust - through dust (staphylococcus aureus, tuberculosis bacteria).

Aseptic - a complex of measures aimed at preventing the penetration of microorganisms into the wound, organs and tissues of the patient in the course of any medical manipulation. Aseptic in surgical dentistry includes:

- preparation of premises and equipment in the operating room;
- special preparation of the surgeon's hands;

- disinfection of the surgical field, sterilization of dental instruments, sterilization of dressing material and linen, sterilization of suture material, sterilization of tissues and substances that are introduced into the body of the patient;
- strict adherence to rules and use of personal protective equipment by medical personnel;
- organization of work of the personnel, realization of planned and urgent special hygienic measures in the surgical room.

Aseptic consists of two main parts: disinfection and sterilization. Disinfection is a set of techniques and methods aimed at the complete, partial or selective destruction of potentially pathogenic microorganisms on environmental objects in order to prevent infectious disease. Sterilization is the process of complete destruction of microorganisms, including their spore forms, using chemical and physical methods of exposure.

Antiseptic is a complex of measures aimed at combating infection in the wound. Methods:

- mechanical (primary and secondary surgical treatment of wounds - suturing, excision of the edges and bottom of the wound, removal of non-viable tissues, removal of foreign bodies, washing of the wound with antiseptic solutions, etc.);
- physical (drainage of the infected wound and its washing, use of thermal and light physiotherapy procedures);
- chemical (involves the destruction of microbial flora by means of various chemical compounds). These include inorganic compounds - halides (iodine, lugol, iodine, iodonate), oxidizers (hydrogen peroxide, potassium permanganate), inorganic acids and alkalis, heavy metal salts or organic compounds - alcohols, aldehydes, phenols, nitrofurans;
- biological (antibiotics, sulfonamides, proteolytic enzymes, bacteriophages, immunostimulants, etc.).

• Algorithms for the formation of professional skills.

1. To master the technique of preoperative preparation of the surgeon's hands according using modern methods.
2. To learn the phantom technique of conducting antiseptic cleaning of the operation field.
3. To make a plan for comprehensive examination and treatment of AIDS patients.

• Practical tasks (typical, atypical, unpredictable situations). Individual tasks:

Individual tasks:

Task # 1. Choose the saliva enzyme that has the most pronounced antimicrobial properties.

- A. Lactoferrin
- B. Ribonuclease
- C. Transaminase
- D. Lysozyme
- E. Lactoperoxidase

Task # 2. What is the mechanism of indirect contact pathway for infection of patients?

- A. Inadequate sterilization of suture material
- B. Airborne transmission of infection
- C. Through dust containing persistent pathogens
- D. Through indoor items
- E. Poor cleaning of dental hand surgeon

• Tasks for independent work and work in small groups (interactive teaching methods).

The dental surgeon performed the removal of the tooth in a patient infected with HIV. During surgery, the patient's blood got into the eye of a doctor. What actions should be taken first? What drugs should be prescribed for preventive purposes? Justify your choice.

Final stage (30 min.)

Summing up of the lesson

Materials of methodological support of the final stage of the lesson:

- Brain storm. Students demonstrate an exhaustive description of the unusual clinical situation and offer to offer the most rational diagnostic methods. After recording all the proposed diagnostic methods during the discussion, students choose the most rational.
- Tasks for self-employment. To work on phantoms the technique of examination and palpation of maxillofacial area, oral cavity under conditions of phantom class.
- Evaluation.

Conduct standardized final control using individual test tasks and questions (20 min.), Work check (10 min.). Evaluate the student's current activities during the classroom, taking into account standardized final control, analyze the student's progress, announce the evaluation of each student's activity, and display it in the student attendance and student log book. An adult group at the same time makes assessments in the record of the record of success and attendance of classes by students, the teacher certifies them with his signature.

Brief informing the students about the topic of the next lesson and the methodical measures for preparing for it.

Basic knowledge level:

1. Anatomical and functional features of oral tissues.
2. Specific and nonspecific resistance of the organism.
3. Ways of transmission of infection in the dental surgery room.

List of questions to be studied by the student:

1. Concept of asepsis, disinfection, sterilization, their methods.
2. General principles and methods of asepsis.
3. Preparation of the surgical dental department (cabinet) of the clinic and hospital.
4. Preparation of the surgeon's hands.
5. Preparation of the operational field.
6. Methods of cleaning of the instruments and dressing material (disinfection and sterilization), their storage.
7. General principles and methods of antiseptics.
8. Ways of transmission of infection in a dental surgical office.
9. AIDS: etiology and pathogenesis. Features of the clinical flow. Diagnosis, treatment.
10. Prevention of HIV infection.

The list of practical skills to be learned by the student:

1. To develop the technique of preoperative cleaning of the surgeon's hands using modern methods.
2. To learn the technique of conducting antiseptic cleaning of the operative field on the phantom.
3. To make a plan for comprehensive examination and dental treatment of patients with AIDS, HIV.

Situational tasks and questions on the topic of the lesson:

1. The Surgical Department of the city Dental Polyclinic was visited by the sanitary and epidemiological service to check the health status. What is the criterion for evaluation of the sanitary status of the polyclinic?
 - A. Bacteriological control.
 - B. Sterilization log accounting data.
 - C. Visual inspection sterilization data.
 - D. Determination of the concentration of disinfectant solutions.
 - E. All the answers are correct.

2. Patient S., 36 years old, was diagnosed with acute purulent odontogenic periostitis of the right upper jaw caused by 13 teeth. Surgery - abscess opening was performed. The wound was washed with 0.06% solution of chlorhexidine bigluconate and with insertion of a rubber drainage. What types of antiseptics were used in this patient?
- Physical and chemical.
 - Physical.
 - Biological and chemical.
 - Physical and biochemical.
 - Chemical and biological.
3. What sample is used to detect residual blood on instruments after their pre-sterilization cleaning?
- Azopiram test.
 - Fenophthalein test.
 - Chlorhexidine test.
 - Methylene blue test.
 - Phenyl acetate test.
4. What is the maximal period of storage of the instruments in of craft packet after sterilization?
- 12 years.
 - 24 years.
 - 2 days.
 - 3 days.
 - 10 days.
5. Which of the following disinfectants for surgeon's hand cleaning is particularly appropriate in case of the patients with uncertain virological status?
- 70% ethyl alcohol.
 - Hibetan.
 - Sterilium Virugard.
 - Septoderm.
 - Bactolane.

Literature:

Basic:

- Oral and Maxillofacial Surgery: Textbook, Part 1, 2 / V.O. Malanchuk. – Vinnytsia: Nova Knyha Publishers, 2011. – 453p.
- Principles of Dental Local Anaesthesia and Teeth Removal / Ya. E. Vares, R. Z. Ogonovsky, Ch. R. Pohranychna – LNMU, 2007. – 63p.
- Atlas of Human Anatomy / F. Netter – 2nd ed. – New Jersey: ICON Learning Systems. – 592 p.

Additional:

- Contemporary Oral and Maxillofacial Surgery / L. J. Peterson, E. Ellis, J. R. Hupp, M.R. Tucker – 3rd ed. – St. Louis: Mosby – Year Book, Inc. – 1998. – 1477 p.

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Head of the Department:
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METHODICAL GIUDE FOR PRACTICAL LESSONS

Educational discipline	SURGICAL DENTISTRY
Topic of the lesson	Topic №3. Pain, its components, pathways of pain. Classification of anesthesia methods, indications and contraindications. General anesthesia. Sedation.
Course	3 rd
Faculty	Dental

Actuality of the topic: expectation of surgery leads to psycho-emotional stress of the patient, as well as to pathophysiological disorders in the body. An effective measure of prevention of such conditions of the organism, achievement of safe and effective anesthesia, favorable flow of surgical intervention and reduction of its degree of risk is preoperative medical preparation (premedication). Therefore, consideration of these issues is important part of education of future dentists.

Aim of the lesson: To consider the mechanism of pain syndrome in patients in case of surgery in the maxillofacial area. To acquaint the students with different ways of anesthesia, possible schemes of premedication and ways of neuroleptanalgesia.

Learning objectives:

➤ *Professional competence:*

1. Collection of medical information on the patient's condition.
2. Evaluation of the results of laboratory and instrumental research.
3. Establishment of a clinical diagnosis of dental disease.
4. Planning and conducting preventive measures for dental diseases.
5. Execution of medical and dental manipulations.
6. Organization and conducting of dental medical examination of persons subject to dispensary supervision.
7. Assessment of the environmental impact on the health of the population (individual, family, population).
8. Maintaining medical records.
9. Processing of state, social and medical information.

➤ *General competence:*

1. The ability to abstract thinking, analysis and synthesis; the ability to learn and be trained today.
2. Knowledge and understanding of the subject area and understanding of the profession.
3. Ability to apply knowledge in practical situations.
4. Ability to communicate in the state language both verbally and in writing; Ability to communicate in a second language.
5. Skills in the use of information and communication technologies.
6. Ability to search, process and analyze information from various sources.
7. Ability to adapt and act in a new situation; ability to work autonomously.
8. Ability to identify, put and solve problems.
9. Ability to choose a communication strategy.
10. Ability to work in a team.
11. Interpersonal skills.
12. Ability to act on the basis of ethical considerations (motives).
13. Ability to act in a socially responsible and civic conscious manner.

Methods of training:

Preparatory stage - Frontal oral interview.

The main stage - practical training, role-playing game.

The final stage is brainstorming.

Interdisciplinary integration

Disciplines	Student should know	Student should be able to
Previous:		
Normal anatomy	Know the anatomical and physiological features of the maxillofacial area: - structure of the upper and lower jaws;	To be able to explain the structure of systems and organs of maxillo-facial area (MFA)

Normal physiology	- innervation and vascularization of these sites; - structure of the lymphatic system of the head and neck; - structure of the muscles of the head and neck; - structure of the head and neck areas.	
Topographical anatomy	To know the topography of the organs of MFA	To be able to explain the topography of the organs of MFA
Hystology	To know histological structure of soft and hard tissues of MFA	To be able to explain the stages of manufacturing of cytological, histological preparations

Plan and organizational structure of practical lesson of the discipline

Duration of practical lesson is 3.5 academic hours – 2 hours. 40 minutes including 10 minutes for a break.

№	The main stages of the lesson, their functions and content	Time period	Methods of education and control	Materials of methodical support	
1.	Preparatory stage	30 min.			
1.1	Organizational measures	5 min.			
1.2	Setting up of educational goals and motivation.	5 min.			
1.3	Control of the initial level of knowledge (standardized control methods).	20 min.	Individual theoretical evaluation. Solving typical tasks. Test control. Written interview.	Question for an individual oral and written evaluation. Typical situational tasks and tests.	Tables, phantoms, collapsible jaws, textbooks, manuals, reference books, atlas, methodical recommendations, video films.
2.	Main Stage	90 min.			
	Formation of professional skills and abilities: 1. Learn to evaluate the general condition of patients. 2. Assign an individual scheme of premedication, depending on the patient's psycho-somatic condition, the aim and volume of the intervention. Select doses of medicaments. 3. Identify indications and contraindications for general anesthesia.		Formation of professional skills: Work with patients with pathology of maxillofacial area. Work out the results of additional methods of examination	Patients with pathology of maxillofacial area. The history of the disease. Selection of results of additional survey methods. Situational tasks. Algorithms. Phantoms, surgical instruments. Thematic videos.	

	4. Evaluate the effectiveness of preoperative preparation of the patients.		of patients with diseases of the maxillofacial area. Solving typical situational tasks. Oral and written evaluation on standardized list of issues. Work with phantoms, view thematic videos.	
3.	Final stage	30 min.		
3.1	Control and correction of the level of professional skills and abilities		Individual skills control. Control of skills by solving non-typical situational problems with illustrative material.	Phantoms, surgical instruments. The history of the disease. Selection of results of additional methods of examination of thematic patients. Unusual situational tasks.
3.2	Control and correction of the level of professional skills and abilities.		Final evaluation of the students	
3.3	Homework. Informing students about the topic of the next lesson.			Recommended literature

Methodology of organization of educational process in practical lesson.

STRUCTURE OF PRACTICAL LESSON

Preparation stage (30 min.)

To substantiate the significance of the subject for further study of the discipline and professional activity of the doctor in order to formulate motivation and purposeful educational activity. Get acquainted with students with specific goals and lesson plans. Conduct standardized control of the initial level of student training, discussion and student answers.

- *Organizational part of the lesson: presence check, evaluation of the uniform.*
- *Informing about of the topic and the purpose of the lesson.*

Topic of the lesson: «Pain, its components, pathways of pain. Classification of anesthesia methods, indications and contraindications. General anesthesia. Sedation.»

Aim of the lesson: To consider the mechanism of pain syndrome in patients in case of surgery in the maxillofacial area. To acquaint the students with different ways of anesthesia, possible schemes of premedication and ways of neuroleptanalgesia.

• *Motivation of educational activity.* expectation of surgery leads to psycho-emotional stress of the patient, as well as to pathophysiological disorders in the body. An effective measure of prevention of such conditions of the organism, achievement of safe and effective anesthesia, favorable flow of surgical intervention and reduction of its degree of risk is preoperative medical preparation (premedication). Therefore, consideration of these issues is important part of education of future dentists.

Materials of methodical support of the preparatory stage of the lesson:

Questions to frontal survey:

1. The concept of pain, its types. Causes. Modern theories of pain.
2. Mechanism of perception and transmission of pain signal. The function of the endogenous analgesic system. The interaction of Noci - and antinociceptive systems of the body.
3. Components of the human pain reaction. Factors that affect the perception of pain.
4. The history of anesthesia.
5. The purpose and objectives of medical preoperative preparation of the patient.
6. The types of sedation, its components.
7. Medical scheme of sedation. Modern methods of evaluation of sedation.
8. Potentiation of local anaesthesia. Neuroleptanalgesia. Ataralgesia.
9. Combined anesthesia. Audioanesthesia. Acupuncture. Transcranial electroanalgesia. Transcutaneous electroneurostimulation. Hypnosis.
10. General anesthesia in operations in maxillofacial area. Narcosis, its types.
11. Indications and contraindications to the general anesthesia.
12. Preparation of the patient to the anesthesia.
13. The advantages and disadvantages of different types of narcosis. The modern classification of anesthetic risk.
14. Pharmacological agents used for inhalation and non-inhalation narcosis. Their features.
15. Stages of narcosis.
16. Peculiarities of narcosis in dentistry, oral and maxillofacial surgery.
17. Complications of narcosis. Standards for post anesthetic monitoring of the patient.

The main stage: the formation of professional skills (90 min)

Conducting professional training.

Materials of methodical support of the main stage of the lesson:

Anesthesia is a loss of pain sensitivity, which is achieved by a complex of measures aimed at temporary exclusion of the central or peripheral nervous system. Depending on this anesthesia is divided into general (anesthesia) and local. Despite the considerable successes of general anesthesia and the use of new drugs, it should be noted that the main method of analgesia in the practice of the dentist is still local anesthesia. It is very popular and is widely used in both hospital and outpatient settings.

