MINISTRY OF HEALTH PROTECTION OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY
FACULTY OF DENTISTRY
DEPARTMENT OF ORTHOPEDIC DENTISTRY

APPROVED
Vice-rector for scientific and pedagogical work
_____ Eduard BURYACHKIVSKY
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METHODOLOGICAL DEVELOPMENT TO PRACTICAL LESSONS FROM EDUCATIONAL DISCIPLINE

Faculty **of dentistry**, course **2**
Educational discipline **Basic technologies of manufacturing dental prostheses**

Approved:
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Chief of the department _____ Pavlo Rozhko

Developers:
Chief of the department, prof., doctor of medicine P.D. Rozhko
Assoc. Doctor of Medicine Balikov.V.V
Assoc. Doctor of Medicine Burdeyny V.S.
Assoc. Doctor of Medicine Rozumenko M.V.
Assoc. Doctor of Medicine Shakhnovsky I.V.
Assoc. Doctor of Medicine Rozumenko V.O.
Ass. A.V. Cherednychenko
Ass. Lysenko V.V.
Ass. Nazarov O.S.

PRACTICAL LESSON No. 1

Topic: Clinical examination of patients with defects of teeth and dental rows. Special examination methods. Drawing up a treatment plan. Preparation of documentation. Oral cavity preparation for prosthetics.

Goal: Familiarize the applicantswith the basic stages of clinical examination of patients. Learn special examination methods. Basic sanitary and hygienic requirements for a dental office. Be able to scale the treatment plan. Know the types of preparation of the oral cavity for prosthetics. Formation of professional literacy and the ability to think logically in students. Formation of the principles of medical ethics and deontology in students.

Basic concepts: clinical examination, dentition defect, tooth defect, special examination methods, treatment plan, oral cavity preparation for prosthetics.

Equipment: Computer, multimedia projector, phantoms.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

2.1. requirements for students' theoretical readiness to perform practical classes (knowledge requirements, list of didactic units);

Know:

- to study the stages of clinical examination of patients;
- to know special examination methods;
- to know the stages of making a treatment plan;
- types of oral cavity preparation for prosthetics

2.2. questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

— Organization and structure of the dental laboratory.
— Organization and structure of the office of a dentist-orthopedic doctor.
— Goals and objectives orthopedic stomatology. Sections of orthopedic stomatology.
— Dental technician's work tools.
— Tools for the work of a dentist-orthopedic doctor.
— Requirements for ventilation, lighting and technical characteristics of the office (department|separation|) of orthopedic dentistry.
— Classification of materials used in orthopedic dentistry.

3. Formation of professional skills, skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

3.1. content of tasks (tasks, clinical situations, etc.);

The term "orthopedics" was proposed by the French surgeon Nicolas Henri (1658-1742), who in 1741 published the work "Orthopedics or the art of

preventing|preventing, preventing| and correct deformations of the body in|in, near| children". The term "orthopaedics" consists of two Greek words: orthos—straight and paideuo—to educate, train. The word "dentistry" also comes from two Greek words: stoma - mouth and logos - word, teaching.

Prevention and treatment methods (functional, mechanical, surgical) used in orthopedic dentistry have a lot in common. with|with| methods used in the common|common| orthopedics, which deals with the study, prevention and treatment of persistent deformations of the entire human body. That is why orthopedic stomatology is rightly called a part of all orthopedics and often is organizationally represented in the form of jaw departments|separations| in institutes of orthopedics and traumatology.

As a result|as a result, as a result| development and improvement of orthopedic dentistry took place as follows: "prosthetic technique" orthopedic dentistry has grown into a large|large| medical discipline, which is currently is divided by character | disposition | orthopedic care in five independently organized departments: prosthetics of teeth and dental rows|law, low|, maxillofacial orthopedics, orthodontics, prosthetics technology and materials science.

1.Dental prosthetics deals with the replacement of defects in the dentition with the help of artificial teeth.

2.Maxillofacial orthopedics deals with correction with the help of maxillofacial braces tires, adjusting devices, jaw and facial prostheses, disorders of the jaws and the face that have occurred in most cases as a result|as a result|as a result| injuries of the maxillofacial region.

