

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

Methodical Guide
for Elective course “Plastic and reconstructive surgery of maxillofacial area”
in Surgical Dentistry
for the 5-th year Students of the Dentistry Faculty

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The main task of the Departments of Surgical Dentistry and Maxillofacial Surgery educational establishments of the III - IV levels of accreditation in the process of training the future doctors – dentists their mastering the bases of theory and practice in all divisions of surgical dentistry and maxillofacial surgery. Organization of the academic work for the 5-th year students of Dentistry Faculty is conducted with due regards for the credit-module system in accordance with the requirements of the Bologna process. The basic knowledge level of students who study at the Department should also include the profound knowledge of anatomy, histology, physiology, pathological anatomy, microbiology, pharmacology, general surgery, propedeutics of internal diseases. They must have special training at the departments of general-medical and general-clinical profile as well as propedeutics of surgical dentistry.

Considerable attention given to providing the students with educational-and-methodical Reference. For this purpose the professorial-and-teaching staff of the Department of Surgical Dentistry and Maxillofacial surgery of Danylo Halytsky LMNU has compiled the methodical guide for students in their preparation to elective course in surgical dentistry “Plastic and reconstructive surgery of maxillofacial area”. It will help the students to focus their attention on the features of plastic and reconstructive surgery of the maxillofacial area, to learn about the modern substitutive and suture materials, hardware devices and treatment methods. We hope that methodical guide will contribute to the improvement of quality of preparation of students for the final module control and formation of fundamental knowledge of future doctors – dentists.

PRACTICAL CLASSES SCHEDULE

No	Topics	Hours
1	History and stages of development of plastic and reconstructive surgery. Modern aims and tasks of discipline.	2
2	Features of examination of patients before plastic and reconstructive interventions. The choice of method of anesthesia. Peculiarities of anesthetic management in older patients and children.	2
3	Anatomical, topographic and physiological features of the maxillofacial area. Innervation and vascularity of tissues.	2
4	Planning of plastic and reconstructive surgery operations. Types of X-ray methods of examination, advantages and disadvantages of their application.	2
5	Classification of deformations of maxillofacial area. Indications and contraindications for plastic and reconstructive interventions. Types of plastic operations. Psychology of patients with deformations of the maxillofacial area. General principles and techniques of different types of tissues transplantation.	2
6	Phases of wound process. Types of wounds and types of their healing. Surgical techniques on the soft tissues of the oral and maxillofacial area. Their species and peculiarities.	2
7	Modern techniques of suturing of soft tissues. Classification, the advantages and disadvantages of modern suture materials. Mechanisms of scars formation. Classification of pathological scars. Surgical and conservative methods of pathological scars treatment.	2
8	Preparation of the oral cavity for prosthetics. Surgical interventions on soft tissues of oral cavity. Vestibuloplasty. Frenuloplasty. Healing of soft tissues of oral cavity.	2
9	Surgical interventions on alveolar processes of jaws. Exostosis and tori removal. Sinus-lift procedure. Operation techniques. Complications prevention.	2
10	Methods and devices for distraction osteogenesis, their advantages and disadvantages. Indications and contraindications to the distraction.	2
11	Substitution of defects of the bones of maxillofacial area. Methods. Types of materials. Modern osteoplastic materials. Physiology and reparative regeneration of bone tissues of the jaws. Age-related features.	2
12	Aims, tasks and methods of dental implantation. Surgical aspects. Types of implants. Indications and contraindications for dental implantation. Age-related features.	2
13	Surgical treatment of bite anomalies and deformations. Orthognatic surgery. Methods of mandibular and maxillary osteotomy. Indications and contraindications to treatment.	2
14	Modern methods of substituting of total or subtotal defects of tissues of maxillofacial area. Planning of operations. Modern surgical techniques. Types of fixation devices. Indications and contraindications to treatment.	2
15	Peculiarities of postoperative treatment of patients after plastic or	2

	reconstructive surgery. Medicament treatment. Complications of plastic or reconstructive surgical operations. Their prevention and treatment.	
Total		30

Topic No1. History and stages of development of plastic and reconstructive surgery. Modern aims and tasks of discipline.

Actuality of the topic: Since ancient times it was known of the importance of good health and normal appearance for successful and happy life. Most often it can be assessed on the human's face, because it is the most visible and significant parts of the human body. The human's face became a visit card of a person. Thanks to the face a person has the possibility of communication with other people, can express emotions, to be socially active. So with the appearance of the first anomalies or post-traumatic defects of the face, ancient physicians got the job to treat these defects. The invention of firearms and its development, industrialization, social upheavals led to a significant increase in the number and complexity of the defects of the face, which testifies to the continued relevance of this discipline in our time.

Aim: To study the history of plastic and reconstructive surgery of the maxillofacial area, from its beginning to the present day. To identify the main stages of its development. To understand the importance and features of each stage, according to the level of technical progress and socio-political features of a particular age.

Basic knowledge level:

1. Features of development of medicine of the ancient world (Egypt, Greece, Rome, India)
2. The development of medicine during the middle Ages and Renaissance
3. Features of development of medicine in the 19th-20th centuries

Test questions:

1. What was the first plastic surgery and where it was made?
2. The method of plasty of the nose described in Ayurveda?
3. What is the "Italian" method of the plastic of the nose?
4. What's new in plastic surgery suggested by professor Shimanovsky?
5. What contribution to the development of plastic surgery was made by scientists Filatov and Limberg?
6. What is a distraction device of Ilizarov?

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1.	To teach the stages of development of plastic and reconstructive surgery from ancient times to our days.	a)to study the features of development of medicine of the ancient world b)to study the development of medicine during the middle Ages and Renaissance c)to study the features of development of medicine in the 19th-20th centuries	Pay attention to the social features of the era and the level of technical development.

Reference.

- 1)Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 1 - . P 6-11; Part 2. - P. 105-107, 190-191, 241-243.

Topic No2. Features of examination of patients before plastic and reconstructive interventions. The choice of method of anesthesia. Peculiarities of anesthetic management in older patients and children.