Local anesthesia should be understood as the inverse interruption of impulse conduction by sensitive nerve fibers, which is achieved physically, chemically or physico-chemically in order to eliminate pain at the site of surgery and is not accompanied by the exclusion of consciousness.

Physical methods are limited in dentistry. Their application is reduced to local cooling of a limited area. This is achieved through the use of ice, dry carbon dioxide or a rapidly evaporating chemical, chloroethyl.

Physico-chemical methods should include electroanalgesia, electromagnetic, laser and audio analgesia, in which electrical current, radiation or sound waves cause the corresponding biochemical processes in the tissues. Achievement of anesthesia with the use of acupuncture technique can be attributed here. Basically, local anesthesia is achieved by the use of pharmacological drugs that cause the corresponding changes in the nerve fiber, which leads to the blockade of non-receptive (painful) impulses.

Local anesthesia involves anesthesia of the tissues of the operative field, without excluding the consciousness of the patient, when the action is performed on the peripheral mechanisms of perception and conduction of pain impulse, that is, on the peripheral parts of the nervous system. The following methods of local anesthesia are distinguished:

- injection (infiltration, conduction anesthesia);
- non-injectable (chemical, physical, physicochemical methods of anesthesia).

The purpose of general anesthesia is to create optimal conditions for the patient's condition and surgeon's work. When choosing a method of anesthesia take into account the general condition of the patient, age, nature of future surgery.

Inhalation anesthesia:

- mask (naso- and oropharyngeal);
- endotracheal (naso- or orotracheal);
- through the tracheostomy.

Non-inhalation anesthesia:

- intravenous;
- rectal.

By the method and amount of injected drugs distinguish:

- mononarcosis (with one anesthetic);
- Polynarcosis (combined, multicomponent or potentiated).

Preparation of the patient for anesthesia. In the preoperative period as a result of mental reactions in patients come of functional impairment. Under the influence of nervous excitation, changing breathing, increase metabolic processes, is the release of large amounts of adrenaline. All this makes it difficult to conduct anesthesia. Except psychogenic, on metabolism, hemodynamics, respiration is influenced by a number of other conditions: the main and concomitant diseases, age of patient and nature of the surgery. Important blood loss that accompanies a complex and lengthy operation. Plan pre-and immediate preoperative preparation of patients, and a plan for the conduct of anesthesia are after studying the General condition of the patient, the data of objective research taking into account the nature of the intended surgery.

Premedication is the direct pharmacological preparation of the patient for anesthesia and surgery. She is assigned to:

- create mental and emotional rest before the surgery;
- facilitating the introduction of anaesthesia and reduce the required dose of the drug;
- prevention of excessive reflex reactions during anesthesia and operation.

Peculiarities of anesthesia in oral and maxillofacial patients:

- difficulties for intubation of the trachea can be caused by the character of pathological process.

- reliable and careful fixation of the endotracheal tube is necessary, as the movement of the head of the patient during surgery can lead to extubation, also the bend of the tube with the development of respiratory failure is possible;

- danger of aspiration of blood and saliva. If during the operation this danger is eliminated by inflating the cuff of the endotracheal tube and additional tamponade, then in the postoperative period it is possible to develop respiratory insufficiency due to the swelling of the soft tissues of the tongue, the bottom of the oral cavity, the presence of secretions in the tissues of the upper respiratory tract;

- the face of the operated patient is closed with a sterile sheet, so the anesthesiologist cannot use eye reflexes to control the depth of anesthesia;

- significant loss is blood loss during some operations on the face due to good vascularization and features of the arterial and venous system of the maxillofacial area. Therefore, timely and complete recovery of blood loss, as well as impaired acid-alkaline state and water-electrolyte balance, which require correction both during surgery and in the postoperative period, is of great importance.

- Algorithms for the formation of professional skills.

1. To evaluate the general condition of patients. Identify groups of risk for general and local anesthesia.
2. To determine the psycho-emotional status of patients. Monitor the function of their autonomic nervous system.
3. Assign an individual scheme of premedication, depending on the psycho-somatic condition, aim and volume of the surgery. Select doses of drugs.
4. To evaluate the effectiveness of the preoperative preparation of patients.
5. To identify clinical manifestations of the reaction of patients to pain stimuli during surgical dental interventions.
6. To adopt standards of post-anesthetic monitoring of the patient.

- Practical tasks (typical, atypical, unpredictable situations).

Individual tasks:

Task # 1.

The patient is preparing for surgery under local anesthesia. What medicament should be administered to the patient during premedication to prevent complications associated with excitation of the vagus nerve?

- A. Atropine
- B. Pilocarpine
- C. Dibazole
- D. Cordyamine
- E. Prozerin

Task # 2.

Analgesic used for neuroleptanalgesia:

- A. Promedol
- B. Morphine
- C. Diclofenac
- D. Analgin
- E. Fentanyl

- Tasks for independent work and work in small groups (interactive teaching methods).

The patient was admitted to the maxillofacial department of the hospital with a diagnosis of phlegmon of the bottom of the oral cavity. Surgery is planned. What method of analgesia is shown in this case? What additional examination methods should be assigned to the patient? What drugs should be used for premedication? Justify your choice.

Final stage (30 min.)

Summing up of the lesson

Materials of methodological support of the final stage of the lesson:

- Brain storm. Students demonstrate an exhaustive description of the unusual clinical situation and offer to offer the most rational diagnostic methods. After recording all the proposed diagnostic methods during the discussion, students choose the most rational.
- Tasks for self-employment. To work on phantoms the technique of examination and palpation of maxillofacial area, oral cavity under conditions of phantom class.
- Evaluation.

Conduct standardized final control using individual test tasks and questions (20 min.), Work check (10 min.). Evaluate the student's current activities during the classroom, taking into account standardized final control, analyze the student's progress, announce the evaluation of each student's activity, and display it in the student attendance and student log book. An adult group at the same

time makes assessments in the record of the record of success and attendance of classes by students, the teacher certifies them with his signature.

Brief informing the students about the topic of the next lesson and the methodical measures for preparing for it.

Basic knowledge level:

1. Anatomy and physiology of the nervous system.
2. The structure and function of the cranial nerves.
3. Topographic and anatomical features of maxillofacial area.
4. Features of innervation of maxillofacial area.
5. Modern pharmacological drugs that affect the central and peripheral parts of the physiology of the nervous system: anesthetics, narcotic and non-narcotic analgesics, neuroleptics, tranquilizers, antihistamines, sedatives and hypnotics, m-cholin blockers, spasmolytics.

List of questions to be studied by the student:

1. The concept of pain, its types. Causes Modern theories of pain.
2. The mechanism of perception and transmission of pain signal. Function of the endogenous pain-free system. Interaction of nociceptive and antinociceptive systems of an organism.
3. Components of human pain response. Factors that affect the sensation of pain.
4. History of the development of anesthesia.
5. Purpose and tasks of medical preoperative preparation of the patient. Premedication, its components. Schemes of premedication. Modern methods of assessing the effectiveness of premedication.
6. Potentiation of local anesthesia. Neuroleptanalgesia
7. Combination anesthesia. Ataralgezia Audio anesthesia. Acupuncture. Transcranial electroanalgesia. Percutaneous electroneurostimulation. Hypnotic effect.
8. General anesthesia in operations in the maxillofacial area. Narcotic disease, its types. Indications and contraindications to its conduct.
9. Preparation of the patient for narcosis.
10. Advantages and disadvantages of narcosis. Modern Classifications of narcosis risks.
11. Pharmacological preparations used for inhalation and non-inhalation narcosis. Their features.
12. Stages of narcosis.
13. Features of anesthesia in dentistry, maxillofacial surgery.
14. Complications of anesthesia. Follow-up standards for patients after narcosis.

The list of practical skills to be learned by the student:

1. To evaluate the general condition of patients. Identify groups of risk for general and local anesthesia.
2. To determine the psycho-emotional status of patients. Monitor the function of their autonomic nervous system.
3. Assign an individual scheme of premedication, depending on the psycho-somatic condition, aim and volume of the surgery. Select doses of drugs.
4. To evaluate the effectiveness of the preoperative preparation of patients.
5. To identify clinical manifestations of the reaction of patients to pain stimuli during surgical dental interventions.
6. To adopt standards of post-anesthetic monitoring of the patient.

Situational tasks and questions on the topic of the lesson:

1. The patient L. complains of difficulty of opening of the mouth and limitation of movements of the lower jaw. The patient's mouth opening width is 0.5 cm. Patient is suffering for 10 years. After providing of clinical examination the primery diagnose was set: osseous ankylosis of the left temporo-mandibular joint. Reconstructive surgery on the lower jaw is planned. What method of anesthesia is advisable to apply?

- A. Endotracheal anesthesia through a tracheostoma.
- B. Mask general anesthesia.
- C. Local anesthesia.
- D. Local potential anesthesia.
- E. Intravenous anesthesia.

2. Patient N., 37, was admitted to the department of oral and maxillofacial surgery with a diagnosis: phlegmon of the bottom of oral cavity. The patient is planned for surgery under general anesthesia. Which medicament should be used for sedation?

- A. Promedol.
- V. Inderal.
- S. Noradrenalin.
- D. Mezatton.
- E. Pahikarpin.

3. Patient R., 51, was admitted to the department of maxillofacial surgery with a diagnosis of phlegmon of the bottom of the oral cavity. The patient is planned to undergo surgery under calypsol anesthesia. Which medicament should be used for premedication to prevent hallucinations and psychomotor arousal?

- A. Seduxen.
- B. Promedol.
- C. Atropine.
- D. Mesaton.
- E. Caffeine.

4. Patient P., 38, was admitted to the department of maxillofacial surgery with a diagnosis of traumatic fracture of the mandible. The patient is undergoing surgery under local anesthesia. Which pharmacological group is prescribed to treat saliva secretion?

- A. M-cholin blockers.
- B. Analgesics.
- C. Diuretics.
- D. Tranquilizers.
- E. Adrenomimetics.

5. The stage of analgesia is:

- A. 1 stage of anesthesia.
- B. 4 stage of anesthesia.
- P. 3 stage of anesthesia.
- D. 2 stage of anesthesia.
- E. 5 stage of anesthesia.

Literature:

Basic:

- 7. Oral and Maxillofacial Surgery: Textbook, Part 1, 2 / V.O. Malanchuk. – Vinnytsia: Nova Knyha Publishers, 2011. – 453p.
- 8. Principles of Dental Local Anaesthesia and Teeth Removal / Ya. E. Vares, R. Z. Ogonovsky, Ch. R. Pohranychna – LNMU, 2007. – 63p.
- 9. Atlas of Human Anatomy / F. Netter – 2nd ed. – New Jersey: ICON Learning Systems. – 592 p.

Additional:

- 3. Contemporary Oral and Maxillofacial Surgery / L. J. Peterson, E. Ellis, J. R. Hupp, M.R. Tucker – 3rd ed. – St. Louis: Mosby – Year Book, Inc. – 1998. – 1477 p.

Ministry of Health of Ukraine
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“Approved”
on the meeting of the Department
of Surgical Dentistry
and Maxillofacial Surgery

Head of the Department:
professor Ya. E. Vares

METHODICAL GIUDE FOR PRACTICAL LESSONS

Educational discipline	SURGICAL DENTISTRY
Topic of the lesson	Topic №4. Local anesthetics, their properties, side effects. Classification. Indications and contraindications for local anesthesia. Methods of topical and infiltrative anesthetics.
Course	3 rd
Faculty	Dental

Actuality of the topic: local anesthesia is the main method of anesthesia in the practice of dentist and maxillofacial surgeon, both in the polyclinic and in the maxillofacial departments of the hospitals. Nowadays, a large arsenal of anesthetics, different in structure and properties, has been developed. This makes it possible to extend the indications to their use in dental practice, to optimally select the medicament for the clinical situation. Modern anesthetic is a complex medicament, which includes a variety of agents (including vasoconstrictors). Knowledge about their properties will allow the dental surgeon to rationally apply the methods of local anesthesia and to avoid unwanted side effects.

Aim of the lesson: To acquaint students with local anesthetics used in dental practice. To teach students modern techniques of non-injection pain management and infiltration anesthesia in the maxillofacial area. To work out the technique of performing non-injection and infiltration anesthesia on phantoms.

Learning objectives:

➤ *Professional competence:*

1. Collection of medical information on the patient's condition.
2. Evaluation of the results of laboratory and instrumental research.
3. Establishment of a clinical diagnosis of dental disease.
4. Planning and conducting preventive measures for dental diseases.
5. Execution of medical and dental manipulations.
6. Organization and conducting of dental medical examination of persons subject to dispensary supervision.
7. Assessment of the environmental impact on the health of the population (individual, family, population).
8. Maintaining medical records.
9. Processing of state, social and medical information.

➤ *General competence:*

1. The ability to abstract thinking, analysis and synthesis; the ability to learn and be trained today.
2. Knowledge and understanding of the subject area and understanding of the profession.
3. Ability to apply knowledge in practical situations.
4. Ability to communicate in the state language both verbally and in writing; Ability to communicate in a second language.
5. Skills in the use of information and communication technologies.
6. Ability to search, process and analyze information from various sources.
7. Ability to adapt and act in a new situation; ability to work autonomously.
8. Ability to identify, put and solve problems.
9. Ability to choose a communication strategy.
10. Ability to work in a team.
11. Interpersonal skills.
12. Ability to act on the basis of ethical considerations (motives).
13. Ability to act in a socially responsible and civic conscious manner.

Methods of training:

Preparatory stage - Frontal oral interview.

The main stage - practical training, role-playing game.

The final stage is brainstorming.

Interdisciplinary integration

Disciplines	Student should know	Student should be able to
Previous:		
<p style="text-align: center;">Normal anatomy</p> <p style="text-align: center;">Normal physiology</p>	<p style="text-align: center;">Know the anatomical and physiological features of the maxillofacial area:</p> <ul style="list-style-type: none"> - structure of the upper and lower jaws; - innervation and vascularization of these sites; - structure of the lymphatic system of the head and neck; - structure of the muscles of the head and neck; - structure of the head and neck areas. 	<p>To be able to explain the structure of systems and organs of maxillo-facial area (MFA)</p>
Topographical anatomy	To know the topography of the organs of MFA	To be able to explain the topography of the organs of MFA
Hystology	To know histological structure of soft and hard tissues of MFA	To be able to explain the stages of manufacturing of cytological, histological preparations
Pharmacology	Know pharmacological characteristics of medicaments used for non-injection and injection methods of terminal anesthesia, vasoconstrictors.	Be able to characterize the anesthetics of different pharmacological groups, vasoconstrictor medicaments.

Plan and organizational structure of practical lesson of the discipline

Duration of practical lesson is 3.5 academic hours – 2 hours. 40 minutes including 10 minutes for a break.