3.Orthodontics deals with prevention and, with the help of orthodontics devices, treatment of dento-jaw disorders areas that arose in|in, near| children as a result|as a result, as a result| of development, and in|in, near| adults — as a result|as a result, as a result| tooth loss

4.Laboratory and prosthetic equipment — technical production of orthopedic devices (dental, jaw, facial prostheses, jaw splints, various types of orthodontic devices, etc.).

5.Materials science also exists big and important|respectable| department of orthopedic stomatology.

Laboratory production (technical) of orthopedic devices is carried out under the guidance of a doctor dental technician in specially equipped orthopedic laboratories.

The clinical part is work with the patient, to whom an orthopedic device is made, is performed by a doctor dentist-orthopaedist in orthopedic offices (departments|separations|, clinics). It is produced here orthopedic treatment of patients — appointment, initial stages of clinical production, inspection and acquisition orthopedic patients.

The fundamental basis of orthopedic dentistry, like all medicine (thanks to the works of I.P. Pavlov) is the unity of the organism and its connection with|iz| external environment|environment|. The leading task orthopedic dentistry, like all dentistry, is|appears, appears| prevention and treatment of dental diseases systems. Dento-jaw disease systems often|rarely| associated with diseases of the digestive tract! and other diseases of the human body. Orthopedic stomatology is thus connected with all medicine and is|appears, appears| its integral part.

Equipment of a doctor's office orthopedic dentist.

For the organization of a dental office, a spacious room should be allocated for one workplace with|with| good|good| natural lighting of the square|maidan| no less14 m2.

For each additional chair is added|added| square|maidan| no less7 m2. Height of premises|premises| should be no less3.3 m. It is desirable to place the

chairs in one row|bench, row|, near the windows, which provides the best|the best, the best| natural lighting of the patient's oral cavity and access of fresh air to workplaces.

The cabinet must be provided with exhaust ventilation and artificial lighting for sharpening. It is advisable to paint the walls with oil paint|paint| or nitro paint soft tones (pale blue or salad|salad|) and cover the floor with linoleum. There should not be anything superfluous in the office where prosthetics of patients is performed and the furniture should be arranged in the most rational way so that the staff does not carry out unjustified movements; the most favorable conditions must be created for the work of a doctor, nurse, orderly, as well as for the patient's well-being.

3.2. recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);
3.3. requirements for work results, including registration;
— Conduct an examination of a patient with a complete absence of teeth.
— Analyze the results of an examination of a dental patient with complete absence of teeth.
— Make a plan for an additional examination of a patient with a complete absence of teeth.
— Explain the results of clinical and special (additional) research methods.
— Determine the tactics of treatment of a patient with a complete absence of teeth in the clinic of orthopedic dentistry.
— Determine the design of complete removable prostheses.
3.4. control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).
4. Summary:

— The structure of the dental department of the orthopedic profile.
— Sanitary and technical requirements for the orthopedic office.
— Organization of the workplace of an orthopedist-dentist.
— Orthopedic office equipment.
— What are the stages of clinical examination of patients?
— What special examination methods do you know?
— How does the treatment plan work?

— What types of preparation of the oral cavity for prosthetics do you know?

5. List of recommended literature (main, additional, electronic information resources):

Main:

- Orthopedic dentistry: textbook / Rozhko M.M., Nespryadko V.P., I.V. Paliychuk and others; under the editorship M.M. Rozhka, V.P. Nespryadka. - K.: Medical Center "Medicine"; 2020. - 720 p.

- Rozhko M.M., Nespryadko V.P., Mykhaylenko T.M. and others. Dentoprosthetic technique. K.: Book plus; 2016. 604 p.

- Rozhko M.M., Popovych Z.B., Kuroyedova V.D. Dentistry. Textbook. K.: Medical University "Medicine"; 2018. 872 p.

Additional:

- Dentistry: in 2 books. : textbook. Book 2 / M.M. Rozhko, I.I. Kirylenko, O.G. Denisenko and others. ; under the editorship M.M. Horn — 2nd edition. — K.: VSV "Medicine", 2018. — 992 p. ; color kind.