Actuality of the topic: Plastic and reconstructive operations provides a certain amount of the operative trauma of human organism that may adversely affect its general condition. For evaluation of the condition of the patient's organism preoperative examination is needed. When a patient has a chronic disease, a surgeon have to consult with a specialist in the relevant branch. The features of the choice of the method of anesthesia during surgical intervention depends on the age of the patient, his / her health and difficulty and duration of the operation. In elderly and senile age persons often common are diseases of cardiovascular and nervous systems, the involvement of relevant specialists is needed on the stage of choosing a method of anesthesia. Children's organism is characterized specificity of the reaction, which requires the participation of children's anesthesiologists and pediatricians.

Aim: To study diagnostic methods that are most often used in plastic and reconstructive surgery. To study the peculiarities of the most common chronic diseases and the necessary studies for their diagnosis. To study how different is the examination of the patient before the intervention under general or local anesthesia. To study the types of anesthesia used in plastic and reconstructive surgery. To study selection criteria of using local or general anesthesia during extraoral and intraoral operations. To study the peculiarities of anesthesiology management the elder patients and children.

Basic knowledge level:

1. Features of taking of anamnesis in the elderly persons and in children
2. Types of blood and urine tests
3. X-Ray methods of examination
4. The most common chronic diseases of cardiovascular, digestive, nervous and respiratory systems, their symptoms and treatment
5. Types of general anesthesia
6. Types and methods of local anesthesia

Test questions:

1. Features of preoperative taking of anamnesis in patients, including the elderly persons and children.
2. List of necessary diagnostic procedures for surgery under local anesthesia.
3. List of necessary diagnostic procedures for surgery under general anesthesia.
4. Peculiarities of diagnosis, differential diagnosis and treatment of the most common chronic diseases of cardiovascular, digestive, nervous and respiratory systems when planning plastic and reconstructive interventions.
5. Anesthetic management of patients with drug allergy.
6. Indications and contraindications for application, infiltration and conductive anesthesia.
7. Premedication, its methods and drugs.
8. Indications and contraindications to the use intravenous anesthesia, endotracheal anesthesia.
9. Features of general and local anesthesia in the elderly persons.
10. Features of general and local anesthesia in children.

**Instructional materials for acquiring the professional abilities and practical skills.
A reference map (algorithm) for working off professional abilities and skills.**

No	Task	Instructions as to the completing the task	Notes
1.	To acquire methodology of preoperative taking of anamnesis in patients, including the elderly persons and children.	a)to find out the story of the life of the patient in details; b)to find out features of profession; c)to find out current and past diseases; d)to perform a visual inspection of medical records of the patient.	Pay attention to the age of the patient to predict the possible presence of certain chronic diseases
2	To teach features of preoperative diagnostic procedures	a)to find out what the diagnostic procedures are needed before operations under local anesthesia; b)to find out what the diagnostic procedures are needed before operations under local anesthesia; c)to find out what diagnostic procedures are needed by anesthesiologist to evaluate the condition of the patient's organism and the to choose the method of anesthesia	Pay attention to use electrocardiogram and X-Ray of the lungs when general anesthesia was chosen
3	To teach peculiarities of diagnosis, differential diagnosis and treatment of the most common chronic diseases of cardiovascular, digestive, nervous and respiratory systems	In detail find out the story of the life of the patient, especially features of profession. Find out current and past diseases, perform a visual inspection of medical records of the patient. To make careful examination of the present status of the patient.	Pay attention: send a patient to consultation of a specialist when a patient has a chronic disease
4	Be able to to plan diagnostic procedures and anesthetic management in persons with drug allergy	a)to find out the story of diseases of the patients; b)to find out the type of Allergy; c)to make a review of the medical records of the patients; d)to determine the list of drugs, which will be used during treatment and surgery; e)to send a patient to allergologist consultation and make tests of the body's sensitivity to these drugs.	Pay attention: safe conduction of operations of these group of patients under local anesthesia is required the presence of an anesthesiologist
5	To teach the peculiarities of anesthetic management under general or local anesthesia	a) indications and contraindications for application, infiltration and conductive anesthesia with age-related features; b) premedication, its methods and drugs; c) indications and contraindications to the use intravenous anesthesia, endotracheal anesthesia, neuroleptanalgesia with age-related features.	Pay attention: the use of general anesthesia in cases of small children is the method of choice

Reference.

- 1) Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 1. - P. 31-99.
- 2) Oral and Maxillofacial Surgery .- Edited by Prof. L. J. Pererson, 1998. - P. 2-21.

Topic No3. Anatomical, topographic and physiological features of the maxillofacial area. Innervation and vascularity of tissues.

Actuality of the topic: For the successful planning and conducting of plastic and reconstructive operations on soft and hard tissues is necessary to consider topographic anatomic features of a certain part of the human body. Maxillofacial area is special due to the presence of 2 natural cavities - oral and nasal; bone sinuses, maxillary, ethmoidal, frontal and sphenoidal which are connected to each other. Surgeon should also consider the proximity of the maxillofacial area to the skull, throat, esophagus. Through it pass a number of major vessels and nerves that provide good blood supply and innervation, in particular the external carotid, mandibular and maxillary artery; and trigeminal and facial nerves. In maxillofacial area also applies temporomandibular joint. It is the only joint in the human body that can move only along with the opposite side.

Aim: To study anatomical-topographical features of the structure of the maxillofacial area, its blood supply and innervation. To learn the peculiarities of structure and functions of the temporomandibular joint.