№	The main stages of the lesson, their functions and content	Time period	Methods of education and control	Materials of methodical support	
1.	Preparatory stage	30 min.			
1.1	Organizational measures	5 min.			
1.2	Setting up of educational goals and motivation.	5 min.			
1.3	Control of the initial level of knowledge (standardized control methods).	20 min.	Individual theoretical evaluation. Solving typical tasks. Test control. Written interview.	Question for an individual oral and written evaluation. Typical situational tasks and tests.	Tables, phantoms, collapsible jaws, textbooks, manuals, reference books, atlas, methodical recommendations, video films.
2.	Main Stage	90 min.			

	<p>Formation of professional skills and abilities:</p> <ol style="list-style-type: none"> 1. Learn how to identify in patients the indications and contraindications to local anesthesia. 2. To work out the technique of application anesthesia. 3. To work out the technique of infiltration anesthesia. 		<p>Formation of professional skills: Work with patients with pathology of maxillofacial area. Work out the results of additional methods of examination of patients with diseases of the maxillofacial area. Solving typical situational tasks. Oral and written evaluation on standardized list of issues. Work with phantoms, view thematic videos.</p>	<p>Patients with pathology of maxillofacial area. The history of the disease. Selection of results of additional survey methods. Situational tasks. Algorithms. Phantoms, surgical instruments. Thematic videos.</p>
3.	Final stage	30 min.		
3.1	Control and correction of the level of professional skills and abilities		<p>Individual skills control. Control of skills by solving non-typical situational problems with illustrative material.</p>	<p>Phantoms, surgical instruments. The history of the disease. Selection of results of additional methods of examination of thematic patients. Unusual situational tasks.</p>
3.2	Control and correction of the level of professional skills and abilities.		<p>Final evaluation of the students</p>	
3.3	Homework. Informing students about the topic of the next lesson.			<p>Recommended literature</p>

Methodology of organization of educational process in practical lesson.

STRUCTURE OF PRACTICAL LESSON

Preparation stage (30 min.)

To substantiate the significance of the subject for further study of the discipline and professional activity of the doctor in order to formulate motivation and purposeful educational activity. Get acquainted with students with specific goals and lesson plans. Conduct standardized control of the initial level of student training, discussion and student answers.

- *Organizational part of the lesson: presence check, evaluation of the uniform.*
- *Informing about of the topic and the purpose of the lesson.*

Topic of the lesson: «Local anesthetics, their properties, side effects. Classification. Indications and contraindications for local anesthesia. Methods of topical and infiltrative anesthetics.»

Aim of the lesson: To acquaint students with local anesthetics used in dental practice. To teach students modern techniques of non-injection pain management and infiltration anesthesia in the maxillofacial area. To work out the technique of performing non-injection and infiltration anesthesia on phantoms.

• *Motivation of educational activity.* local anesthesia is the main method of anesthesia in the practice of dentist and maxillofacial surgeon, both in the polyclinic and in the maxillofacial departments of the hospitals. Nowadays, a large arsenal of anesthetics, different in structure and properties, has been developed. This makes it possible to extend the indications to their use in dental practice, to optimally select the medicament for the clinical situation. Modern anesthetic is a complex medicament, which includes a variety of agents (including vasoconstrictors). Knowledge about their properties will allow the dental surgeon to rationally apply the methods of local anesthesia and to avoid unwanted side effects.

Materials of methodical support of the preparatory stage of the lesson:

Questions to frontal survey:

1. Clinical-pharmacological characteristics:

- anesthetics of the group of esters;
- anesthetics of the group of amides;
- vasoconstrictor medicaments that are used with anesthetics for local anesthesia.

2. The separation of anesthetics on the duration of action.

3. Requirements that anesthetics for local anesthesia must met.

4. Method of production of anesthetics, their synonyms, and the maximal doses.

5. Rules for the use of anesthetics in ampoules, vials and carpules.

6. Indications and contraindications to the use of anesthetics and vasoconstrictors in the presence of concomitant pathology.

7. Indications and contraindications to local anesthesia.

8. Classification of local anesthesia:

- non-injection;
- injection (infiltrative, conductive).

9. The advantages and disadvantages of non-injection and infiltrative anesthesia.

The main stage: the formation of professional skills (90 min)

Conducting professional training.

Materials of methodical support of the main stage of the lesson:

Developmental milestones of local anaesthesia. The contribution of local scientists. Types of local anaesthesia. Non-injection methods of local anaesthesia: chemical, physical, physico-chemical, and electric anaesthesia. Injection methods. Needle-free injection using cartridge syringes.

Clinical and pharmacological characteristics of local anaesthetics used in dentistry: novocaine, trimecaine, lidocaine, tetracaine, bumecaine, ultracain etc. Application of

vasoconstrictors for local anaesthesia. Correlation of efficiency of anaesthesia and general condition of the patient, the use of alcohol and other harmful factors.

Application anaesthesia. Techniques, indications and contraindications, possible complications.

Infiltration (terminal) anaesthesia for surgery on soft tissues and alveolar processes. Indications and contraindications for administration.

Anaesthesia in surgical interventions on the maxilla. Conduction anaesthesia. Technique of blocking the II branch of the trigeminal nerve at the round foramen, near infraorbital foramen, maxillary tuber, pterygopalatine and incisive foramen. Intra- and extraoral techniques. Indications and contraindications for administration. Mistakes, complications, their prevention and treatment.

Anaesthesia in surgical interventions on the mandible. Regional (nerve block) anaesthesia. Technique of blocking the III branch of the trigeminal nerve at the oval foramen, near mandibular canal (mandibular and torus anaesthesia), near the mental foramen. Intra- and extraoral techniques of anaesthesia. Indications and contraindications for administration. Mistakes, complications, their prevention and treatment.

The combination of conduction and infiltration anaesthesia in surgical interventions on the maxillo-facial area and tooth extractions. Contraindications for administration of local anaesthesia. subperiosteal anaesthesia, indications, technique, complications. Intraligamentary anaesthesia, indications, technique, advantages and disadvantages and complications. Intrapulpal anaesthesia, indications, technique, complications. Intraosseous anaesthesia, indications, technique, complications.

Mistakes and complications of local anaesthesia: introduction of tissue toxins, damage of nerves, blood vessels, and muscles, contagion, and others. Approximation of jaws after injection. General complications: reaction of cardiovascular system and central nervous system – fainting, collapse; anaphylaxis, other allergic reactions. Providing emergency care. Premedication, its principles, objectives and action. Indications for administration. Peculiarities of administration at the clinic and hospital. Groups of drugs used for premedication and their clinical and pharmacological characteristics (analgesics, tranquilizers, antihistamines, etc.). Types of premedication applied by a dental surgeon and anaesthesiologist.

• Algorithms for the formation of professional skills.

1. To work out on a phantom the chemical method technique of non-injection anaesthesia.
2. To work out on a phantom the physical method technique of non-injection anaesthesia.
3. To work out on the phantom the techniques of:
 - infiltration anaesthesia of the skin;
 - infiltration anaesthesia of subcutaneous fat;
 - infiltration anaesthesia of the mucous membrane;
 - subperiosteal infiltration anaesthesia;
 - intraligamental anaesthesia;
 - intra-pulpal anaesthesia;
 - intraosseous anaesthesia.
4. Write a prescription for a given anaesthetic; give a brief description of it.

• Practical tasks (typical, atypical, unpredictable situations).

Individual tasks:

Task # 1.

In order to enhance the action of local anaesthetics and prevention of allergic reactions the premedication scheme include:

- A. Dimedrol
- B. Spasmalgin
- C. Fentanyl
- D. Seduxen

E. Mesaton

Task # 2.

Anesthetics containing articaine:

- A. Ubistezin
- B. Meaverin
- C. Scandonest
- D. Mesocaine
- E. Carbocaine

- Tasks for independent work and work in small groups (interactive teaching methods).

A patient of 30 years went to the doctor to remove 26 tooth due to exacerbation of chronic periodontitis. Lidocaine will be used for anesthesia. Answer the questions and justify the answers: a) to which group of anesthetics belongs Lidocaine due to the chemical structure; b) for what types of anesthesia is used; c) what are the forms of issue; d) what is added to its solution for the purpose of prolongation of action?

Final stage (30 min.)

Summing up of the lesson

Materials of methodological support of the final stage of the lesson:

- Brain storm. Students demonstrate an exhaustive description of the unusual clinical situation and offer to offer the most rational diagnostic methods. After recording all the proposed diagnostic methods during the discussion, students choose the most rational.
- Tasks for self-employment. To work on phantoms the technique of examination and palpation of maxillofacial area, oral cavity under conditions of phantom class.
- Evaluation.

Conduct standardized final control using individual test tasks and questions (20 min.), Work check (10 min.). Evaluate the student's current activities during the classroom, taking into account standardized final control, analyze the student's progress, announce the evaluation of each student's activity, and display it in the student attendance and student log book. An adult group at the same time makes assessments in the record of the record of success and attendance of classes by students, the teacher certifies them with his signature.

Brief informing the students about the topic of the next lesson and the methodical measures for preparing for it.

Basic knowledge level:

1. Anatomy, innervation and blood supply of the maxillofacial area.
2. Basic physicochemical properties of solutions for local anesthesia and vasoconstrictive medicaments used with local anesthetics.

List of questions to be studied by the student:

1. Clinical and pharmacological characteristics: - anesthetics of the group of esters; - anesthetics of the amide group; - vasoconstrictive drugs used with anesthetics for local anesthesia.
2. Separation of anesthetics by duration of action.
3. Requirements to be met by anesthetics for local anesthesia.
4. Forms of release of anesthetics, their synonyms and maximum doses.
5. Rules for the use of anesthetics in ampoules, vials and carpules.
6. Indications and contraindications to the use of anesthetics and vasoconstrictors in the presence of concomitant pathology.
7. Indications and contraindications to local anesthesia.
8. Classification of local anesthesia: - non-injecting - Injection (infiltration, conductor).
9. Advantages and disadvantages of non-injecting and infiltration anesthesia.

The list of practical skills to be learned by the student:

1. To work out on a phantom the chemical method technique of non-injection anesthesia.
2. To work out on a phantom the physical method technique of non-injection anesthesia.
3. To work out on the phantom the techniques of:
 - infiltration anesthesia of the skin;
 - infiltration anesthesia of subcutaneous fat;
 - infiltration anesthesia of the mucous membrane;
 - subperiosteal infiltration anesthesia;
 - intraligmental anesthesia;
 - intra-pulpal anesthesia;
 - intraosseous anesthesia.
4. Write a prescription for a given anesthetic; give a brief description of it.

Situational tasks and questions on the topic of the lesson:

1. Patient N., 27 years old, at 25 weeks of pregnancy, needs extraction of 16 tooth. Which local anesthetic is appropriate for anesthesia?
 - A. Mepivacaine
 - B. Lidocaine with adrenaline
 - C. Ultracaine D-S
 - D. Ultracaine D-S Forte
 - E. Pyromecain
2. Patient B., was admitted to the department of maxillofacial surgery of the hospital for ulcerative-necrotic gingivostomatitis. The patient was prescribed pyromecain ointment for application anesthesia and anti-inflammatory therapy. What concentration of pyromecain ointment is used for application anesthesia?
 - A. 1%
 - B. 2%
 - C. 3%
 - D. 4%
 - E. 5%
3. Which of the anesthetics belongs to the group of esters:
 - A. Trimecain
 - B. Mepivacaine
 - C. Bupivacaine
 - D. Dikaine
 - E. Ultracaine
4. Which of anesthetics refers to short-acting by the duration:
 - A. Mepivacaine
 - B. Trimecain
 - C. Bupivacaine
 - D. Ultracaine
 - E. Citanest
5. Which of anesthetics refers to the medium-acting by the duration:
 - A. Mepivacaine
 - B. Novocaine
 - C. Ultracaine
 - D. Bupivacaine
 - E. Dikaine

Literature:

Basic:

1. Oral and Maxillofacial Surgery: Textbook, Part 1, 2 / V.O. Malanchuk. – Vinnytsia: Nova Knyha Publishers, 2011. – 453p.
2. Principles of Dental Local Anaesthesia and Teeth Removal / Ya. E. Vares, R. Z. Ogonovsky, Ch. R. Pohranychna – LNMU, 2007. – 63p.
3. Atlas of Human Anatomy / F. Netter – 2nd ed. – New Jersey: ICON Learning Systems. – 592 p.

Additional:

4. Contemporary Oral and Maxillofacial Surgery / L. J. Peterson, E. Ellis, J. R. Hupp, M.R. Tucker – 3rd ed. – St. Louis: Mosby – Year Book, Inc. – 1998. – 1477 p.

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of Surgical Dentistry
and Maxillofacial Surgery

Head of the Department:
professor Ya. E. Vares

METHODICAL GIUDE FOR PRACTICAL LESSONS

Educational discipline	SURGICAL DENTISTRY
Topic of the lesson	Topic №5. Peripheral conductive mandible anesthesia: torusal, mandibular. Indications, methods. Local complications, treatment and prevention.
Course	3 rd
Faculty	Dental

Actuality of the topic: Despite the widespread practical use of infiltration anesthesia, caused mainly by simplicity of providing, there are many clinical situations where tissue infiltration with anesthetics is not effective and sometimes not even desirable. Therefore, studying the techniques of conductive anesthesia on the lower jaw is important in the preparation of future dentists of any specialization.

Aim of the lesson: To teach students modern techniques of conductive anesthesia on the mandible, especially torus and mandibular. To work out on the phantoms the technique of their providing.

Learning objectives:

- *Professional competence:*
 1. Collection of medical information on the patient's condition.
 2. Evaluation of the results of laboratory and instrumental research.
 3. Establishment of a clinical diagnosis of dental disease.
 4. Planning and conducting preventive measures for dental diseases.
 5. Execution of medical and dental manipulations.
 6. Organization and conducting of dental medical examination of persons subject to dispensary supervision.
 7. Assessment of the environmental impact on the health of the population (individual, family, population).
 8. Maintaining medical records.
 9. Processing of state, social and medical information.
- *General competence:*
 1. The ability to abstract thinking, analysis and synthesis; the ability to learn and be trained today.
 2. Knowledge and understanding of the subject area and understanding of the profession.
 3. Ability to apply knowledge in practical situations.
 4. Ability to communicate in the state language both verbally and in writing; Ability to communicate in a second language.
 5. Skills in the use of information and communication technologies.
 6. Ability to search, process and analyze information from various sources.
 7. Ability to adapt and act in a new situation; ability to work autonomously.
 8. Ability to identify, put and solve problems.
 9. Ability to choose a communication strategy.
 10. Ability to work in a team.
 11. Interpersonal skills.
 12. Ability to act on the basis of ethical considerations (motives).
 13. Ability to act in a socially responsible and civic conscious manner.

Methods of training:

Preparatory stage - Frontal oral interview.
 The main stage - practical training, role-playing game.
 The final stage is brainstorming.