- Material science in dentistry: a study guide / [Korol D.M., Korol M.D., Ojubeiska O.D. etc.]; in general ed. King D.M. – Vinnytsia: New book, 2019. – 400 p.

Electronic information resources:

- State Expert Center of the Ministry of Health of Ukrainehttp://www.dec.gov.ua/index.php/ua/

- National Scientific Medical Library of Ukrainehttp://library.gov.ua/

- National Library of Ukraine named after V.I. Vernadskyihttp://www.nbuv.gov.ua/

PRACTICAL LESSON No. 2

Topic: Modern technologies for manufacturing tabs, pin structures, artificial crowns.

Goal: Familiarize yourself with modern technologies for the production of tabs. To study the clinical and laboratory stages of manufacturing crown tabs. Formation of professional literacy and the ability to think logically in students. Formation of the principles of medical ethics and deontology in students.

Basic concepts: tab, pin designs, artificial crown, tooth preparation.

Equipment: Computer, multimedia projector, phantoms

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

2.1. requirements for students' theoretical readiness to perform practical classes (knowledge requirements, list of didactic units);

- clinical and laboratory stages of making tabs
- clinical and laboratory stages of manufacturing pin structures
- clinical and laboratory stages of manufacturing artificial crowns

2.2. questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

- clinical and laboratory stages of making tabs
- clinical and laboratory stages of manufacturing pin structures
- clinical and laboratory stages of manufacturing artificial crowns

3. Formation of professional skills, skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

3.1. content of tasks (tasks, clinical situations, etc.);

Oral muscles.

Masticatory muscles. The masticatory muscles mean the group of muscles that, by their contraction, contribute to displacement. of the lower jaw in different directions. Since|because| the lower jaw carries out their movements in different directions, then all masticatory muscles, depending on this, can be divided into separate subgroups with different directions bundles and which differ from each other both in the location of their attachment points and in the nature of actions

These subgroups are the following.

- A subgroup of muscles that lift the lower jaw; These include the following muscles: temporal muscle, masticatory muscle proper, internal pterygoid muscle.
- A subgroup of muscles that lower the lower jaw, they are also called mouth openers. These include: jaw-hyoid muscle, chin-hyoid muscle and anterior abdominal bib. muscle
- Only|only| belongs to the third subgroup one external pterygoid muscle, which, by its contraction, moves the lower jaw to the side.

FIRST SUBGROUP

*Temporal muscle*originates from the scales of the temporal bone|bone|, where it is located fan-shaped (Fig. 1.19).

The front bundles of fibers run vertically, and the back ones are almost horizontal and bend strongly. All these bundles converge downward and form a thick tendon that passes under the cheekbones arc and is attached to the coronal process|sprout| lower jaw. The temporal muscle is the most large|large| in the entire group of masticatory muscles. Despite the fact that individual bundles of the temporal muscle have different directions, the same these bundles when the muscle contracts pulls the lower jaw up|up| and a little back.

*It is actually a masticatory muscle*slightly shorter than the temporal, although somewhat thicker and stronger than it (Fig. 1.20). It consists of two layers: the surface layer, the bundles of fibers of which have an oblique direction, and the deep one, which runs more vertically. Superficial|floor, upper| the layer is attached by a tendon in|in, near| the lower edge of the cheekbone arches, and the deep one is attached directly to the inner surface of the cheekbone arcs Moving|lively, moving| the point of attachment of this muscle is the roughness of the outer surface of the corner lower jaw. This is the nature|luck| attachment causes|conditions| and direction its actions during contraction with bilateral|bilateral|contraction the muscle raises|raises| the lower jaw up, and with one-sided|one-sided| it, in addition, shifts|shifts| its outward towards the shortened muscle.

*Internal pterygoid muscle*has the same shape and the same direction as the chewing, with|from| that only|only| the difference is that it is located on the inner surface of the lower jaw (Fig. 1.21(1)). It is smaller than the masticatory muscle. The muscle begins|begins, begins| short, but|and| by a dense tendon in the fossa of the pterygoid process of the main bone|bone| and a small bundle from the body of the upper jaw and is attached to the roughness of the inner surface of the corner lower jaw.