Basic knowledge level:

1. Anatomy of the lower jaw and masticatory muscles
2. Anatomy of the maxilla and midface
3. Anatomy of fronto-temporal area
4. The blood supply and innervation tissue in maxillofacial area
5. Physiology of maxillo-facial area
6. Functional anatomy of the temporomandibular joint

Test questions:

1. The buttresses of the facial skeleton
2. Peculiarities of topography facial and trigeminal nerve
3. Topography of cellular tissue areas of maxillo-facial area
4. Topography target points for the conductive and central anaesthesia
5. Features of the lymphatic system of the maxillofacial area
6. Features of the mucosa of various parts of the oral cavity

**Instructional materials for acquiring the professional abilities and practical skills.
A reference map (algorithm) for working off professional abilities and skills.**

No	Task	Instructions as to the completing the task	Notes
1.	To acquire the topographic and anatomical features of the maxillofacial area.	a)to study the features of the bones of facial skeleton b)to acquaint the with route and branching of large blood vessels of maxillofacial area c)to study the features of the lymphatic system of maxillofacial area d)to acquaint with the route, branching and innervation zones of trigeminal and facial nerves	Pay attention to the location and combination of the sinuses.
2	To study functional anatomy of temporomandibular joint	a)to study the features of the bone's surfaces of the joint b)to acquaint with the location of the muscles, ligaments and articular disc c) to study the motion of the joint and to consider the position of the condyle and the articular disk in a different positions of the mandible	Pay attention that it is the only joint in the human body that can move only along with the opposite side.

Reference.

- 1)Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 1. - P. 15-31.
- 2)Atlas of Craniomaxillofacial Osteosynthesis. – Edited by Prof. M. Champy, 2009. - P. 1-9.

Topic No4. Planning of plastic and reconstructive surgery operations. Types of X-ray methods of examination, advantages and disadvantages of their application.

Actuality of the topic: Planning plastic and reconstructive operations штсдиву 2 stages: the analysis of initial clinical situation, taking into account anatomic peculiarities and condition of the hard and soft tissues of the site of the planned intervention. The next stage is to model the expected patient and doctor of postoperative outcome. With this aim can be applied various x-ray examination methods: traditional radiography, orthopantomography, teleroentgenography, spiral and cbct that allows specialist to create three-dimensional images of the facial skeleton of the patient and its reconstruction. Suregon can also make use of drawings or gipsy or plaster models. A large number of methods and a variety of abnormalities and deformities require careful analysis of the advantages and disadvantages of each radiation research method before the appointment of such an examination of the patient.

Aim: To be able to perform palpation of soft tissues and bone contours of the maxillofacial area, to know peculiarities of its implementation. To acquaint with the types of abnormal bites. To know the list of the main x-ray methods of examination of maxillofacial area, evaluate their advantages and disadvantages. To study the peculiarities of the assessment of gipsy models of the jaws. To be able to make a treatment plan based on the data of the examination of the patient and X-ray methods.

Basic knowledge level:

1. To know the concept of symmetry and proportion of human face and bones of facial skeleton
2. To be able to perform palpation of the soft and hard tissues of the maxillofacial area.
3. Types of x-ray examination of the facial bones, their characteristics
4. Radiation load on the organism of the patient, his assessment and its maximal amount
5. Be able to interpret data of traditional radiography, orthopantomography and spiral computer tomography

Test questions:

1. Principles of valuation of gipsy models of jaw
2. Methodology of interpretation of teleroentgenogram
3. Types of abnormal bites, their characteristics
4. Principle of cbct method and its difference from traditional spiral tomography
5. The principle of making and interpreting stereolithographical models.

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1.	To be able to perform palpation of the soft and hard tissues of the maxillofacial area.	a)to study the features of the bones of facial skeleton b)to acquaint the with route and branching of large blood vessels of maxillofacial area c)to study the features of the skin and mucosa of maxillofacial area d)to acquaint the with route, branching and innervation zones of trigeminal and facial nerves	Pay attention to check the symmetry and proportion of human face and bones of facial skeleton
2	To study the most often used X-ray methods, evaluate their advantages and disadvantages. To determine their diagnostic value	a)to acquaint with the most often used X-ray methods b)to study their features c) to understand the significance of determination of the radial load on the organism of the patients d) to elaborate the methods of forming a three-dimensional image and its reconstruction and sternentor models	Pay attention to the radiation load on the organism of the patient, his assessment and its maximal ammount

Reference.

- 1)Treatment planning in Dentistry . - Edited by Prof. S. J. Stefanac, 2001. - P. 11-20.

Topic No5. Classification of deformations of maxillofacial area. Indications and contraindications for plastic and reconstructive interventions. Types of plastic operations. Psychology of patients with deformations of the maxillofacial area. General principles and techniques of different types of tissues transplantation.

Actuality of the topic: Classification of defects and deformations can help to separate them into groups, what is a great help during the treatment planning. There are many different classifications, but they all have common features - grouping of defects and deformations on localization, etiology, etc. There is also the separation reconstructive and plastic operations on types. Plastic and reconstructive surgery, as well as other surgical intervention has its indications and contraindications, which is mandatory for treatment planning. Understanding the psychology of the people with deformations of maxillofacial area helps to establish better contact between doctor and patient, which contributes to a more detailed study of peculiarities of every individual. Despite the variety of different kinds of plastic operations, they are based on classical principles and techniques that are always actual for a long time. Planning and plastic operations are impossible without these basic principles. Neglect of these rules leads to the failure of the treatment.

Aim: To learn classification of defects and deformations and the separation of plastic operations on types. To be able to classify surgical operation or defect or deformity. Know indications and contraindications for plastic and reconstructive operations, to be able to divide them into groups. To understand the features of the psychology of people with deformations of maxillofacial area.

Basic knowledge level:

1. The definition of "defect"
2. The definition of "deformation"
3. Types of defects and deformations of maxillofacial area, and their characteristics
4. Features of development of the psyche in people of different age groups
5. Classical stages of plastic operation
6. Biological aspects of transplantation of organs and tissues. The implants and tissue transplants, their features

Test questions:

1. The main characteristics of functional disorders that are caused by defects and deformations of maxillofacial area
2. Types of indications for plastic and reconstructive operations, and their characteristics.
3. Types of plastic operations
4. The influence of defects and deformations on the human psyche
5. Variants of people's sense of aesthetics, their characteristics
6. The basic principles of performing plastic operations, their characteristics
7. The basic techniques of local plastic operations on the skin.
8. Transplantation immunity, its characteristics.
9. Classification of transplants