Interdisciplinary integration

Disciplines	Student should know	Student should be able to
Previous:		
Normal anatomy	Know the anatomical and physiological features of the	To be able to explain the structure of systems and organs

Normal physiology	maxillofacial area: - structure of the upper and lower jaws; - innervation and vascularization of these sites; - structure of the lymphatic system of the head and neck; - structure of the muscles of the head and neck; - structure of the head and neck areas.	of maxillo-facial area (MFA)
Topographical anatomy	To know the topography of the organs of MFA	To be able to explain the topography of the organs of MFA
Hystology	To know the histological structure of tissues of the nervous system.	Be able to characterize the histostructure of neural tissue.
Pharmacology	Know pharmacological characteristics of medicaments used for non-injection and injection methods of terminal anesthesia, vasoconstrictors.	Be able to characterize the anesthetics of different pharmacological groups, vasoconstrictor medicaments.
Interdisciplinary integration:		
Topic №4. Local anesthetics, their properties, side effects. Classification. Indications and contraindications for local anesthesia. Methods of topical and infiltrative anesthetics	Know the pharmacological characteristics of local anesthetics, their side effects, indications for local anesthesia.	Be able to explain the properties of local anesthetics, their side effects, indications for local anesthesia.

Plan and organizational structure of practical lesson of the discipline

Duration of practical lesson is 3.5 academic hours – 2 hours. 40 minutes including 10 minutes for a break.

№	The main stages of the lesson, their functions and content	Time period	Methods of education and control	Materials of methodical support	
1.	Preparatory stage	30 min.			
1.1	Organizational measures	5 min.			
1.2	Setting up of educational goals and motivation.	5 min.			
1.3	Control of the initial level of knowledge (standardized control methods).	20 min.	Individual theoretical evaluation. Solving typical tasks. Test control. Written interview.	Question for an individual oral and written evaluation. Typical situational tasks and tests.	Tables, phantoms, collapsible jaws, textbooks, manuals, reference books, atlas, methodical recommendation

				s, video films.
2.	Main Stage	90 min.		
	<p>Formation of professional skills and abilities:</p> <ol style="list-style-type: none"> 1. Be able to choose a local anesthetic and determine the dose. 2. Be able to find the the location of the target point of anesthesia using anatomical landmarks. 3. To work out on a phantom the technique of conduction of torusal anesthesia. 4. To work on the phantom technique of conducting of mandibular anesthesia. 		<p>Formation of professional skills: Work with patients with pathology of maxillofacial area. Work out the results of additional methods of examination of patients with diseases of the maxillofacial area. Solving typical situational tasks. Oral and written evaluation on standardized list of issues.Work with phantoms, view thematic videos.</p>	<p>Patients with pathology of maxillofacial area. The history of the disease.Selection of results of additional survey methods. Situational tasks.Algorithms.Photomorphs, surgical instruments.Thematic videos.</p>
3.	Final stage	30 min.		
3.1	Control and correction of the level of professional skills and abilities		Individual skills control.Contr ol of skills by solving non-typical situational problems with illustrative material.	Phantoms, surgical instruments.The history of the disease.Selection of results of additional methods of examination of thematic patients.Unusual situational tasks.
3.2	Control and correction of the level of professional skills and abilities.		Final evaluation of the students	
3.3	Homework. Informing students about the topic of the next lesson.			Recommended literature

Methodology of organization of educational process in practical lesson.

STRUCTURE OF PRACTICAL LESSON

Preparation stage (30 min.)

To substantiate the significance of the subject for further study of the discipline and professional activity of the doctor in order to formulate motivation and purposeful educational activity. Get acquainted with students with specific goals and lesson plans. Conduct standardized control of the initial level of student training, discussion and student answers.

- *Organizational part of the lesson: presence check, evaluation of the uniform.*
- *Informing about of the topic and the purpose of the lesson.*

Topic of the lesson: «Peripheral conductive mandible anesthesia: torusal, mandibular. Indications, methods. Local complications, treatment and prevention.»

Aim of the lesson: To teach students modern techniques of conductive anesthesia on the mandible, especially torusal and mandibular. To work out on the phantoms the technique of their providing.

- *Motivation of educational activity.* Despite the widespread practical use of infiltration anesthesia, caused mainly by simplicity of providing, there are many clinical situations where tissue infiltration with anesthetics is not effective and sometimes not even desirable. Therefore, studying the techniques of conductive anesthesia on the lower jaw is important in the preparation of future dentists of any specialization.

Materials of methodical support of the preparatory stage of the lesson:

Questions to frontal survey:

1. The anatomical structure of the small branches of the third branch of the trigeminal nerve.
2. Anatomical landmarks of localization of area of innervation of the small branches of the third branch of the trigeminal nerve.
3. Anesthetics used for the injection anesthesia, their concentration and properties;
4. Instruments necessary for conductive anesthesia on the mandible.
5. Torusal anesthesia – pain sensitivity of which nerves is blocked; the target point and its anatomy landmarks; point of incertion of the needle: depth and direction of it's way; zone of anesthesia; the most likely complications.
6. Mandibular anesthesia – pain sensitivity of which nerves is blocked; the target point and its anatomy landmarks; point of incertion of the needle: depth and direction of it's way; zone of anesthesia; the most likely complications.

The main stage: the formation of professional skills (90 min)

Conducting professional training.

Materials of methodical support of the main stage of the lesson:

Patients with pathology of the maxillofacial area, medical history and medical charts, algorithms, models, surgical instruments, thematicl videos.

Mandibular anesthesia. Target point — mandibular hole on the inner surface of the mandibular ramus. The average distance to hole from front edge of the ramus of the jaw is 15mm from the rear edge of 13 mm from the lower edge of the jaw 27 mm. In the hole part of the inferior alveolar nerve, close above him — lingual, even higher — buccal nerve.

Finger technique mandibular anesthesia by S.N. Weisblatt. On the right side at wide open the mouth index finger of the left hand applied to the chewing surface of molars (the thickness of a finger, about 10 mm) from the opposite side of the mouth to inject the needle at the level of the finger nail in the pterygo-mandibular fold, advance the needle at 15-20 mm to the stop on the inner surface of the branches of the jaw behind the tongue, where the release of 2-3 ml of anesthetic into the tissue the pterygo-mandibular space, then the needle is taken out at 5-8 mm and let another 2 ml of solution.

Anesthesia comes in 5-7 minutes. 2 nerves are blocked: inferior alveolar and lingual. Zone of anesthesia - from the area of anesthetic injection to the middle of the mandible (at the level of 1-2 teeth there is a cross innervation on the opposite side), except the mucous membrane of the vestibular surface of the collar bone from half 5 to half 7 teeth. The duration of anesthesia is 30-60 minutes or more (depends on the type of anesthetic, patient's condition, etc.).

Apodactyl (fingerless) method by S.N. Weisblatt: When the mouth is wide open, determine the anterior edge of the mandibular ramus above the retromolar triangle. The needle is inserted slightly outside of the pterygo-mandibular fold 10 mm higher from the chewing surface of the lower molars at the position of the syringe in the opposite corner of the mouth. The other part of the method is the same as the previous one.

Torusal anesthesia involves the introduction of a solution to the mandibular increase (torus), which is located above and in front of the mandible, and where there is tissue, through which the solution easily spreads to the three nerves (lower alveolar, lingual, and buccal), which are located below and in the middle of the torus. Anesthesia is performed with the mouth open as much as possible, so the needle is inserted 0.5-1 cm below the chewing surfaces of the upper molars into the furrow between the wing-mandibular fold and the anterior margin of the mandibular ramus. This place is projected onto a torus. The needle is introduced to a depth of 1-1.5 cm and emit an anesthetic solution. With this anesthesia, there is no need to do additional anesthesia of the buccal nerve, which should be done with mandibular anesthesia to remove the molars.

- Algorithms for the formation of professional skills.

1. To collect anamnesis and to examine the patient with pathology of maxillofacial area.
2. Learn how to identify and justify indications and contraindications to local anesthesia.
3. Be able to choose the necessary instruments for anesthesia.
4. Be able choose a local anesthetic and determine the dose.
5. Be able to locate the target point of anesthesia using of anatomical landmarks.
6. To practice the technique of conducting of mandibular anesthesia on the phantom.
7. To practice the technique of conducting of torusal anesthesia on the phantom.

- Practical tasks (typical, atypical, unpredictable situations).

Individual tasks:

Task # 1.

After torus anesthesia nerve blockage occurs

- A. Lingual, buccal and inferior alveolar
- B. Lingual and buccal
- S. Buccal and mandibular
- D. Inferior alveolar and buccal

Task # 2.

What conductive anesthesia is indicated for the removal of 47 tooth?

- A. Bersche's anesthesia.
- B. Mental.
- C. Mandibular.
- D. Torusal.
- E. Anesthesia to round hole.

- Tasks for independent work and work in small groups (interactive teaching methods).

The patient is indicated for removal of 42 tooth due to exacerbation of chronic periodontitis. Intraoral method of mandibular anesthesia was chosen. What nerve formation is anesthetized after mandibular anesthesia?

- A. Inferior alveolar and lingual nerves.
- B. Lingual nerve, buccal and mandibular.

- C. Buccal and mandibular nerves.
- D. Mandibular nerve.
- E. III branch of the trigeminal nerve.

Final stage (30 min.)

Summing up of the lesson

Materials of methodological support of the final stage of the lesson:

- Brain storm. Students demonstrate an exhaustive description of the unusual clinical situation and offer to offer the most rational diagnostic methods. After recording all the proposed diagnostic methods during the discussion, students choose the most rational.
- Tasks for self-employment. To work on phantoms the technique of examination and palpation of maxillofacial area, oral cavity under conditions of phantom class.
- Evaluation.

Conduct standardized final control using individual test tasks and questions (20 min.), Work check (10 min.). Evaluate the student's current activities during the classroom, taking into account standardized final control, analyze the student's progress, announce the evaluation of each student's activity, and display it in the student attendance and student log book. An adult group at the same time makes assessments in the record of the record of success and attendance of classes by students, the teacher certifies them with his signature.

Brief informing the students about the topic of the next lesson and the methodical measures for preparing for it.

Basic knowledge level:

1. Anatomy of the mandible.
2. Topographic and anatomical features of innervation and blood supply of the mandible.
3. Pharmacological solutions used for local anesthesia in the maxillofacial area.

List of questions to be studied by the student:

1. Classification of conductive anesthesia on mandible.
2. Mandibular anesthesia: the place of the injection of the needle, the direction and depth of needle insertion, the target point of anesthesia, the needed amount of anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
3. Torus anesthesia: the place of the injection of the needle, the direction and depth of the needle insertion, the target point of anesthesia, the amount of injected anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
4. Mental anesthesia: the place of the injection of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of injected anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
5. Anesthesia of the lingual nerve: the place of the injection of the needle, the direction and depth of the needle insertion, the target point of anesthesia, the needed amount of anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
6. Anesthetic of the buccal nerve: the place of the injection of the needle, the direction and depth of needle insertion, the target point of anesthesia, the needed amount of anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
7. Block of the motor branches of the trigeminal nerve: the place of the injection of the needle, the direction and depth of the needle insertion, the target point of anesthesia, the amount of injected anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
8. Local complications of anesthesia on the lower jaw, causes of their occurrence. Clinical manifestations.
9. Treatment of the patient in the case of complications.

The list of practical skills to be learned by the student:

1. To collect anamnesis and to examine the patient with pathology of maxillofacial area.

2. Learn how to identify and justify indications and contraindications to local anesthesia.
3. Be able to choose the necessary instruments for anesthesia.
4. Be able choose a local anesthetic and determine the dose.
5. Be able to locate the target point of anesthesia using of anatomical landmarks.
6. To practice the technique of conducting of mandibular anesthesia on the phantom.
7. To practice the technique of conducting of torus anesthesia on the phantom.

Situational tasks and questions on the topic of the lesson:

1. Specify which parts of the clinical examination the patient is composed of.
 - A. Patient complaints and history of life.
 - B. Examination of the oral cavity and additional examination methods.
 - C. Examination of the general condition of the patient and radiography of the teeth.
 - D. Oral and intraoral examination.
 - E. Subjective and objective examination.

2. For removing the second molar on the lower jaw on the left due to exacerbation of chronic periodontitis, the doctor injected a needle into the point of intersection of the groove between the outer slope of the pterygo-mandibular fold and the cheek, and a line drawn conventionally 0.5 cm below the chewing surface of the molars of the upper jaw . What anesthesia did the doctor perform?
 - A. Torus.
 - B. Mandibular.
 - C. Buccal.
 - D. Central near the round hole.
 - E. Central near the oval hole.

3. Patient A., 27, came to the dentist for sanitation of the oral cavity. Objective: the crown of the 47 tooth is destroyed by 2/3. The mucous membrane of the gums in the area of 47 tooth is not changed. Percussion is not painful. What anesthesia should be used to remove a 47 tooth?
 - A. Mandibular and buccal.
 - B. Mandibular, buccal, lingual
 - C. Mental, buccal.
 - D. Torus, lingual.
 - E. Mandibular, torus

4. Patient 38, came to the dentist to remove 46 teeth to prepare for prosthetics. Objective: 46 tooth destroyed by 2/3. Which anesthesia is best for removing a 46 tooth?
 - A. Torus.
 - B. Mandibular and buccal.
 - C. Mental, lingual, buccal,
 - D. Buccal, torus.
 - E. Mandibular, torus.

5. What are the signs of mandibular anesthesia?
 - A. Feeling of numbness of the root of the tongue.
 - B. Feeling of numbness of half of the cheek.
 - C. Feeling of numbness of the lateral surface of the tip of the tongue.
 - D. Feeling of numbness of tongue and upper lip.
 - E. Feeling of numbness of the tip of the tongue on the corresponding side and lower lip.

Literature:

Basic:

1. Oral and Maxillofacial Surgery: Textbook, Part 1, 2 / V.O. Malanchuk. – Vinnytsia: Nova Knyha Publishers, 2011. – 453p.
2. Principles of Dental Local Anaesthesia and Teeth Removal / Ya. E. Vares, R. Z. Ogonovsky, Ch. R. Pohranychna – LNMU, 2007. – 63p.
3. Atlas of Human Anatomy / F. Netter – 2nd ed. – New Jersey: ICON Learning Systems. – 592 p.

Additional:

1. Contemporary Oral and Maxillofacial Surgery / L. J. Peterson, E. Ellis, J. R. Hupp, M.R. Tucker – 3rd ed. – St. Louis: Mosby – Year Book, Inc. – 1998. – 1477 p.

Ministry of Health of Ukraine
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“Approved”
on the meeting of the Department
of Surgical Dentistry
and Maxillofacial Surgery

Head of the Department:
professor Ya. E. Vares

METHODICAL GIUDE FOR PRACTICAL LESSONS

Educational discipline	SURGICAL DENTISTRY
Topic of the lesson	Topic №6. Peripheral conductive mandible anesthesia: mental, buccal and lingual. Indications, methods. Local complications, treatment and prevention.
Course	3 rd
Faculty	Dental

Actuality of the topic: Despite the widespread practical use of infiltration anesthesia, caused mainly by simplicity of providing, there are many clinical situations where tissue infiltration with anesthetics is not effective and sometimes not even desirable. Therefore, studying the techniques of conductive anesthesia on the lower jaw is important in the preparation of future dentists of any specialization.