Internal pterygoid muscle, due to similarity with|iz| chewing muscles performs a similar role - raises|raises| her up|up| with bilateral|bilateral| abbreviations; with one-sided|one-sided| during contraction, it shifts the lower jaw inward, to the side, opposite to the one on which this contraction occurred.

With compatible|common| contraction of the three muscles described above, the lower jaw rises up. Closing the mouth occurs due to the work of not one muscle, but the entire first subgroup, acting together, despite the fact that bundles of individual muscles or even whole muscles of this group provide against each other.

SECOND SUBGROUP

The antagonists of the entire first subgroup are|appears, appears| a group of muscles lowering the lower jaw. Both attachment points of this group are|appear, appear| mobile|lively, mobile| and are located on the lower jaw and on the hyoid bone. This feature determines|causes| extreme mobility of the floor of the mouth, consisting mainly of these muscles.

Chin-hypohyoid muscle(Fig. 1.22-2) begins|begins, begins| from the sternum, chin of the lower jaw; the other end is attached to the hyoid bone|bone| and pulls her forward and up|up|. When the hyoid bone is immobile the muscle lowers the lower jaw.

*Maxillohyoid muscle*forms the basis of the floor of the oral cavity — the diaphragm (Fig. 1.22-1). With a narrow edge, it is attached to|in, near| hyoid bone|bone|, and wide — to the inner surface lower jawalong|along| with an internal oblique line from the third molar to the middle of the chin on the right and on the left|left| Anterior fibers they lie horizontally and slightly crooked to the middle line of the mouth.

When the hyoid bone|bone| motionless, the muscle lowers the lower jaw down, with a motionless lower jaw it pulls the hyoid bone|bone| forward and up|up|.

*Double-abdominal muscle*Her back belly begins|begins, begins| from mammary| cuttings of the temporal bone|bone| and, going forward and down, is attached to|in,near| hyoid bone|bone| intermediate tendons. The anterior belly originates from this intermediate tendon, as well as from the hyoid bone|bone| and is attached in the region of the biceps dimples on the lower jaw.

The front abdomen lowers the lower jaw and pulls it back, and when the lower jaw is stationary, it raises|raises| hyoid bone|bone|.

EXTERNAL PENTHOSIS MUSCLE.

The external pterygoid muscle begins|begins, begins| with two heads: the upper (smaller) comes from the subtemporal ridge and the subtemporal surface of the large wing of the main bone, and the lower (large) from the lateral plate pterygoid process|sprout| of this bone, partly from the hump of the upper jaw (Fig. 1.21-2). The first one, attaching to the joint capsule, weaves its fibers into the disk of the interarticular cartilage and conditions|conditions| by its shortening, it slides along the back slope of the articular tubercle, the second is attached to the neck of the articular process|sprout|.

With bilateral|bilateral| contraction of the external pterygoid muscle, the lower jaw is pushed forward, and with unilateral|unilateral| it shifts to the side opposite to the one on which it is the muscle contracted.

Mimic muscles. From|from| mimic musclesperson|face, face| in the process of chewing plays a predominant role only|only| and the group that is located in the lower part of the face and surrounds the oral cavity. In the center of this group is|is| the circular muscle of the mouth, consisting of fibers embedded in the upper and lower lip and contributing to the narrowing and widening of the oral cavity. This muscle can therefore be called mouth

sphincter. The fibers of the rest of the muscles belonging to this group are woven into it, located|inclined| in the thickness of the soft tissues of the cheek and creating the walls of the anterior part of the oral cavity. These muscles cause|cause| rich mimicry of the lips and contribute to the performance of various functions of the oral cavity, such as: sucking, chewing, swallowing, etc. All these muscles are located in three layers.