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1.	To study types of defects and deformations of maxillofacial area	a)to study etiology of the defects b)to acquaint with the typical localization of the defects c) to acquaint with the main characteristics of functional disorders that are caused by defects and deformations of maxillofacial area	Pay attention: the more severe the defects and deformations which are distributed on several kinds of tissues and anatomical areas, the more they distort important functions

2	To be able to determine the type of patient's sense of aesthetics	a) to acquaint with the main variants of people's sense of aesthetics b) to study their features	Pay attention to the features of development of the psyche in people of different age groups
3	To understand the basic principles of performing plastic operations	a) to study the basic principles of performing plastic operations b) to learn their features	Pay attention that during any reconstructive-restorative operations it is necessary, if it possible, to restore: all lost or deformed tissues by tissues with similar anatomical structure and anatomical function; all physiological functions in the area of operation and external aesthetic appearance of tissues in the intervention zone
4	To study the basic techniques of local plastic operations on the skin	a) to acquaint with the basic techniques of local plastic operations on the skin b) to study their features	Pay attention to the need for high accuracy and careful care of the operating wound during working with soft tissues
5	To elaborate the biological aspects of transplantation of organs and tissues. The implants and tissue transplants, their features	a) to acquaint with the implants and their features b) to acquaint with the tissue transplants, and their features c) mechanisms of rejection of the transplants, their types and features d) influences which may cause general immunosuppression	Pay attention on the role of transplantation immunity

Reference.

1) Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 2. - P. 105-126, 147-150.

Topic No6. Phases of wound process. Types of wounds and types of their healing. Surgical techniques on the soft tissues of the oral and maxillofacial area. Their species and peculiarities.

Actuality of the topic: Each plastic or reconstructive operation predicts the presence of the wound, because without it it's impossible to move the tissues on the surface or create access to tissues lying deeper. In some cases, in the hospital came the patients who have wounds as a result of trauma or other damage. For adequate care and recovery of aesthetics and function of damaged tissues, the surgeon must know the types of wounds and phases of wound process. Because the presence of the wound predict it's surgical treatment and suturing, also surgeon need to be versed in the methods of treatment of the wounds and work with soft tissues depending on the period of limitation of defect or deformation. Careful study of the characteristics of these processes will contribute to the success of treatment of wounds.

Aim: To acquaint with the types of wounds and their features. To study phase of the wound process, types of wound healing. To acquaint with all types of surgical treatment of wounds, depending on the time of limitation of the wound. To know surgical techniques on the soft tissues of the maxillofacial area and their features.

Basic knowledge level:

1. The definition of "wound"
2. Types of wounds, their characteristics
3. Phases of wound process, their characteristics
4. The definition of "surgical treatment of the wound"
5. Types of surgical treatment of the wounds
6. True and false defects facial tissues
7. Variants of wound healing

Test questions:

1. Anatomical and functional features of the skin flaps
2. Dermatotension, myotension, skin expanders
3. Skin plasty with counter triangular flaps (Z-plasty)
4. Defects and deformations of the tissues of the head and neck, nose and lips (types, characteristics)
5. Plasty of congenital nonunion of upper lip and palate
6. Secondary defects and deformations of the palate, upper lip and nose
7. The stalk of Filatov. Description of the method, its peculiarities

**Instructional materials for acquiring the professional abilities and practical skills.
A reference map (algorithm) for working off professional abilities and skills.**

No	Task	Instructions as to the completing the task	Notes
1	To understand the basic principles of surgical treatment of wounds	a)to study types of the wounds b)to acquaint with the phases of wound process c) to learn the main features of surgical treatment of the wounds	Pay attention on the time of limitation of the wound
2.	To study types of skin flaps	a)to acquaint with general features and species of the method b)to acquaint with the dermatotension, myotension, skin expanders c)to learn the main characteristics of Z-plasty d) to acquaint with the features of the defects and deformations of the tissues of the head and neck, nose and lips	Pay attention: to be aware of changes ability of the skin to stretch with age

3	To elaborate method of plasty of congenital nonunion of upper lip and palate	a) to acquaint with the main variants of nonunion of palate and upper lip b)to study main and most frequently used methods of plasty of these defects	Pay attention to the age of a child and localization of the defect
4	To learn the basic principles of the stalk of Filatov	a) to study the basic principles of preparing the stalk b) to acquaint with the main advantages and disadvantages of the method c)to study indications and contraindications of using Filatov's stalk c)to understand the classic schema of the plasty using the stalk of Filatov	Pay attention on features and species of different variations of the basic method

Reference.

- 1) Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 2. – P. 7-13, 130-147.
- 2) Oral and Maxillofacial Surgery .- Edited by Prof. L. J. Pererson, 1998. - P. 44-51, 57-62.

Topic No7. Modern techniques of suturing of soft tissues. Classification, the advantages and disadvantages of modern suture materials. Mechanisms of scars formation. Classification of pathological scars. Surgical and conservative methods of pathological scars treatment.

Actuality of the topic: Any plastic or reconstructive interventions are impossible without creation of a wound. Of course, every wound, created during the surgical intervention should be sutured. Techniques of wound suturing after such operations should ensure adequate fixing of wound edges and high aesthetic outcome of postoperative scar. To achieve these goals, you should also apply modern suture materials with properties that facilitate the work of the surgeon and promote rapid healing of wounds. Specialists should also remember that there is always a risk of formation of pathological scars that disfigure the appearance and function of tissue operated place. Treatment of the majority of pathological scars is conservative, but there are cases where surgical intervention is needed. To know of classification and features of such scars is necessary for the surgeon who performs plastic or reconstructive surgery.

Aim: To acquaint with modern methods of wound suturing. To study the classification, advantages and disadvantages of modern suture materials. To learn the mechanisms of scars formation. To study the classification of pathological scars. To elaborate surgical and conservative methods of treatment of pathological scars.