Aim of the lesson: To teach students modern techniques of conductive anesthesia on the mandible, especially mental, buccal and lingual. To work out on the phantoms the technique of their providing.

Learning objectives:

- *Professional competence:*
 1. Collection of medical information on the patient's condition.
 2. Evaluation of the results of laboratory and instrumental research.
 3. Establishment of a clinical diagnosis of dental disease.
 4. Planning and conducting preventive measures for dental diseases.
 5. Execution of medical and dental manipulations.
 6. Organization and conducting of dental medical examination of persons subject to dispensary supervision.
 7. Assessment of the environmental impact on the health of the population (individual, family, population).
 8. Maintaining medical records.
 9. Processing of state, social and medical information.
- *General competence:*
 1. The ability to abstract thinking, analysis and synthesis; the ability to learn and be trained today.
 2. Knowledge and understanding of the subject area and understanding of the profession.
 3. Ability to apply knowledge in practical situations.
 4. Ability to communicate in the state language both verbally and in writing; Ability to communicate in a second language.
 5. Skills in the use of information and communication technologies.
 6. Ability to search, process and analyze information from various sources.
 7. Ability to adapt and act in a new situation; ability to work autonomously.
 8. Ability to identify, put and solve problems.
 9. Ability to choose a communication strategy.
 10. Ability to work in a team.
 11. Interpersonal skills.
 12. Ability to act on the basis of ethical considerations (motives).
 13. Ability to act in a socially responsible and civic conscious manner.

Methods of training:

Preparatory stage - Frontal oral interview.
 The main stage - practical training, role-playing game.
 The final stage is brainstorming.

Interdisciplinary integration

Disciplines	Student should know	Student should be able to
Previous:		
Normal anatomy	Know the anatomical and physiological features of the maxillofacial area:	To be able to explain the structure of systems and organs of maxillo-facial area (MFA)

Normal physiology	<ul style="list-style-type: none"> - structure of the upper and lower jaws; - innervation and vascularization of these sites; - structure of the lymphatic system of the head and neck; - structure of the muscles of the head and neck; - structure of the head and neck areas. 	
Topographical anatomy	To know the topography of the organs of MFA	To be able to explain the topography of the organs of MFA
Hystology	To know the histological structure of tissues of the nervous system.	Be able to characterize the histostructure of neural tissue.
Pharmacology	Know pharmacological characteristics of medicaments used for non-injection and injection methods of terminal anesthesia, vasoconstrictors.	Be able to characterize the anesthetics of different pharmacological groups, vasoconstrictor medicaments.
Interdisciplinary integration:		
Topic №4. Local anesthetics, their properties, side effects. Classification. Indications and contraindications for local anesthesia. Methods of topical and infiltrative anesthetics	Know the pharmacological characteristics of local anesthetics, their side effects, indications for local anesthesia.	Be able to explain the properties of local anesthetics, their side effects, indications for local anesthesia.

Plan and organizational structure of practical lesson of the discipline

Duration of practical lesson is 3.5 academic hours – 2 hours. 40 minutes including 10 minutes for a break.

№	The main stages of the lesson, their functions and content	Time period	Methods of education and control	Materials of methodical support	
1.	Preparatory stage	30 min.			
1.1	Organizational measures	5 min.			
1.2	Setting up of educational goals and motivation.	5 min.			
1.3	Control of the initial level of knowledge (standardized control methods).	20 min.	Individual theoretical evaluation. Solving typical tasks. Test control. Written interview.	Question for an individual oral and written evaluation. Typical situational tasks and tests.	Tables, phantoms, collapsible jaws, textbooks, manuals, reference books, atlas, methodical recommendations, video films.

2.	Main Stage	90 min.		
	Formation of professional skills and abilities: 1. Be able to choose a local anesthetic and determine the dose. 2. Be able to find the the location of the target point of anesthesia using anatomical landmarks. 3. To work out on a phantom the technique of conduction of mental anesthesia. 4. To work out on a phantom the technique of conduction of lingual anesthesia. 5. To work out on a phantom the technique of conduction of buccal anesthesia.		Formation of professional skills: Work with patients with pathology of maxillofacial area. Work out the results of additional methods of examination of patients with diseases of the maxillofacial area. Solving typical situational tasks. Oral and written evaluation on standardized list of issues. Work with phantoms, view thematic videos.	Patients with pathology of maxillofacial area. The history of the disease. Selection of results of additional survey methods. Situational tasks. Algorithms. Phantoms, surgical instruments. Thematic videos.
3.	Final stage	30 min.		
3.1	Control and correction of the level of professional skills and abilities		Individual skills control. Control of skills by solving non-typical situational problems with illustrative material.	Phantoms, surgical instruments. The history of the disease. Selection of results of additional methods of examination of thematic patients. Unusual situational tasks.
3.2	Control and correction of the level of professional skills and abilities.		Final evaluation of the students	
3.3	Homework. Informing students about the topic of the next lesson.			Recommended literature

Methodology of organization of educational process in practical lesson.

STRUCTURE OF PRACTICAL LESSON

Preparation stage (30 min.)

To substantiate the significance of the subject for further study of the discipline and professional activity of the doctor in order to formulate motivation and purposeful educational activity. Get acquainted with students with specific goals and lesson plans. Conduct standardized control of the initial level of student training, discussion and student answers.

- *Organizational part of the lesson: presence check, evaluation of the uniform.*
- *Informing about of the topic and the purpose of the lesson.*

Topic of the lesson: «Peripheral conductive mandible anesthesia: mental, buccal and lingual. Indications, methods. Local complications, treatment and prevention.»

Aim of the lesson: To teach students modern techniques of conductive anesthesia on the mandible, especially mental, buccal and lingual. To work out on the phantoms the technique of their providing.

- *Motivation of educational activity.* Despite the widespread practical use of infiltration anesthesia, caused mainly by simplicity of providing, there are many clinical situations where tissue infiltration with anesthetics is not effective and sometimes not even desirable. Therefore, studying the techniques of conductive anesthesia on the lower jaw is important in the preparation of future dentists of any specialization.

Materials of methodical support of the preparatory stage of the lesson:

Questions to frontal survey:

1. Anatomical structure of small branches of the third branch of the trigeminal nerve;
2. Anatomical landmarks of localization, zone of innervation of small branches of the third branch of the trigeminal nerve;
3. Anesthetics used for injection analgesia, their concentration and properties;
4. The needed instruments for conducting anesthesia on the lower jaw.
5. Mental anesthesia – nerves which are anesthetized; the target point and its anatomical landmarks; needle insertion point, depth and direction of insertion of the needle; zone of anesthesia; the most likely complications.
6. Buccal anesthesia – nerves which are anesthetized; the target point and its anatomical landmarks; needle insertion point, depth and direction of insertion of the needle; zone of anesthesia; the most likely complications.
7. Lingual anesthesia – nerves which are anesthetized; the target point and its anatomical landmarks; needle insertion point, depth and direction of insertion of the needle; zone of anesthesia; the most likely complications.

The main stage: the formation of professional skills (90 min)

Conducting professional training.

Materials of methodical support of the main stage of the lesson:

Patients with pathology of the maxillofacial area, medical history and medical charts, algorithms, models, surgical instruments, themed videos.

Mental anesthesia. Mental hole is at the level of the projection of the root apex of the tooth 5 and 10-12 mm above the edge of the lower jaw, or in the middle of the distance between the front edge of the masticatory muscle and middle of the chin. The hole of the channel opens upwards, backwards and outwards. From the hole comes out the mental nerve, which innervates the soft tissue of the chin, and vestibular surface of alveolar process of mandible from the second premolar to midline (slightly to the opposite side passes).

Intraoral method: in a closed mouth the cheek is withdrawn outward, the needle is inserted between the 5th and 6th teeth to a depth of 0.5—1 cm in the mobile mucosa in the area of transitional fold. The direction of the needle from top to bottom, back to front and medially. Needed

amount of the anesthetic solution is 2-3 ml; the effect occurs within 3-5 minutes there appears a anesthesia of mandible and soft tissues from mental hole to the middle of the jaw.

Extraoral method: the projection of the mental foramen should be determined (on a vertical line extending from the corner of the mouth 10-12 mm above the edge of the jaw). Technique: Soft tissue is pressed to the mandible, the needle is inserted above the lower edge of the lower jaw 1.5-1 cm at the level of the angle of the mouth (or focusing on the position of 45 teeth) in the direction of downward-forward-midline a depth of about 0.5 cm to the contact of the needle with the bone so that the contact is 1-1.2 cm above the edge of the jaw, and inject 1-2 ml of anesthetic.

The area of anesthesia is the same as for intra-oral method, but for surgery in sections of teeth 1 and 2, local anesthesia should be added to block anastomosis of the nerves from the opposite side.

Anesthesia of the buccal nerve. This anesthesia is basic for the operations on the soft tissues of the alveolar process of the mandible in the area of 5-7 teeth, or as an addition to mandibular anesthesia for operations on the bone in the same area. Technique: the injection of a needle is made into a fold of mucous membrane between the front edge of the ramus of the mandible and alveolar process in the area of 8 tooth or a transitional fold on level 8 of the tooth and inject 1-2 ml of solution. Analgesia occurs within 2-3 min.

Lingual anesthesia. Indicated in operations on the soft tissues of the sublingual area and the anterior 2/3 of the corresponding half of the tongue. Technique: needle is inserted under the mucosa at the area of 8-7 teeth in the place of transition of the mucous membrane of the alveolar process into the hyoid and the bottom of the oral cavity. Injected 2-3 ml of anesthetic solution, its effect occurs within 2-3 min.

• Algorithms for the formation of professional skills.

1. To collect anamnesis and to examine the patient with pathology of maxillofacial area.
2. Learn how to identify and justify indications and contraindications to local anesthesia.
3. Be able to choose the necessary instruments for anesthesia.
4. Be able choose a local anesthetic and determine the dose.
5. Be able to locate the target point of anesthesia using of anatomical landmarks.
6. To practice the technique of conducting of mental anesthesia via extraoral and intraoral methods on the phantom.
7. To practice the technique of conducting of lingual anesthesia on the phantom.
8. To practice the technique of conducting of buccal anesthesia on the phantom.

• Practical tasks (typical, atypical, unpredictable situations).

Individual tasks:

Task # 1.

Which conductive anesthesia is indicated to remove 34 tooth?

- A. Bersche's anesthesia.
- B. Mental.
- C. Mandibular.
- D. Torusal.
- E. Anesthesia near a round hole.

Task # 2.

Which nerve innervates the anterior 2/3 of the tongue?

- A. Buccal.
- B. Lingual.
- C. Lower orbital.
- D. Inferior alveolar.
- E. Mental.

- Tasks for independent work and work in small groups (interactive teaching methods).

Patient V., 42 years old, went to the surgical office of the dental polyclinic complaining of constant aching pain in the area of 34 tooth. Therapeutic endodontic treatment 34 of the tooth does not bring a positive result due to the obstruction of the canals. Objectively: the crown 34 of the tooth is destroyed by a carious process by half the volume of the crown. Tooth percussion is slightly painful. On the radiograph: a rarefaction of rounded bone tissue with clear contours in the area of the apex of the root of a tooth of about 0.6 cm in diameter. What type of anesthesia and what anesthetic should be used to remove a 34 tooth? Justify your choice, describe and demonstrate your anesthesia technique.

Final stage (30 min.)

Summing up of the lesson

Materials of methodological support of the final stage of the lesson:

- Brain storm. Students demonstrate an exhaustive description of the unusual clinical situation and offer to offer the most rational diagnostic methods. After recording all the proposed diagnostic methods during the discussion, students choose the most rational.
- Tasks for self-employment. To work on phantoms the technique of examination and palpation of maxillofacial area, oral cavity under conditions of phantom class.
- Evaluation.

Conduct standardized final control using individual test tasks and questions (20 min.), Work check (10 min.). Evaluate the student's current activities during the classroom, taking into account standardized final control, analyze the student's progress, announce the evaluation of each student's activity, and display it in the student attendance and student log book. An adult group at the same time makes assessments in the record of the record of success and attendance of classes by students, the teacher certifies them with his signature.

Brief informing the students about the topic of the next lesson and the methodical measures for preparing for it.

Basic knowledge level:

1. Anatomy of the mandible.
2. Topographic and anatomical features of innervation and blood supply of the mandible.
3. Pharmacological solutions used for local anesthesia in the maxillofacial area.

List of questions to be studied by the student:

1. Classification of conductive anesthesia on the mandible.
2. Anesthesia of the lingual nerve: the place of the injection of the needle, the direction and depth of the needle insertion, the target point of anesthesia, the amount of anesthetic administered. Clinical effect of anesthesia. Zone of anesthesia.
3. Anesthetic of the buccal nerve: the place of the injection of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of administered anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
4. Block of the motor branches of the trigeminal nerve: the place of the injection of the needle, the direction and depth of the needle insertion, the target point of anesthesia, the amount of injected anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
5. Local complications of anesthesia on the lower jaw, causes of their occurrence. Clinical manifestations.
6. Treatment of the patient in the case of complications.

The list of practical skills to be learned by the student:

1. Be able choose a local anesthetic and determine the dose.
2. Be able to locate the target point of anesthesia using of anatomical landmarks.

3. To practice the technique of conducting of mental anesthesia via extraoral and intraoral methods on the phantom.
4. To practice the technique of conducting of lingual anesthesia on the phantom.
5. To practice the technique of conducting of buccal anesthesia on the phantom.

Situational tasks and questions on the topic of the lesson:

1. Specify of which parts the patient's clinical examination include.
 - A. Complaints of the patient and history of life.
 - B. Examination of the oral cavity and additional examination methods.
 - C. Examination of the general condition of the patient and radiography of the teeth.
 - D. Extera- and intraoral examination.
 - E. Subjective and objective examination.

2. What anesthesia is used to remove 34, 44 teeth?
 - A. Mandibular and infiltration.
 - B. Mental and lingual.
 - S. Torusal.
 - D. Buccal, lingual, mandibular.
 - E. Mandibular and torusal.

3. The patient should undergo mental anesthesia to remove 33 tooth. Where is the point of insertion of the needle?
 - A. At the level of the first molar
 - B. Between the second premolar and the first molar
 - C. Between the first and second cutters.
 - D. Between the second incisor and the canine.
 - E. At canine level

Literature:

Basic:

1. Oral and Maxillofacial Surgery: Textbook, Part 1, 2 / V.O. Malanchuk. – Vinnytsia: Nova Knyha Publishers, 2011. – 453p.
2. Principles of Dental Local Anaesthesia and Teeth Removal / Ya. E. Vares, R. Z. Ogonovsky, Ch. R. Pohranychna – LNMU, 2007. – 63p.
3. Atlas of Human Anatomy / F. Netter – 2nd ed. – New Jersey: ICON Learning Systems. – 592 p.