The following are the most superficial muscles:

1) the triangular muscle that begins|begins, begins| in|in, near| of the outer surface of the lower jaw back from the opening, the chin, and which is woven into the circular muscle y|в, near| corner|corner, corner| mouth; with its abbreviation, it delays|delays, delays| corner|corner, corner| mouth down;

2) cheeky|cheeky| a muscle that begins|begins, begins| on the cheek surface of the cheekbones bones|bones| and weaves into the upper lip in|in, near| corner|corner, corner| mouth; when shortened, it raises|raises| corner|corner, corner| face up (antagonist of the first);

3) the square muscle of the upper lip, which begins|begins, begins| with three heads|heads| (on the outer surface of the zygomatic bone, on the frontal process of the upper jaw and near the inferior orbital rim, which go down and end in the nasolabial fold; the function of this muscle is to raise upper lip.

The middle layer consists of the following muscles:

1) the square muscle of the lower lip, which begins|begins, begins| on the outer surface of the lower jaw and weaves into the lower lip near corner|corner, corner| mouth; during contraction, it pulls the lower lip down;

2) canine muscle, recumbent quadrate muscle| upper lip, it begins|begins, begins| in the dog pit and, interweaving the fibers in the corner|corner, corner| mouth, when shortened, delays|delays, delays| its up.

Deeper than all lie the following|following| muscles:

1) muscle, chin, which begins|begins, begins| on the alveolar edge in|in, near| lower incisors and interweaving in the skin of the chin; having contracted, it pulls out|pulls out| lower lip forward;

2) the cheek muscle, embedded in the thickness of the cheek and creating a lateral|lateral| the front wall of the mouth;

3) incisor muscles, which are attached to the walls of the canine alveoli (on the upper and lower jaws) and are woven into the corners|horns, corners| company from different sides, when they are shortened, they act as antagonists.

All the listed group of mimic muscles are innervated branches of the facial and trigeminal nerves. They all work together in one or another combination. The more muscles are contracted at the same time, the more expressed|expressed, expressed| facial expressions, and the participation of these muscles in the process of chewing is revealed all the more sharply.

Soft sky|palate|.

Muscular layer of the soft palate consists of separate groups of muscles, z|iz| which only|only| the muscles of the tongue end in the very sky|palate|, and others, being|appearing, appearing| in pairs, connect|combine, connect| his with|with| other bodies.

These include: 1) the palato-lingual muscle, (which lies in the front bracket and connects the soft palate with the tongue; 2) the palato-pharyngeal muscle yaz, which goes behind the first and which lies in the back bracket, which connects|connects, connects| soft sky|palate| with|with| pharynx|throat|; between these two muscles there is a lymphoid tissue called the palatine tonsil; 3) two large|large| muscles that stretch and lift soft sky|palate|.

The bundles of these muscles reach the middle line of the soft palate, and sometimes pass through it, intertwining with|with| bundles of the muscles of the same name on the opposite side. When these muscles are shortened, the palate

becomes soft rises to and passes air between the prosthesis and the mucous membrane, which must be taken into account when prosthetics of the edentulous upper jaw.

3.2. recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

3.3. requirements for work results, including registration;

3.4. control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

4. Summary:

- The main types of microprostheses.
- Indications for making tabs.
- Contraindications for making tabs.
- Tab requirements.
- Clinical and laboratory stages of making tabs.
- Materials used for making tabs. The main types of pin structures.
- Indications for pin designs.
- Contraindications for the manufacture of pin structures. Requirements for pin structures.
- Clinical and laboratory stages of manufacturing pin structures.
- Materials used for the manufacture of pin structures. Indications for the manufacture of artificial crowns.
- Requirements for artificial crowns.
- Types of artificial crowns.
- Clinical and laboratory stages of manufacturing stamped crowns.

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5. List of recommended literature (main, additional, electronic information resources):

Main:

- Orthopedic dentistry: textbook / Rozhko M.M., Nespryadko V.P., I.V. Paliychuk and others; under the editorship M.M. Rozhka, V.P. Nespryadka. - K.: Medical Center "Medicine"; 2020. - 720 p.

- Rozhko M.M., Nespryadko V.P., Mykhaylenko T.M. and others. Dentoprosthetic technique. K.: Book plus; 2016. 604 p.

- Rozhko M.M., Popovych Z.B., Kuroyedova V.D. Dentistry. Textbook. K.: Medical University "Medicine"; 2018. 872 p.