Basic knowledge level:

1. The basic techniques of wound suturing
2. The main types of suture materials
3. The definition of "scar"
4. Mechanisms of scars formation

Test questions:

1. Techniques of suturing of the wounds after plastic or reconstructive surgery
2. Modern suture materials, their advantages and disadvantages
3. The definition of "pathological scar"
4. Classification of pathological scars
5. Surgical and conservative treatment of pathological scars

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1	To understand the main techniques of suturing of the wounds after plastic or reconstructive surgery	a)to study the basic techniques of wound suturing b)to acquaint with the modern techniques of wound suturing c) to learn their main features, indications and contraindications	Pay attention to the necessity of considering the complexity of the surgical intervention and the depth and size of the wound to choose the correct suturing technique
2.	To study types of suture materials	a)to acquaint with classic suture materials b)to learn the classification of modern suture materials c) to understand the advantages and disadvantages of modern suture materials	Pay attention to use of nonresorbable suturing materials only for suturing of the skin

3	To elaborate mechanisms of scars formation	a)to study main physiological, histological and biomechanical features of scars formation process	Pay attention to the difference between mechanisms of normal and pathological scars formation
4	To learn surgical and conservative treatment methods of pathological scars	a) to study surgical methods of treatment of pathological scars b) to study conservative methods of treatment of pathological scars c)to acquaint with main advantages and disadvantages of these methods c) to learn indications and contraindications of using both methods	Pay attention to a thorough examination of pathological scar before the election of the conservative or surgical treatment to avoid mistakes

Reference.

1)Oral and Maxillofacial Surgery .- Edited by Prof. L. J. Pererson, 1998. - P. 51-56.

Topic No8. Preparation of the oral cavity for prosthetics. Surgical interventions on soft tissues of oral cavity. Vestibuloplasty. Frenuloplasty. Healing of soft tissues of oral cavity.

Actuality of the topic: The presence of defects of dentition suggests the need for prosthetics. To ensure the most favorable conditions for making the impressions of the jaws, according to which the prosthetic construction will be made, and long-term use of the prosthesis needs perform preprosthetic preparation of the oral cavity. The structure of the mucous membrane of the oral cavity is particularly due to the presence of mobile and fixed zones that should be considered during the planning of surgical interventions in the oral cavity. Among the soft tissue structures of the oral cavity correction mostly need the vestibule of the mouth, frenulum lips and tongue. Also during planning such interventions a surgeon should take into account the features of healing of soft issues of the oral cavity.

Aim: Be acquainted with basic tasks and methods of surgical preparation of the oral cavity for prosthetics. To study the features of the operations on the tissues of the oral cavity. To elaborate methods of vestibuloplasty, frenuloplasty. To learn the species of the healing of soft tissues of the oral cavity.

Basic knowledge level:

1. Tasks and methods of surgical preparation of the oral cavity for prosthetics
2. Peculiarities of the structure of the soft tissues of the oral cavity
3. Types of surgical interventions on the soft tissues of the oral cavity

Test questions:

1. Tasks and main methods of vestibuloplasty. Their advantages and disadvantages.
2. Tasks and main methods of frenuloplasty. Their advantages and disadvantages.
3. Plastics of soft tissues of the oral cavity
4. Features of the healing of soft tissues of the oral cavity

**Instructional materials for acquiring the professional abilities and practical skills.
A reference map (algorithm) for working off professional abilities and skills.**

No	Task	Instructions as to the completing the task	Notes
1	To acquaint with the types of surgical interventions on the soft tissues of the oral cavity	a)to study the tasks and methods of surgical preparation of the oral cavity for prosthetics b)to acquaint with the peculiarities of the structure of the soft tissues of the oral cavity c) to learn main features, indications and contraindications of surgical interventions on the soft tissues of the oral cavity	Pay attention to the need for a detailed examination of the oral cavity and wide use of radiological methods of examination
2.	To study vestibuloplasty	a)to acquaint with tasks and main methods of vestibuloplasty b)to learn their advantages and disadvantages	Pay attention to conditions of the soft tissues in the area of intervention
3	To study frenuloplasty	a)to acquaint with tasks and main methods of frenuloplasty b)to learn their advantages and disadvantages	Pay attention to the size and length of the frenulum, and the place of its attachment to immovable mucousa

Reference.

- 1)Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 2. – P. 277-282.

Topic No9. Surgical interventions on alveolar processes of jaws. Exostosis and tori removal. Sinus-lift procedure. Operation techniques. Complications prevention.

Actuality of the topic: Preprosthetic preparation of the oral cavity is not limited of work with the soft tissues. Preparation of the alveolar processes for different prosthetic constructions is necessary to. One of the most frequent complications for prosthetics are tori and exostosis that can be removed only by surgery. Another complicating factor is often a significant atrophy of the alveolar process of the upper jaw, which makes the inserting of dental implants impossible. To resolve this problem, a surgeon must perform the sinus-lift procedure - lifting the bottom of the maxillary sinus. The specialist who plans and performs such interventions must know the anatomy of the alveolar process and the maxillary sinus and to be acquainted with the indications and contraindications for such operations.

Aim: To study the peculiarities of the location of the exostosis and the tori. To study the methods of their removal. To learn the aims and objectives of the the sinus-lifting procedure. To elaborate the basic techniques of sinus-lift, be acquainted with the indications and indications for intervention. To study the possible complications and ways to prevent them.

Basic knowledge level:

1. The definition of "torus"
2. The definition of "exostosis"
3. Anatomic-topographic features of the alveolar processes of the jaws
4. Types of atrophy of the alveolar processes of the jaws
5. Anatomic-topographic features of the maxillary sinuses

Test questions:

1. Methods of tori removal, their characteristics
2. Methods of exostosis removal, their characteristics
3. Tasks and objectives of the sinus-lift procedure
4. The methods of performing sinus-lift procedure, their characteristics, indications and contraindications
5. Possible complications of sinus-lift procedure, ways of their prevention

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1	To acquaint with the methods of the exostosis and the tori removal	a)to study methods of tori removal and their characteristics b) to study methods of exostosis removal and their characteristics c) to learn main features, indications and contraindications of surgical interventions on the alveolar processes on the jaws	Pay attention to the need for a detailed examination of the oral cavity and deep knowledge of the anatomy of the oral cavity
2.	To study tasks, objectives and methods of performing sinus-lift procedure	a)to acquaint with tasks and objectives of sinus-lift procedure b) to learn methods of performing sinus-lift procedure, to understand their characteristics, indications and contraindications c)to acquaint with possible complications of sinus-lift procedure, to elaborate ways of their prevention	Pay attention to the need for a thorough radiation examination of the maxillary sinuses and to take into account the level of atrophy of the alveolar process of the maxilla

Reference.