Additional:

1. Contemporary Oral and Maxillofacial Surgery / L. J. Peterson, E. Ellis, J. R. Hupp, M.R. Tucker – 3rd ed. – St. Louis: Mosby – Year Book, Inc. – 1998. – 1477 p.

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and Maxillofacial Surgery

Head of the Department:
professor Ya. E. Vares

METHODICAL GIUDE FOR PRACTICAL LESSONS

Educational discipline	SURGICAL DENTISTRY
Topic of the lesson	Topic №7. Peripheral conductive maxilla anesthesia: tuberal, infraorbital. Indications, methods. Local complications, treatment and prevention.
Course	3 rd
Faculty	Dental

Actuality of the topic: infiltration anesthesia of the tissues of the upper jaw for outpatient surgery, has a wide practical application, due to the simplicity of providing and anatomical features of the maxillary bones. However, longer and more extensive surgical interventions require deeper analgesia, and tissue infiltration with anesthetics may be ineffective and sometimes not even desirable. Therefore, the study of the techniques of conductive anesthesia in the upper jaw is important in the education of future dentists.

Aim of the lesson: To teach students modern techniques of conducting anesthesia in the upper jaw, including infraorbital and tuberal. To work out on the phantoms the technique of their execution.

Learning objectives:

- *Professional competence:*
 1. Collection of medical information on the patient's condition.
 2. Evaluation of the results of laboratory and instrumental research.
 3. Establishment of a clinical diagnosis of dental disease.
 4. Planning and conducting preventive measures for dental diseases.
 5. Execution of medical and dental manipulations.
 6. Organization and conducting of dental medical examination of persons subject to dispensary supervision.
 7. Assessment of the environmental impact on the health of the population (individual, family, population).
 8. Maintaining medical records.
 9. Processing of state, social and medical information.
- *General competence:*
 1. The ability to abstract thinking, analysis and synthesis; the ability to learn and be trained today.
 2. Knowledge and understanding of the subject area and understanding of the profession.
 3. Ability to apply knowledge in practical situations.
 4. Ability to communicate in the state language both verbally and in writing; Ability to communicate in a second language.
 5. Skills in the use of information and communication technologies.
 6. Ability to search, process and analyze information from various sources.
 7. Ability to adapt and act in a new situation; ability to work autonomously.
 8. Ability to identify, put and solve problems.
 9. Ability to choose a communication strategy.
 10. Ability to work in a team.
 11. Interpersonal skills.
 12. Ability to act on the basis of ethical considerations (motives).
 13. Ability to act in a socially responsible and civic conscious manner.

Methods of training:

Preparatory stage - Frontal oral interview.
 The main stage - practical training, role-playing game.
 The final stage is brainstorming.

Interdisciplinary integration

Disciplines	Student should know	Student should be able to
Previous:		
Normal anatomy	Know the anatomical and physiological features of the	To be able to explain the structure of systems and organs

Normal physiology	maxillofacial area: - structure of the upper and lower jaws; - innervation and vascularization of these sites; - structure of the lymphatic system of the head and neck; - structure of the muscles of the head and neck; - structure of the head and neck areas.	of maxillo-facial area (MFA)
Topographical anatomy	To know the topography of the organs of MFA	To be able to explain the topography of the organs of MFA
Hystology	To know the histological structure of tissues of the nervous system.	Be able to characterize the histostructure of neural tissue.
Pharmacology	Know pharmacological characteristics of medicaments used for non-injection and injection methods of terminal anesthesia, vasoconstrictors.	Be able to characterize the anesthetics of different pharmacological groups, vasoconstrictor medicaments.
Interdisciplinary integration:		
Topic №4. Local anesthetics, their properties, side effects. Classification. Indications and contraindications for local anesthesia. Methods of topical and infiltrative anesthetics	Know the pharmacological characteristics of local anesthetics, their side effects, indications for local anesthesia.	Be able to explain the properties of local anesthetics, their side effects, indications for local anesthesia.

Plan and organizational structure of practical lesson of the discipline

Duration of practical lesson is 3.5 academic hours – 2 hours. 40 minutes including 10 minutes for a break.

№	The main stages of the lesson, their functions and content	Time period	Methods of education and control	Materials of methodical support	
1.	Preparatory stage	30 min.			
1.1	Organizational measures	5 min.			
1.2	Setting up of educational goals and motivation.	5 min.			
1.3	Control of the initial level of knowledge (standardized control methods).	20 min.	Individual theoretical evaluation. Solving typical tasks. Test control. Written interview.	Question for an individual oral and written evaluation. Typical situational tasks and tests.	Tables, phantoms, collapsible jaws, textbooks, manuals, reference books, atlas, methodical recommendation

				s, video films.
2.	Main Stage	90 min.		
	<p>Formation of professional skills and abilities:</p> <ul style="list-style-type: none"> • Algorithms for the formation of professional skills. <ol style="list-style-type: none"> 1. Be able choose a local anesthetic and determine the dose. 2. Be able to locate the target point of anesthesia using of anatomical landmarks. 3. To practice the technique of conducting of tuberal anesthesia on the phantom. 4. To practice the technique of conducting of infraorbital anesthesia on the phantom. 		<p>Formation of professional skills: Work with patients with pathology of maxillofacial area. Work out the results of additional methods of examination of patients with diseases of the maxillofacial area. Solving typical situational tasks. Oral and written evaluation on standardized list of issues. Work with phantoms, view thematic videos.</p>	<p>Patients with pathology of maxillofacial area. The history of the disease. Selection of results of additional survey methods. Situational tasks. Algorithms. Phantoms, surgical instruments. Thematic videos.</p>
3.	Final stage	30 min.		
3.1	Control and correction of the level of professional skills and abilities		Individual skills control. Control of skills by solving non-typical situational problems with illustrative material.	Phantoms, surgical instruments. The history of the disease. Selection of results of additional methods of examination of thematic patients. Unusual situational tasks.
3.2	Control and correction of the level of professional skills and abilities.		Final evaluation of the students	
3.3	Homework. Informing students about the topic of the next lesson.			Recommended literature

Methodology of organization of educational process in practical lesson.

STRUCTURE OF PRACTICAL LESSON

Preparation stage (30 min.)

To substantiate the significance of the subject for further study of the discipline and professional activity of the doctor in order to formulate motivation and purposeful educational activity. Get acquainted with students with specific goals and lesson plans. Conduct standardized control of the initial level of student training, discussion and student answers.

- *Organizational part of the lesson: presence check, evaluation of the uniform.*
- *Informing about of the topic and the purpose of the lesson.*

Topic of the lesson: «Peripheral conductive maxilla anesthesia: tuberal, infraorbital. Indications, methods. Local complications, treatment and prevention.»

Aim of the lesson: To teach students modern techniques of conducting anesthesia in the upper jaw, including infraorbital and tuberal. To work out on the phantoms the technique of their execution.

- *Motivation of educational activity.* infiltration anesthesia of the tissues of the upper jaw for outpatient surgery, has a wide practical application, due to the simplicity of providing and anatomical features of the maxillary bones. However, longer and more extensive surgical interventions require deeper analgesia, and tissue infiltration with anesthetics may be ineffective and sometimes not even desirable. Therefore, the study of the techniques of conductive anesthesia in the upper jaw is important in the education of future dentists.

Materials of methodical support of the preparatory stage of the lesson:

Questions to frontal survey:

1. Anatomical structure of the second branch of the trigeminal nerve.
2. Zone of innervations of the second branch of the trigeminal nerve.
3. Anesthetics used for injection analgesia, their concentration and properties.
4. The needed instruments for conducting anesthesia on the upper jaw.
5. Tuberal anesthesia – nerves which are anesthetized; the target point and its anatomical landmarks; needle insertion point, depth and direction of insertion of the needle; zone of anesthesia; the most likely complications.
6. Infraorbital anesthesia (intraoral method) – nerves which are anesthetized; the target point and its anatomical landmarks; needle insertion point, depth and direction of insertion of the needle; zone of anesthesia; the most likely complications.

The main stage: the formation of professional skills (90 min)

Conducting professional training.

Materials of methodical support of the main stage of the lesson:

Block of superior anterior alveolar nerves (infraorbital anaesthesia). Used in operative interferences on the front and lateral region of the maxilla, extraction of upper incisors, canines and bicuspid, and also in operations on the lower eyelid, cheek, nose and upper lip. Anaesthesia near the infraorbital foramen is executed by two methods - intra- and extraoral. An intraoral approach is more useful than extraoral. At first it is needed to define a location of the infraorbital foramen, according the special identification points. The foramen is located on 0,5-0,75 cm below the lower edge of the orbit and on 0,5 cm medial from its middle. It is possible to be oriented using the location of the teeth : opening is located on a vertical line, conducted through the second bicuspid, and on 0,5-0,75 cm below the infraorbital edge. For achieving a good effect solution of anesthetic must be entered directly into an infraorbital channel, which axis is directed a bit forward, medial and low.

After determination of infraorbital foramen location, firmly fix the index finger of left arm to this place. Displace an upper lip with thumb of that hand outside and up. Needle of 4-5 cm long is entered through the mucousa between central and lateral incisors in direction to infraorbital foramen, which is at the level of the tip of index finger. For painless advancement of needle it is needed to introduce approximately 0,5 ml anesthetic, then needle is advanced into a channel on a

depth 7-10 mm. Then 0,5-0,75 ml solution of anaesthetic is introduced. If an inflammatory process takes place in the area of frontal teeth, a needle can be entered at the level of canine or first bicuspid and moved toward infraorbital foramen (anaesthesia is less intensive). To block the anastomoses from the opposite side, anesthetic is introduced at the level of frenulum of the upper lip (0,3-0,5 ml).

Extraoral way. Determine a projection of the infraorbital foramen. At this level soft tissues are fixed with index finger of left arm. Injection is made to the bone, and then 0,5-1 ml solution of anesthetic is introduced with the purpose of painless search for the infraorbital foramen. When the needle has occurred in a channel, the patient feels brief pain. Slowly inject anesthetic, a needle is moved forward into a channel on the depth 6-10 mm to the direction of the up, ahead and outside. Less than 1,5-2 ml of solution is introduced into a canal. The anaesthesia occurs in 7-10 minutes.

Method of an infraorbital nerve block by an eye socket way. Determine and fix the place of puncture with the finger imposed on the lower edge of the eye socket. At first prick the skin to the bone in the middle of the eye socket edge. Release a bit of anaesthetic solution and pass the needle from the front surface of the edge on upper. Lift the syringe slightly up and, continually releasing the anesthetic, move the needle forward in 1 cm. The complete anaesthetizing of the area occurs in 5-10 minutes after injection.

Thus, there are two ways to perform infraorbital anaesthesia: from the side of the infraorbital foramen and from the side of the infraorbital groove. The first is named front, or facial; it can be fulfilled by extra- or intraoral way, and can be extra- or intrachannel. The second is named the eye socket way, and it only can be extraoral and extrachannel.

Complications. During infraorbital anaesthesia, there is a risk of injury of the angular artery and front facial vein, and during advancement of the needle into a channel - to injure an infraorbital vein and artery. Sometimes, an ischemia of the skin of the infraorbital area arises. If the anesthetic goes to the orbit, it can be diplopia due to block of motor nerves of III cranial nerve. The trauma of infraorbital nerve can result in neuritis. It is not needed any treatment in recalled complications.

The posterior superior alveolar (PSA) nerve block is a commonly used dental nerve block. Although it is a highly successful technique (> 90%), there are several issues to weigh when considering its use. These include the extent of anaesthesia produced and the potential for hematoma formation.

When used to achieve pulpal anaesthesia, the PSA nerve block is effective for the maxillary third, second, and first molars in 77% to 100% of patients. The risk of a potential complication must also be considered whenever the PSA block is used. Penetration of the needle too far distally may lead to a temporarily unaesthetic haematoma. When the PSA is to be administered, one must always consider the patient's (skull) size in determining the depth of soft tissue penetration.

Destination point - tuber maxillae, where posterior superior alveolar branches go into maxilla, and supply posterior part of alveolar process. Used to anesthetize the pulpal tissue, corresponding alveolar bone, and buccal gingival tissue to the maxillary 1st, 2nd, and 3rd molars.

Technique: Area of insertion- height of mucous buccal fold between 1st and 2nd molar. Angle at 45° superiorly and medially. No resistance should be felt (if bony contact angle is to medial, reposition laterally). Insert about 15-20mm. Advance needle upward, inward and backward. Aspirate then inject if it is negative probe. *Complications.* Haematoma can occur when the needle is advanced too deep, because of the presence of the vascular plex.

• Algorithms for the formation of professional skills.

1. To collect anamnesis and to examine the patient with pathology of maxillofacial area.
2. Learn how to identify and justify indications and contraindications to local anesthesia.
3. Be able to choose the necessary instruments for anesthesia.
4. Be able choose a local anesthetic and determine the dose.
5. Be able to locate the target point of anesthesia using of anatomical landmarks.
6. To practice the technique of conducting of tuberal anesthesia on the phantom.
7. To practice the technique of conducting of infraorbital anesthesia on the phantom.

- Practical tasks (typical, atypical, unpredictable situations).

Individual tasks:

Task # 1.

The conductivity of which nerve is blocked during infraorbital anesthesia?

- A. Incisor
- B. Greater palatal
- C. Nasal and palatal
- D. Small palatal
- E. Infraorbital
- F. Auriculo-temporal

Task # 2

The patient had a hematoma during tuber anesthesia. What is the most likely cause of its occurrence?

- A. Damage of the maxillary vein.
- B. Damage of the maxillary artery.
- C. Damage of the internal carotid artery.
- D. Damage of the pterygoid plexus.
- E. Damage of the posterior superior cell veins and arteries.

- Tasks for independent work and work in small groups (interactive teaching methods).

Patient V., 42 years old, came to the surgical office of the dental polyclinic complaining of constant aching pain in the area of chewing teeth of the upper jaw on the left. Therapeutic endodontic treatment of the 27 tooth does not bring a positive result due to the obstruction of the canals. Objectively: the crown of the 27 tooth is destroyed by a carious process by one fourth of the volume of the crown. Tooth percussion is slightly painful. On the radiograph: a rarefaction of a rounded bone without clear contours in the region of the apexes of the buccal roots of the 27 tooth with a diameter of about 0.5 cm, resembling “flame tongues”. What kind of anesthesia and what anesthetic should be performed to remove 27 teeth? Justify your choice, describe and demonstrate your anesthesia technique.

Final stage (30 min.)

Summing up of the lesson

Materials of methodological support of the final stage of the lesson:

- Brain storm. Students demonstrate an exhaustive description of the unusual clinical situation and offer to offer the most rational diagnostic methods. After recording all the proposed diagnostic methods during the discussion, students choose the most rational.
- Tasks for self-employment. To work on phantoms the technique of examination and palpation of maxillofacial area, oral cavity under conditions of phantom class.
- Evaluation.