Additional:

- Dentistry: in 2 books. : textbook. Book 2 / M.M. Rozhko, I.I. Kirylenko, O.G. Denisenko and others. ; under the editorship M.M. Horn — 2nd edition. — K.: VSV "Medicine", 2018. — 992 p. ; color kind.

- Material science in dentistry: a study guide / [Korol D.M., Korol M.D., Ojubeiska O.D. etc.]; in general ed. King D.M. – Vinnytsia: New book, 2019. – 400 p.

Electronic information resources:

- State Expert Center of the Ministry of Health of Ukraine http://www.dec.gov.ua/index.php/ua/

- National Scientific Medical Library of Ukraine http://library.gov.ua/

- National Library of Ukraine named after V.I. Vernadskyihttp://www.nbuv.gov.ua/

PRACTICAL LESSON No. 3

Topic: Manufacturing technologies of stamped and soldered bridge-like prostheses, solid-cast bridge-like prostheses.

Goal: Familiarize students withmanufacturing technology of stamped and soldered bridge-like prostheses, solid-cast bridge-like prostheses.

Basic concepts:stamped-soldered bridge-like prostheses, solid-cast bridge-like prostheses.

Equipment: Computer, multimedia projector, phantoms.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

2.1. requirements for students' theoretical readiness to perform

- Bridge-like prostheses.
- Constructions.
- Defects of tooth rows according to Betelman and Kennedy.
- Indications for the use of bridge prostheses.
- Types of supporting elements and the intermediate part, methods of their connection.
- Classification.
- Manufacturing technology of stamped and soldered bridge-like prosthesis.

2.2. questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

3. Formation of professional skills, skills (mastery of skills, conducting curation, determining the treatment scheme, conducting

laboratory research, etc.):

3.1 content of tasks (tasks, clinical situations, etc.);

ANATOMY OF TEETH

Teeth are closest in structure to bone tissue, but surpass it in hardness and strength. Three parts are distinguished in the tooth. The part that protrudes above the alveolus is called the crown. The part of the tooth hidden in the alveolus is called the root; the root is usually almost twice as long as the crown. The border between the crown and the root is called the neck.

The substance of the tooth mainly consists of dentin, which has a bone-like structure and is covered with enamel in the crown part and cement in the root part. Inside the tooth is a cavity filled with loose connective tissue rich in blood vessels and nerves. This connective tissue is called the pulp. In the crown part, the volume of this cavity is larger, it is called the pulp chamber. Towards the root, the chamber narrows, taking on the character of a channel. The pulp chamber partially repeats the external shape of the tooth.

The following surfaces are distinguished in the crown of each tooth:

1) External, or vestibular (in Latinvestibule - vestibule - the part of the mouth between the teeth and lips), which participates in the formation of the convex side of the dental arch. In frontal teeth, it is turned towards the lips and is therefore called labial, and in lateral teeth it is turned towards the cheeks and is called buccal.

2) Internal, or oral,turned towards the sky, called palatal on the upper teeth, and lingual on the lower

3) The contact surfaces of the teeth are calledapproximate. Moreover, the side facing forward is called medial, and the side facing back is called distal.

4) The surface involved in chewing or biting off food, called the chewing (occlusal) surface in lateral teeth and the cutting edge in front teeth.

The teeth, which contribute to the grinding of food, have a wide chewing surface with 3-5 humps; these are large molars, which are called chewing teeth, or molars. Small molars that help crush food are equipped with two humps. These teeth are called premolars. The teeth, whose role in the chewing process is reduced only to grasping and biting food, have a chewing surface in the form of a narrow edge, thanks to which they received the name of incisors. The teeth, called fangs, have a narrow cutting edge in the form of a triangle.