- 1)EIS – Endoscopically Assisted Internal Sinus Lift.- Edited by P. Schleier, 2008. – P. 6-20.
- 2) Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 1. – P. 349-352.

Topic No10. Methods and devices for distraction osteogenesis, their advantages and disadvantages. Indications and contraindications to the distraction.

Actuality of the topic: During the treatment of malformations of the bones of the jaws there is often a need in a gradual controlled movement of a particular piece of bone at a specified distance. This methodology allows a surgeon to make gradual change of the contours of specific areas of the jaws, or the contours of the whole patient's face. The basis of distraction-compression method are the principles of Russian professor Ilizarov. Method of distraction is widely used in oral and maxillofacial surgery. A variety of devices allow distraction by extraoral and intraoral approaches with changing the contours of the specific parts of the face or the contours of the entire facial skeleton. The surgeon who plans to use a method of distraction in plastic and reconstruction operations should know the features of the method, indications and contraindications for use of the method and the main types of distraction devices.

Aim: To study the distraction principles of professor Ilizarov. To get acquainted with the history of the development of distraction osteogenesis in maxillofacial surgery. To understand the features of structure of the device and principle of operation of the most common distractors. To elaborate the advantages and disadvantages of the method of distraction. To understand the indications and contraindications for the distraction.

Basic knowledge level:

1. The definition of "distraction"
2. Features of the distraction of the bones of the facial skeleton
3. The concept of "speed of distraction", its characteristics and factors on which it depends
4. The principles of distraction of professor Ilizarov

Test questions:

1. The main types of distraction devices, the principle of their operation
2. Methods of distraction of the maxilla, and their characteristics
3. Methods of distraction of the mandible, and their characteristics
4. Characteristic of the craniofacial distraction
5. Indications and contraindications to distraction
6. Advantages and disadvantages of the method
7. Possible complications of distraction, ways of their prevention

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1	To acquaint with the method of the distraction osteogenesis	a)to study the principles of distraction of professor Ilizarov b)to study the features of the distraction of the bones of the facial skeleton c)to learn main features, indications and contraindications of distraction of the maxilla, and their characteristics d) to learn main features, indications and contraindications of distraction of the mandible, and their characteristics	Pay attention to the need for detailed examination of the bones of the facial skeleton and soft tissues of the face and oral cavity to select the correct method of distraction
2.	To acquaint with the devices for the distraction osteogenesis	a)to acquaint with the types of distraction devices b) to learn the features of structure of the device and principle of operation of the most common distractors c)to elaborate the principles of fixation of distractors and the features of the speed of the distraction d)to acquaint with their advantages and disadvantages	Pay attention to the need for detailed selection of the distraction device, taking into account the localization of the site of deformation and the size of the bone

			fragment, which requires distraction
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Reference.

- 1) Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 2. – P. 190-197.
- 2) Atlas of Craniomaxillofacial Osteosynthesis. – Edited by Prof. M. Champy, 2009. - P. 162-169, 177-190.

Topic No11. Substitution of defects of the bones of maxillofacial area. Methods. Types of materials. Modern osteoplastic materials. Physiology and reparative regeneration of bone tissues of the jaws. Age-related features.

Actuality of the topic: One of the current problems of oral and maxillofacial surgery is the substitution of bone defects in maxillofacial area. In most cases this applies to the upper and lower jaw after radicular cyst or the small size benign tumour removal. These defects must be substituted to prevent pathological fracture, especially if it's mandible, and to avoid deformation of the alveolar process and create adequate massive of the bone for future dental implant in this area. The surgeon who performs operational intervention of substitution of postoperative defects of the jaws should know features of reparative regeneration of jaw's bones and its changes with age. For the success of such operations is also necessary to know the main methods of substitution of such defects, classification and characteristics of osteoplastic materials, in order to find the optimal ratio for each individual patient.

Aim: To learn the physiology and reparative regeneration of bone tissue of the jaw, to study its age-related features. To study methods of substitution of defects of the jaws. To elaborate the classification and characteristics of modern osteoplastic materials.

Basic knowledge level:

1. The definition of "bone defect jaw"
2. Types of bone defects of the jaws
3. Physiological and reparative regeneration of bone tissue of the jaws
4. Age-related features of reparative regeneration of bone tissue of the jaws

Test questions:

1. Tasks and objectives of substitution of bone defects of the jaws
2. The main methods of substitution of bone defects of the jaws, and their characteristics
3. Classification of osteoplastic materials
4. The most common modern osteoplastic materials, their characteristics

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1	To acquaint with the method of substitution of bone defects of the jaws	a)to study physiological and reparative regeneration of bone tissue of the jaws b)to study the tasks and objectives of substitution of bone defects of the jaws c)to learn the main methods of substitution of bone defects of the jaws, and their characteristics	Pay attention to the necessity of taking into account the patient's age and changes in the flow speed of the reparative processes in the bones in the elderly
2.	To acquaint with the osteoplastic materials for the substitution of bone defects of the jaws	a)to study the classification of osteoplastic materials b) to acquaint with the most common modern osteoplastic materials and elaborate their characteristics	Pay attention: to take in account the separation of osteoplastic materials depending on the volume of bone defects that need to be considered when choosing the material for the replacement of each particular bone defect.

Reference.

- 1) Atlas of Craniomaxillofacial Osteosynthesis. – Edited by Prof. M. Champy, 2009. - P. 12-18, 144-159, 160-161.
- 2) Oral and Maxillofacial Surgery .- Edited by Prof. L. J. Pererson, 1998. - P. 62-69 .

Topic No12. Aims, tasks and methods of dental implantation. Surgical aspects. Types of implants. Indications and contraindications for dental implantation. Age-related features.