Conduct standardized final control using individual test tasks and questions (20 min.), Work check (10 min.). Evaluate the student's current activities during the classroom, taking into account standardized final control, analyze the student's progress, announce the evaluation of each student's activity, and display it in the student attendance and student log book. An adult group at the same time makes assessments in the record of the record of success and attendance of classes by students, the teacher certifies them with his signature.

Brief informing the students about the topic of the next lesson and the methodical measures for preparing for it.

Basic knowledge level:

1. Anatomy of the maxilla.
2. Topographic and anatomical features of innervation and blood supply of the mandible.
3. Pharmacological solutions used for local anesthesia in the maxillofacial area.

List of questions to be studied by the student:

1. Classification of conduction anesthesia on the upper jaw.
2. Infraorbital anesthesia: the place of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of administered anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
3. Tuberal anesthesia: the place of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of administered anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
4. Incisor anesthesia: the place of the injection of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of administered anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
5. Palatal anesthesia: the place of the injection of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of anesthetic administered. Clinical effect of anesthesia. Zone of anesthesia.
6. External methods of conducting anesthesia on the upper jaw. Indications to hold.
7. Anesthesia of the upper dental plexus (pleural anesthesia).
8. Local complications of anesthesia on the upper jaw, causes of their occurrence. Clinical manifestations.
9. Treatment of the patient in the case of complications.

The list of practical skills to be learned by the student:

1. Be able choose a local anesthetic and determine the dose.
2. Be able to locate the target point of anesthesia using of anatomical landmarks.
3. To practice the technique of conducting of infraorbital anesthesia via extraoral method on the phantom.
4. To practice the technique of conducting of infraorbital and tuberal anesthetics via intraoral method on the phantom.

Situational tasks and questions on the topic of the lesson:

1. Specify of which parts the patient's clinical examination include.
 - A. Complaints of the patient and history of life.
 - B. Examination of the oral cavity and additional examination methods.
 - C. Examination of the general condition of the patient and radiography of the teeth.
 - D. Extera- and intraoral examination.
 - E. Subjective and objective examination.
2. A patient of 24 years applied for the removal of 25 teeth. What method of analgesia should be used?
 - A. Unilateral tuberal and palatal anesthesia.
 - B. Unilateral infraorbital and incisor anesthesia.
 - C. Unilateral tuberal, infraorbital, and palatal anesthesia.
 - D. Unilateral central anesthesia.
 - E. Unilateral infraorbital and palatal anesthesia.
3. A 50-year-old man came to the dental surgery clinic complaining of constant severe aching pain in the upper jaw area on the right. From the anamnesis it is known that 16 teeth were repeatedly but unsuccessfully treated by a dentist for exacerbation of chronic periodontitis. What kind of anesthesia should be used when removing a 16 tooth?
 - A. Tuberal, incisor and palatal.
 - B. Tuberal and incisor.
 - C. Torusal.

- D. Incisor and palatal.
- E. Tuberal and palatal.

4. In case of exacerbation of chronic periodontitis extraction of 22 tooth was indicated to the patients. Infraorbital and incisor anesthesia were chosen. What nerves are blocked after the specified anesthesia?

- A. Greater palatal nerve, middle upper alveolar branches.
- B. Nose and palatine nerve, anterior superior alveolar branches.
- C. Middle upper alveolar branches, n. nasopalatinus.
- D. Posterior upper alveolar branches, n. incisivus.
- E. Anterior upper alveolar branches, n. incisivus.

Literature:

Basic:

1. Oral and Maxillofacial Surgery: Textbook, Part 1, 2 / V.O. Malanchuk. – Vinnytsia: Nova Knyha Publishers, 2011. – 453p.
2. Principles of Dental Local Anaesthesia and Teeth Removal / Ya. E. Vares, R. Z. Ogonovsky, Ch. R. Pohranychna – LNMU, 2007. – 63p.
3. Atlas of Human Anatomy / F. Netter – 2nd ed. – New Jersey: ICON Learning Systems. – 592 p.

Additional:

1. Contemporary Oral and Maxillofacial Surgery / L. J. Peterson, E. Ellis, J. R. Hupp, M.R. Tucker – 3rd ed. – St. Louis: Mosby – Year Book, Inc. – 1998. – 1477 p.

Ministry of Health of Ukraine
Danylo Halytsky Lviv National Medical University

“Approved”
on the meeting of the Department
of Surgical Dentistry
and Maxillofacial Surgery

Head of the Department:
professor Ya. E. Vares

METHODICAL GIUDE FOR PRACTICAL LESSONS

Educational discipline	SURGICAL DENTISTRY
Topic of the lesson	Topic №8. Peripheral conductive maxilla anesthesia: nasopalatal(incisal), palatal. Indications, methods. Local complications, treatment and prevention.
Course	3 rd
Faculty	Dental

Actuality of the topic: infiltration anesthesia of the tissues of the upper jaw for outpatient surgery, has a wide practical application, due to the simplicity of providing and anatomical features of the maxillary bones. However, longer and more extensive surgical interventions require deeper analgesia, and tissue infiltration with anesthetics may be ineffective and sometimes not even desirable. Therefore, the study of the techniques of conductive anesthesia in the upper jaw is important in the education of future dentists.

Aim of the lesson: To teach students modern techniques of conducting anesthesia in the upper jaw, including incisial and palatal. To work out on the phantoms the technique of their execution.

Learning objectives:

- *Professional competence:*
 1. Collection of medical information on the patient's condition.
 2. Evaluation of the results of laboratory and instrumental research.
 3. Establishment of a clinical diagnosis of dental disease.
 4. Planning and conducting preventive measures for dental diseases.
 5. Execution of medical and dental manipulations.
 6. Organization and conducting of dental medical examination of persons subject to dispensary supervision.
 7. Assessment of the environmental impact on the health of the population (individual, family, population).
 8. Maintaining medical records.
 9. Processing of state, social and medical information.
- *General competence:*
 1. The ability to abstract thinking, analysis and synthesis; the ability to learn and be trained today.
 2. Knowledge and understanding of the subject area and understanding of the profession.
 3. Ability to apply knowledge in practical situations.
 4. Ability to communicate in the state language both verbally and in writing; Ability to communicate in a second language.
 5. Skills in the use of information and communication technologies.
 6. Ability to search, process and analyze information from various sources.
 7. Ability to adapt and act in a new situation; ability to work autonomously.
 8. Ability to identify, put and solve problems.
 9. Ability to choose a communication strategy.
 10. Ability to work in a team.
 11. Interpersonal skills.
 12. Ability to act on the basis of ethical considerations (motives).
 13. Ability to act in a socially responsible and civic conscious manner.

Methods of training:

Preparatory stage - Frontal oral interview.
 The main stage - practical training, role-playing game.
 The final stage is brainstorming.

Interdisciplinary integration

Disciplines	Student should know	Student should be able to
Previous:		
Normal anatomy	Know the anatomical and physiological features of the maxillofacial area:	To be able to explain the structure of systems and organs of maxillo-facial area (MFA)

Normal physiology	<ul style="list-style-type: none"> - structure of the upper and lower jaws; - innervation and vascularization of these sites; - structure of the lymphatic system of the head and neck; - structure of the muscles of the head and neck; - structure of the head and neck areas. 	
Topographical anatomy	To know the topography of the organs of MFA	To be able to explain the topography of the organs of MFA
Hystology	To know the histological structure of tissues of the nervous system.	Be able to characterize the histostructure of neural tissue.
Pharmacology	Know pharmacological characteristics of medicaments used for non-injection and injection methods of terminal anesthesia, vasoconstrictors.	Be able to characterize the anesthetics of different pharmacological groups, vasoconstrictor medicaments.
Interdisciplinary integration:		
Topic №4. Local anesthetics, their properties, side effects. Classification. Indications and contraindications for local anesthesia. Methods of topical and infiltrative anesthetics	Know the pharmacological characteristics of local anesthetics, their side effects, indications for local anesthesia.	Be able to explain the properties of local anesthetics, their side effects, indications for local anesthesia.

Plan and organizational structure of practical lesson of the discipline

Duration of practical lesson is 3.5 academic hours – 2 hours. 40 minutes including 10 minutes for a break.

№	The main stages of the lesson, their functions and content	Time period	Methods of education and control	Materials of methodical support	
1.	Preparatory stage	30 min.			
1.1	Organizational measures	5 min.			
1.2	Setting up of educational goals and motivation.	5 min.			
1.3	Control of the initial level of knowledge (standardized control methods).	20 min.	Individual theoretical evaluation. Solving typical tasks. Test control. Written interview.	Question for an individual oral and written evaluation. Typical situational tasks and tests.	Tables, phantoms, collapsible jaws, textbooks, manuals, reference books, atlas, methodical recommendations, video films.

2.	Main Stage	90 min.		
	<p>Formation of professional skills and abilities:</p> <ul style="list-style-type: none"> • Algorithms for the formation of professional skills. <ol style="list-style-type: none"> 1. Be able choose a local anesthetic and determine the dose. 2. Be able to locate the target point of anesthesia using of anatomical landmarks. 3. To practice the technique of conducting of incisial anesthesia via intraoral and intranasal methods on the phantom. 4. To practice the technique of conducting of palatal anesthesia on the phantom. 		<p>Formation of professional skills: Work with patients with pathology of maxillofacial area. Work out the results of additional methods of examination of patients with diseases of the maxillofacial area. Solving typical situational tasks. Oral and written evaluation on standardized list of issues. Work with phantoms, view thematic videos.</p>	<p>Patients with pathology of maxillofacial area. The history of the disease. Selection of results of additional survey methods. Situational tasks. Algorithms. Phantoms, surgical instruments. Thematic videos.</p>
3.	Final stage	30 min.		
3.1	Control and correction of the level of professional skills and abilities		Individual skills control. Control of skills by solving non-typical situational problems with illustrative material.	Phantoms, surgical instruments. The history of the disease. Selection of results of additional methods of examination of thematic patients. Unusual situational tasks.
3.2	Control and correction of the level of professional skills and abilities.		Final evaluation of the students	
3.3	Homework. Informing students about the topic of the next lesson.			Recommended literature

Methodology of organization of educational process in practical lesson.

STRUCTURE OF PRACTICAL LESSON

Preparation stage (30 min.)

To substantiate the significance of the subject for further study of the discipline and professional activity of the doctor in order to formulate motivation and purposeful educational activity. Get acquainted with students with specific goals and lesson plans. Conduct standardized control of the initial level of student training, discussion and student answers.

- *Organizational part of the lesson: presence check, evaluation of the uniform.*
- *Informing about of the topic and the purpose of the lesson.*

Topic of the lesson: «Topic №8. Peripheral conductive maxilla anesthesia: nasopalatal(incisal), palatal. Indications, methods. Local complications, treatment and prevention.»

Aim of the lesson: To teach students modern techniques of conducting anesthesia in the upper jaw, including incisial and palatal. To work out on the phantoms the technique of their execution.

- *Motivation of educational activity.* infiltration anesthesia of the tissues of the upper jaw for outpatient surgery, has a wide practical application, due to the simplicity of providing and anatomical features of the maxillary bones. However, longer and more extensive surgical interventions require deeper analgesia, and tissue infiltration with anesthetics may be ineffective and sometimes not even desirable. Therefore, the study of the techniques of conductive anesthesia in the upper jaw is important in the education of future dentists.

Materials of methodical support of the preparatory stage of the lesson:

Questions to frontal survey:

1. Anatomical structure of second branch of the trigeminal nerve;
2. Anatomical landmarks of localization, zone of innervation of small branches of the third branch of the trigeminal nerve;
3. Anesthetics used for injection analgesia, their concentration and properties;
4. The needed instruments for conducting anesthesia on the lower jaw.
5. Palatal anesthesia – nerves which are anesthetized; the target point and its anatomical landmarks; needle insertion point, depth and direction of insertion of the needle; zone of anesthesia; the most likely complications.
6. Incisor anesthesia (intraoral method) – nerves which are anesthetized; the target point and its anatomical landmarks; needle insertion point, depth and direction of insertion of the needle; zone of anesthesia; the most likely complications.
7. Incisor anesthesia (extraoral method) – nerves which are anesthetized; the target point and its anatomical landmarks; needle insertion point, depth and direction of insertion of the needle; zone of anesthesia; the most likely complications.

The main stage: the formation of professional skills (90 min)

Conducting professional training.

Materials of methodical support of the main stage of the lesson:

The greater palatine nerve block is quite useful during dental procedures involving the palatal soft tissues distal to the canine. Minimum volumes of solution (0.3 to 0.6 ml) provide profound hard and soft tissue anaesthesia. Although potentially traumatic, the greater palatine nerve block is less than nasopalatine nerve block because the tissues surrounding the greater palatine foramen are better able to accommodate the volume of solution deposited. Can be used to anesthetize the palatal soft tissue of the teeth posterior to the maxillary canine and corresponding alveolus/hard palate

Technique: Area of insertion is approx 1cm medial from 1st/2nd maxillary molar on the hard palate. Palpate with the needle to find greater palatine foramen Depth is usually less than 10mm. Utilize

pressure with elevator/mirror handle to desensitize region at the time of injection. Inject 0.3-0.5 ml of local anesthetic.

Nasopalatine nerve block. A nasopalatine nerve goes out in the front area of the hard palate through the incisival channel. The incisival foramen is located on the middle line of the palate between central incisors, in 7-8 MM from an gingival edge. Anteriad from the infraorbital foramen the mucosa of the hard palate forms a incisival papilla which serves as a mark for incisival anaesthesia. There are two way of nasopalative anaesthesia - intraoral and extraoral (intranasal).

Intraoral way. With a widely opened mouth a needle is inserted in the area of incisivall papilla. Moving a the needle toward a bone, release 0,3-0,5 ml solution of anesthetic which blocks a nerve in a channel. A good anesthetizing effect can be achieved by advancing the needle into the channel on the depth 0,5-0,75 cm. Introduction of the needle can be difficult in case of jaw deformations. Anaesthesia of the mucosa in the area of anterior teeth occurs in 5 minutes.

Extraoral way. In some cases, in the presence of the pathological process in the frontal area of alveolar process (periostitis, osteomyelitis, tumor, et cetera), there is a necessity for an extraoral way. It is achieved by the bilateral injection of anesthetic near the basis of the nose.

Complication. Deep introduction of the needle into the incisival foramen (more than 1 cm) threatens the occurence nosebleed.

• Algorithms for the formation of professional skills.

1. To collect anamnesis and to examine the patient with pathology of maxillofacial area.
2. Learn how to identify and justify indications and contraindications to local anesthesia.
3. Be able to choose the necessary instruments for anesthesia.
4. Be able choose a local anesthetic and determine the dose.
5. Be able to locate the target point of anesthesia using of anatomical landmarks.
6. To practice the technique of conducting of incisor anesthesia via intraoral and intranasal methods on the phantom.
7. To practice the technique of conducting of palatal anesthesia on the phantom.