Actuality of the topic: There are a lot of patients with significant loss of teeth that cannot be treated by traditional prosthetics. To address such situations the method of dental implantation, which allows a surgeon to create a support for prosthetic construction in the cases of edentulous jaws or significant defects of dental arch. The method is based on the introduction/insertion into the bone of the jaws structures which are called dental implants. The surgeon who performs the implantation must know the basic methods and to be acquainted with the types of implants for the correct choice of surgical technique and type of implant. It is necessary to remember that in some cases implantation requires preprosthetic preparation of the oral cavity in the form of augmentation of bone defects, sinus-lift, etc. A doctor should also be acquainted with the indications and contraindications for dental implantation and features of providing such interventions in patients of elderly age.

Aim: To be acquainted with the aims, tasks, and methods of dental implantation. To study the characteristics of the surgical phase of dental implantation. To learn the classification of implants, to get acquainted with the characteristics of their main types. To elaborate the indications and contraindications to dental implantation. To understand the peculiarities of providing dental implantation in patients of elderly age.

Basic knowledge level:

1. The definition of "dental implantation"
2. The definition of "dental implant"
3. Topographic-anatomical features of the mandible and maxilla
4. The structures of the bone tissue of the jaw bones
5. Types of bone atrophy of the mandible and maxilla
6. Preprosthetic treatment of the oral cavity before dental implantation

Test questions:

1. Aims and tasks of dental implantation
2. Methods of dental implantation
3. Classification of dental implants and characteristics of their main types
4. Indications and contraindications for dental implantation
5. Features of dental implantation in patients of elderly age

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1	To acquaint with the method of dental implantation	a) to study aims and tasks of dental implantation b) to study methods of dental implantation c) to learn types of bone atrophy of the mandible and maxilla d) to learn indications and contraindications of dental implantation	Pay attention to the need for detailed examination of the bones of the facial skeleton and soft tissues of the face and oral cavity to select the correct method of dental implantation
2.	To acquaint with the dental implants	a) to acquaint with the types of dental implants b) to learn the features of structure of the implants	Pay attention to the need for detailed selection of the implant, taking into account the localization of the site of planned dental implantation

Reference.

- 1) Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 2. – P. 212-235.

**Topic No13. Surgical treatment of bite anomalies and deformations. Orthognatic surgery.
Methods of mandibular and maxillary osteotomy. Indications and contraindications to
treatment.**

Actuality of the topic: Today, there are a great number of patients with abnormalities or deformations of the bite. Some of these clinical cases can be treated by orthodontists with the help of various devices, without surgical operations. In other patients, where the defect of occlusion is significant and cannot be eliminated by conservative treatment, requires surgical intervention with shortening or lengthening one or both jaws. These methods are called orthognatic surgery. Variety types of malocclusion requires an individual approach to every patient during planning of surgical intervention, therefore, techniques for surgical correction of the contours and dimensions of the upper and lower jaws are different. The surgeon, who carries out such interventions should know the basic techniques of osteotomy of the upper and lower jaws, must be acquainted with the indications and contraindications of treatment, to prevent failures of treatment and harm to the health of the patient.

Aim: Be acquainted with the classification of malocclusions. To learn aims and tasks of orthognatic surgery. To study methods of osteotomy of the upper and lower jaws. To elaborate the indications and contraindications to orthognatic surgery.

Basic knowledge level:

1. The definition of "orthognathic surgery"
2. Classification of malocclusion
3. Topographic-anatomical features of the upper and lower jaws
4. Features of orthodontic preparation of the patient for orthognathic surgery

Test questions:

1. Aims and tasks of orthognathic surgery
2. Types of fixing devices and their features
3. Methods of osteotomies of the maxilla, their characteristics
4. Methods of osteotomies of the mandible, their characteristics
5. Indications and contraindications for orthognathic operations

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1	To acquaint with the orthognathic surgery	a)to study aims and tasks of orthognathic surgery b)to learn classification of malocclusion c)to elaborate the features of orthodontic preparation of the patient for orthognathic surgery d)to learn indications and contraindications for orthognathic operations	Pay attention to the need for detailed examination, of the bones of the facial skeleton and soft tissues of the face and oral cavity to select the correct method of orthognathic treatment
2.	To acquaint with the methods of osteotomies of the maxilla and the mandible	a)to acquaint with the anatomical features of the structure of the maxilla and mandible b)to learn main methods of osteotomies of the maxilla, their characteristics and features c) to learn main methods of osteotomies of the mandible, their characteristics and features	Pay attention to the need to take in account localization of maxillary sinus and nasal cavity on maxilla and mandibular nerve channel on mandible during planning of orthognathic interventions

Reference.

- 1)Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 2. – P. 147-190.
- 2)Atlas of Craniomaxillofacial Osteosynthesis. – Edited by Prof. M. Champy, 2009. - P. 12-18, 32-34, 109-115, 116-121.

Topic No14. Modern methods of substituting of total or subtotal defects of tissues of maxillofacial area. Planning of operations. Modern surgical techniques. Types of fixation devices. Indications and contraindications to treatment.

Actuality of the topic: One of the actual problems of modern plastic and reconstructive surgery of the maxillofacial area is the replacement of total and subtotal tissue defects after treatment of different types of wounds, removal of benign and malignant tumors etc. For this a surgeon can apply a variety of methods of substitution of total and subtotal defects of the hard and soft tissues. For soft tissue operations are widely used in various kinds of skin flaps and microsurgical techniques. Substitution of bone defects requires the use of grafts, which must be securely fixed at the edges of the bone defect that requires special fixation devices. Also, a specialist must be acquainted with the indications and contraindications for treatment to avoid failures and threats to patient safety.

Aim: To study the types of total and subtotal defects of soft and hard tissues of the maxillofacial area. To learn the peculiarities of the planning of such operations. To get acquainted with modern surgical techniques, especially microsurgery. To study the types of bone grafts fixation devices, their characteristics. To understand the indications and contraindications to the surgery.