• Practical tasks (typical, atypical, unpredictable situations).

Individual tasks:

Task #1.

Patient 43, came to the dental surgeon complaining of pain in 15 tooth. During x-ray examination revealed the remainder of the endodontic instrument in the root. In the area of the apex of the root there is destruction of bone tissue with a diameter of 5mm with clear contours. On the palate in projection of the root apex was formed subperiosteally abscess. Which method of anesthesia to opening the abscess it is advisable to apply in this case?

- A. Infiltration anesthesia.
- B. Application anesthesia
- C. Palatal conductive anesthesia
- D. Tuberal conductive
- E. Incisor conductive anesthesia

Task #2.

Pain sensitivity of which nerve is blocked after incisor anesthesia?

- A. Incisor
- B. Greater palatal
- C. Naso-palatal
- D. Small palatal
- E. Infraorbital
- F. Auriculo-temporal

- Tasks for independent work and work in small groups (interactive teaching methods).

Patient V., 42 years old, came to the surgical office of the dental polyclinic complaining of constant aching pain in the area of chewing teeth of the upper jaw on the left. Therapeutic endodontic treatment of the 26 tooth does not bring a positive result due to the obstruction of the canals. Objectively: the crown of the 26 tooth is destroyed by a carious process by one fourth of the volume of the crown. Tooth percussion is slightly painful. On the radiograph: a rarefaction of a rounded bone without clear contours in the region of the apexes of the buccal roots of the 26 tooth with a diameter of about 0.5 cm, resembling “flame tongues”. What kind of anesthesia and what anesthetic should be performed to remove 26 tooth? Justify your choice, describe and demonstrate your anesthesia technique.

Final stage (30 min.)

Summing up of the lesson

Materials of methodological support of the final stage of the lesson:

- Brain storm. Students demonstrate an exhaustive description of the unusual clinical situation and offer to offer the most rational diagnostic methods. After recording all the proposed diagnostic methods during the discussion, students choose the most rational.
- Tasks for self-employment. To work on phantoms the technique of examination and palpation of maxillofacial area, oral cavity under conditions of phantom class.
- Evaluation.

Conduct standardized final control using individual test tasks and questions (20 min.), Work check (10 min.). Evaluate the student's current activities during the classroom, taking into account standardized final control, analyze the student's progress, announce the evaluation of each student's activity, and display it in the student attendance and student log book. An adult group at the same time makes assessments in the record of the record of success and attendance of classes by students, the teacher certifies them with his signature.

Brief informing the students about the topic of the next lesson and the methodical measures for preparing for it.

Basic knowledge level:

1. Anatomy of the maxilla.
2. Topographic and anatomical features of innervation and blood supply of the mandible.
3. Pharmacological solutions used for local anesthesia in the maxillofacial area.

List of questions to be studied by the student:

1. Classification of conduction anesthesia on the upper jaw.
2. Infraorbital anesthesia: the place of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of administered anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
3. Tuberal anesthesia: the place of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of administered anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
4. Incisor anesthesia: the place of the injection of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of administered anesthetic. Clinical effect of anesthesia. Zone of anesthesia.
5. Palatal anesthesia: the place of the injection of the needle, the direction and depth of needle insertion, the target point of anesthesia, the amount of anesthetic administered. Clinical effect of anesthesia. Zone of anesthesia.
6. External methods of conducting anesthesia on the upper jaw. Indications to hold.
7. Anesthesia of the upper dental plexus (plexual anesthesia).
8. Local complications of anesthesia on the upper jaw, causes of their occurrence. Clinical manifestations.
9. Treatment of the patient in the case of complications.

The list of practical skills to be learned by the student:

1. Be able choose a local anesthetic and determine the dose.
2. Be able to locate the target point of anesthesia using of anatomical landmarks.
3. To practice the technique of conducting of incisor anesthesia via intraoral and intranasal methods on the phantom.
4. To practice the technique of conducting of palatal anesthesia on the phantom.

Situational tasks and questions on the topic of the lesson:

1. Specify of which parts the patient's clinical examination include.
 - A. Complaints of the patient and history of life.
 - B. Examination of the oral cavity and additional examination methods.
 - C. Examination of the general condition of the patient and radiography of the teeth.
 - D. Extera- and intraoral examination.
 - E. Subjective and objective examination.
2. A patient of 24 years applied for the removal of 25 teeth. What method of analgesia should be used?
 - A. Unilateral tuberal and palatal anesthesia.
 - B. Unilateral infraorbital and incisor anesthesia.
 - C. Unilateral tuberal, infraorbital, and palatal anesthesia.
 - D. Unilateral central anesthesia.
 - E. Unilateral infraorbital and palatal anesthesia.
3. A 50-year-old man came to the dental surgery clinic complaining of constant severe aching pain in the upper jaw area on the right. From the anamnesis it is known that 16 teeth were repeatedly but unsuccessfully treated by a dentist for exacerbation of chronic periodontitis. What kind of anesthesia should be used when removing a 16 tooth?
 - A. Tuberal, incisor and palatal.
 - B. Tuberal and incisor.
 - C. Torusal.
 - D. Incisor and palatal.
 - E. Tuberal and palatal.
4. In case of exacerbation of chronic periodontitis extraction of 22 tooth was indicatted to the patients. Infraorbital and incisor anesthesia were chosen. What nerves are blocked after the specified anesthesia?
 - A. Greater palatal nerve, middle upper alveolar branches.
 - B. Nose and palatine nerve, anterior superior alveolar branches.
 - C. Middle upper alveolar branches, n. nasopalatinus.
 - D. Posterior upper alveolar branches, n. incisivus.
 - E. Anterior upper alveolar branches, n. incisivus.

Literature:

Basic:

1. Oral and Maxillofacial Surgery: Textbook, Part 1, 2 / V.O. Malanchuk. – Vinnytsia: Nova Knyha Publishers, 2011. – 453p.
2. Principles of Dental Local Anaesthesia and Teeth Removal / Ya. E. Vares, R. Z. Ogonovsky, Ch. R. Pohranychna – LNMU, 2007. – 63p.
3. Atlas of Human Anatomy / F. Netter – 2nd ed. – New Jersey: ICON Learning Systems. – 592 p.

Additional:

1. Contemporary Oral and Maxillofacial Surgery / L. J. Peterson, E. Ellis, J. R. Hupp, M.R. Tucker – 3rd ed. – St. Louis: Mosby – Year Book, Inc. – 1998. – 1477 p.

Control methods.

Control measures are a necessary element of feedback in the learning process. They determine the correspondence of the level of knowledge acquired by students with the requirements of the normative documents on higher education.

Control methods and assessment system are developed in accordance with the requirements of "Criteria, rules and procedures for evaluating the results of students' educational activities at the Danylo Halytsky LNMU, approved by the Academic Council of LNMU of 02/21/2018, protocol No. 1.

Control measures in the study of "Surgical dentistry" include current control and final control, which is called a semester test.

Before studying a new course, students have to take 'entrance control' test in order to determine the level of preparation of students to the discipline (based on the fundamentals of previous studies). Entrance control is carried out on the first lesson and is based on the assignments corresponding to the program of relevant discipline studied before. The results of the entrance control are analyzed at the department (chair) meetings and also involve the representatives of methodology committee as well as the teachers of the relevant discipline. According to the results of the entrance control test, students may be provided with individual assistance or with some measures of adjusting the educational process.

Current control is carried out on every practical lesson according to the specific goals of each topic. It is based on the comprehensive evaluation of the student's activity, which takes into account the entrance control test, the quality of practical work, the level of theoretical training, the level of performance in individual assignments according to the thematic plan and the results of the final control.

In the course of assessing the educational activity of students, the preference is given to standardized methods of control: test tasks, situational tasks, control questions, oral questioning, structured written work, structured control of practical skills in conditions that are close to real ones (algorithm -based).

Final control, which is a semester credit, is a form of summarizing control, which assesses the level of student solely on the basis of the results of certain types of work in practical classes. It is conducted in accordance with the curriculum in terms set by the schedule of the educational process and in the amount of educational material determined by the program of academic discipline.

Assessment procedure for the discipline of "Surgical Dentistry", presented by the two content modules, is rating-based and is made up of the sum of evaluation points of the current educational activity, which can be gained for theoretical knowledge and practical skills in accordance with the lists determined by the discipline program.

Current control is carried out during the training sessions and aims at checking students' acquisition of the material, the level of theoretical and practical training. Current control can be presented in the form of testing, solving situational problems, solving clinical situational problem, demonstration of practical skills or abilities, answers to standardized theoretical questions. Forms of assessment of the current educational activity are standardized and correspond to the standards of answers.

Assessment of current educational activity. Evaluation of current student's progress made on each practical lessons on the 4- point scale and recorded in the register of academic success.

Knowledge of students are evaluated both theoretical and practical training by the following criteria:

"Perfect" – the student perfectly mastered theoretical material, shows the deep and comprehensive knowledge of the relevant subject or discipline, the basic provision of the basic textbook and recommended literature, have the logical thinking and make the answer, freely use the acquired theoretical knowledge in the analysis of practical material, expresses his attitude to various problems, demonstrates the high level of practical skills;

"Good" – the student learned theoretical material good, has the main aspects of the basic textbook and recommended literature, the knowledge set reasonable; has the practical skills, expressed own views of the problem, but assume certain inaccuracies in the logic of the theoretical contents presentation or by the analysis of the practical contents;

"Satisfactory" – the student basically mastered the theoretical knowledge of the subject or discipline, oriented in the basic textbook and recommended literature, but unconvincingly answer, confuses the notions, additional questions arouse the student uncertainty or absence of stable knowledge, answering the practical questions reveals inaccuracies in knowledge, can not estimate the facts and events, link them to the future activities;

"Unsatisfactory" - the student has not mastered the subject (discipline) course material, does not know the scientific facts, definitions, hardly versed in the basic textbook and recommended literature, the scientific thinking is absent, practical skills are not formed.

Evaluation of self-made student work

Material for independent work of students, which is provided simultaneously with the practical classes and estimated during the current control of the theme on the appropriate practical classes. Self-made themes are evaluated and controlled during the final control.

The final control - semester credit is performed to assess learning outcomes on a national scale and ECTS scale.

The students, who attended all the stipulated discipline curriculum classes and scored for current progress score not less than the minimum are allowed to the final control. For students, who missed classes, with the dean permission is permitted to fulfill academic debt to the fixed period within the term.

The semester credit is the form of final control, which is consist in the evaluation assess of the educational material mastering exclusively on the basis of the certain types of work realization at the practical classes.

The semester test performed at the end before the examinations. Credits accept teachers, who conducted practical classes in the group or hold lectures in the discipline.

A student is considered to be admitted to semester control if all kinds of work provided the curriculum and the work program have been made.

The results of students work evaluation during the semester should be documented (included in the academic journal, credit - examination sheet, student Gradebook). Performed by students during the semester control tests, individual tasks are kept at the department during the year.

In the educational process of University, the following grading scales are used: multimark (200 -point) scale, the traditional 4- point scale and ECST rating scale. The results are converted from one scale to another according to the following rules.

In evaluating the mastering of each theme for current educational student activity the score by the 4- point scale (traditional) are set. This takes into account all types of work, provided the curriculum. The student must obtain an assessment of each theme. The assessment's forms of current educational activity should include control of theoretical and practical training. Marks of traditional assessment scale are converted into the points.

The maximum number of points, that a student can collect for current educational activity at the subjects study is 200 points.

The minimum number of points that a student must collect for current educational activity for enrollment courses is 120 points.

Calculating the number of points is based on student evaluations received by traditional scale while learning subjects during the semester, by calculating the arithmetic mean rounded to two decimal places. The result value is converted into points by multi- scale as follows:

$$x = \frac{CA \times 200}{5}$$

For convenience, a table converting 200 -point scale:

Table 1

Conversion of the average score for current activity in multimark scale for disciplines ending as a credit (differentiated credit)

4- points scale	200- points scale	4- points scale	200- points scale	4- points scale	200- points scale	4- points scale	200- points scale
5	200	4.45	178	3.92	157	3.37	135
4.97	199	4.42	177	3.89	156	3.35	134
4.95	198	4.4	176	3.87	155	3.32	133
4.92	197	4.37	175	3.84	154	3.3	132
4.9	196	4.35	174	3.82	153	3.27	131
4.87	195	4.32	173	3.79	152	3.25	130
4.85	194	4.3	172	3.77	151	3.22	129
4.82	193	4.27	171	3.74	150	3.2	128
4.8	192	4.24	170	3.72	149	3.17	127
4.77	191	4.22	169	3.7	148	3.15	126
4.75	190	4.19	168	3.67	147	3.12	125
4.72	189	4.17	167	3.65	146	3.1	124
4.7	188	4.14	166	3.62	145	3.07	123
4.67	187	4.12	165	3.57	143	3.02	121
4.65	186	4.09	164	3.55	142	3	120
4.62	185	4.07	163	3.52	141	Less than 3	Not enough
4.6	184	4.04	162	3.5	140		
4.57	183	4.02	161	3.47	139		
4.52	181	3.99	160	3.45	138		
4.5	180	3.97	159	3.42	137		
4.47	179	3.94	158	3.4	136		

Evaluation of the disciplines (subjects) which the final control is the **test** is based solely on the results of current training and expressed by two points national scale: "Passed" or "Not passed". To enroll the student must receive for current training activities at least 60 % of the maximum amount of points in the discipline (120 points). Scores are ranked on a scale of discipline ECTS (Table 3) for the above scheme.

Grade F (unsatisfactory with required repeated course) put at the test or differential credit to students who attended all subject (discipline) classes, but did not reach the minimum number of points for current educational activity. These students are not obtained credit and are not allowed to pass examinations.

Scores of discipline for students, who successfully completed the program, converted into traditional 4- point scale by absolute criteria, which are listed in the table below:

Table 2

Discipline scores	4 – point scale
From 170 to 200 points	5
From 140 to 169 points	4
From 139 points to the minimal points number, which the student must score	3
Less then the minimal points number, which the student must score	2

Evaluation of ECTS to the traditional scale is not converted because the scale of ECTS and 4-point scale are independent.

Objectivity evaluation of educational activities of students tested statistically (correlation coefficient between ECTS assessment and evaluation on of national scale).

Scores of students enrolled in one specialty, given the number of points gained in the discipline ranked on a scale ECTS as follows:

Table 3

Evaluation of ECTS	Statistical index
A	The best 10 % students
B	The next 25 % students
C	The next 30 % students
D	The next 25 % students
E	The last 10 % students

Ranking of assigning ratings of "A", "B", "C", "D", "E" held for the students of the course, who are studying for one specialty and successfully completed the study subjects. Students, who received estimates FX, F («2») are not made to the list of students who ranked. Students with an estimate after repassing FX get automatically mark "E".