Basic knowledge level:

1. The definition of "subtotal defect of the tissues"
2. The definition of "total defect of the tissues"
3. Classification of total and subtotal defects of soft and hard tissues of the maxillofacial area
4. Topographic-anatomical features of the soft and hard tissues of the maxillofacial area
5. Basic methods of suturing of soft tissues
6. The main methods of fixation of bone fragments

Test questions:

1. Methods of substitution of total and subtotal defects of soft tissue defects of the maxillofacial area, and their characteristics
2. Aims, tasks and methods of microsurgery
3. Types of the bone grafts
4. The main methods of substitution of defects of the maxilla, and their characteristics
5. The main methods of substitution of defects of the mandible, and their characteristics
6. Types of fixation devices and their characteristics
7. Indications and contraindications for substitutive operations

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1	To study general principles of substitution of subtotal and total tissue defects of the maxillofacial area	a)to study topographic-anatomical features of the soft and hard tissues of the maxillofacial area b)to learn basic methods of suturing of soft tissues c)to elaborate the main methods of fixation of bone fragments d)to study classification of total and subtotal defects of soft and hard tissues of the maxillofacial area e)to learn indications and contraindications for substitutive operations	Pay attention to the need for a thorough examination of the condition of the patient due to significant volume of the operation and the high level of surgical traumatization of the tissues in the area of operations
2.	To acquaint with the methods of substitution of total and	a)to acquaint with the different skin flaps, methods of the their taking and suturing b)to understand aims, tasks and methods of microsurgery c)to study main methods of substitution of defects	Pay attention to the need to take in account localization of the defect and frequent need of choice 2 surgical

	subtotal defects of soft tissue defects of the maxillofacial area	of the maxilla, their characteristics and features d)to study main methods of substitution of defects of the mandible, their characteristics and features e)to elaborate types of fixation devices and their characteristics	techniques in one intervention: substitution of soft and hard tissues
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Reference.

- 1) Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 2. – P. 241-250.
- 2) Atlas of Craniomaxillofacial Osteosynthesis. – Edited by Prof. M. Champy, 2009. - P. 12-18, 32-34, 170-176, 191-201.

Topic No15. Peculiarities of postoperative treatment of patients after plastic or reconstructive surgery. Medicament treatment. Complications of plastic or reconstructive surgical operations. Their prevention and treatment.

Actuality of the topic: Planning and conducting plastic or reconstructing surgical intervention is only part of the treatment of patients with defects or deformations of the oral and maxillofacial area. Special attention is paid for aseptic treatment of wounds and replacement of aseptic dressings to ensure maximum cleanliness in the area of the wound and the body in general. Such patients require special food, often with the use of the nasogastric tube to prevent spillage of food in the wound. Drug therapy should be directed at improving the general condition of the patient's organism the after surgery, faster healing of wounds and prevention of purulent-inflammatory processes. The most frequent and threatening complications of such interventions are postoperative wound abscess, the development of osteomyelitis, rejection of the graft or fixation devices. According to the variety of types of plastic and reconstruction operations and different devices used during them, the surgeon must plan a proposed list of complications that can threaten the patient after surgery and to prepare scheme of medical treatment to prevent their development. The treatment of such complications is typical because these complications are independent diseases, but a surgeon must consider the complexity of the surgical intervention and postoperative exhaustion of the patient.

Aim: To study the peculiarities of diet of the patients after conducting plastic and reconstructive operations of the maxillofacial area, depending on the type of operation. Be acquainted with the main groups of drugs used in the postoperative period. To learn the most common and dangerous complications, to get acquainted with the peculiarities of their prevention and treatment.

Basic knowledge level:

1. The definition of "antibiotic therapy"
2. The definition of "immunosuppression"
3. The definition of "osteomyelitis"
4. The dietary habits of people with diseases of the maxillofacial area
5. Main groups of antibiotics and their representatives
6. Clinical stages of osteomyelitis
7. Main causes of postoperative wounds abscesses.

Test questions:

1. Dietary habits of patients after plastic or reconstructive operations of MFA in the postoperative period. Nasogastric tube feeding
2. Features of treatment of postoperative wounds abscesses after plastic or reconstructive surgery. Prevention of postoperative wounds abscesses.
3. Features of antibiotic therapy in patients after plastic and reconstructive operations
4. Aims, tasks and methods of immunosuppressive therapy
5. Features of the development and treatment of postoperative osteomyelitis. Prevention of postoperative osteomyelitis

Instructional materials for acquiring the professional abilities and practical skills.

A reference map (algorithm) for working off professional abilities and skills.

No	Task	Instructions as to the completing the task	Notes
1	To study general principles of postoperative care of a patient after plastic or reconstructive operation	a)to study dietary habits of patients after plastic or reconstructive operations of MFA in the postoperative period. b)to learn peculiarities, indications and contraindications of nasogastric tube feeding c)to elaborate the main principles of antibiotic therapy	Pay attention to the need for a thorough examination of the postoperative condition of the patient due to significant volume of the operation and the high level of surgical traumatization of the tissues in the area of operations

		<p>d)to study features of aseptic treatment of wounds and replacement of aseptic dressings</p> <p>e)to learn main causes of postoperative wounds abscesses.</p>	
2.	To acquaint with the methods of treatment and prevention of postoperative wound abscess, postoperative osteomyelitis and graft rejection	<p>a)to acquaint with the features of treatment of postoperative wounds abscesses after plastic or reconstructive surgery of MFA</p> <p>b)to understand ways of prevention of postoperative wounds abscesses</p> <p>c)to study the features of the development and treatment of postoperative osteomyelitis after plastic or reconstructive surgery of MFA</p> <p>d) to understand ways of prevention of postoperative osteomyelitis</p> <p>e)to study aims, tasks and methods of immunosuppressive therapy</p>	Pay attention to take in account the drug interactions between themselves and the possible development of allergic reactions. Also, the immunosuppression significantly reduces the level of resistance to the development of inflammatory complications. It is advisable to make a drainage of large postoperative wounds during the first few days after the surgery

Reference.

- 1)Oral and Maxillofacial Surgery .- Edited by Prof. V. Malanchuk, 2011.- Part 1. – P. 155-171, 172-176.
- 2)Atlas of Craniomaxillofacial Osteosynthesis. – Edited by Prof. M. Champy, 2009. - P. 205-208.