During a person's life, teeth erupt twice. The first teeth are called milk teeth. They erupt in the number of 20 and, starting from the age of 6-7, are replaced by permanent ones. There are 32 permanent teeth, 16 in each jaw, 4 incisors, 2 canines, 4 premolars, 6 molars, of which the last two are called wisdom teeth. The teeth are paired and symmetrically located in the jaw

The dental formula is used to indicate the teeth. There are two variants of common dental formulas. The standard formula adopted on the territory of Ukraine is that each tooth is marked with a number that gives its ordinal position in the dental row in relation to the middle line. The right side is separated from the left side by a vertical border, and the upper row of teeth from the lower one by a horizontal border:
8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8

The WHO (World Health Organization) formula is that each tooth is designated by a two-digit number. The second digit, as in the previous case, indicates the serial number of the tooth from the midline. The first digit denotes the angle of the maxillofacial system.
1 – upper right corner of permanent bite.
2 - left upper corner of permanent bite.
3 - left lower corner of permanent bite.
4 – lower right corner of permanent bite.
5 - the upper right corner of the milk bite.
6 - the upper left corner of the milk bite.
7 – lower left corner of milk bite.
8 – lower right corner of milk bite.
So, for example, the formula given above would look like in the WHO version:
18 17 16 15 14 13 12 11 | 21 22 23 24 25 26 27 28
48 47 46 45 44 43 42 41 | 31 32 33 34 35 36 37 38

Individual teeth differ from each other in their structure by a number of features, the knowledge of which is necessary for the technique of correct modeling, selection and anatomical placement of artificial teeth.

The shape of the teeth.
cutters All cutters have chisel-shaped crowns. The labial surface of the upper incisors is slightly convex in the longitudinal direction and slightly more in the transverse direction. The palatal surface is closer to the cutting edge, flat or concave, and towards the neck it thickens and forms a bulge, which is sometimes significantly pronounced and is called the dental tubercle.
The roots of the upper incisors are quite massive and straight. Distinctive features between the upper incisors of the right and left sides are clearly expressed. The medial half of the labial surface is more convex than the distal; the medial corner of the cutting edge is straight, and the distal corner is rounded. The upper lateral incisors differ from the central incisors in smaller sizes.

The lower incisors have the same shape as the upper ones, but are much narrower than them. Accordingly, their roots are smaller and flattened on the sides. The size of the lower lateral incisors is larger than the central incisors. The cutting edges of the lower central incisors are straight, and the lateral distal corners are slightly rounded.

Canines are the most powerful teeth from the entire group of frontal teeth. They are located on the border between the front and side teeth and experience chewing pressure directed in different planes. Their roots are more massive and longer than those of the rest of the front teeth. The labial surface of the fangs is sharply convex, especially closer to the neck, and is divided by a longitudinal ridge extending from the apex of the angle on the cutting edge into two facets: medial and distal. Medial — already distal and more convex in the transverse direction than in the longitudinal direction. The lingual surface is also convex and is divided by a longitudinal ridge into two ridges: medial and distal. The cutting edge of the canine has a triangular shape, and the medial side is shorter than the distal one; the apex of the triangle is called the cutting hump.

Signs of the right or left side of canines are pronounced and are determined by the cutting edge and facets on the labial side.

The lower canines are similar to the upper canines, but smaller than them in size, unlike the upper ones - their lingual surface is flat or slightly concave, as a result of which the tooth tubercle is less pronounced.

The upper premolars are convex, both with a sponge, and from the palatal side in the longitudinal and even more so in the transverse direction. The buccal surface of the first premolar is wider and higher than the lingual one, and therefore its buccal hump protrudes above the level of the crown more than the lingual one. The chewing surface has a quadrangular shape, with the outer side wider than the inner side, and the corners are slightly rounded. On the chewing surface there are two tubercles separated by a transverse groove. In the first premolar, the groove is not located symmetrically, but closer to the palatal hump, which is why the buccal hump is larger on the side of the chewing surface than on the lingual.

The second premolar differs from the first in that its ridges are expressed in the same way.

The lower premolars differ from the upper ones in both shape and size. Their crown in a cross section approaches the outline of a circle. The lingual hump of the first lower premolar is poorly developed, the buccal is rounded and inclined towards the oral cavity. The facets on the cheek side are well defined, and the medial one is narrower than the distal one, which makes it easy to distinguish the teeth of the right and left sides.

The second lower premolars are larger than the first, their humps are equally developed, and the shape of the chewing surface is close to square.

Premolars have one root each, except for the first upper one, which in most cases has two roots, buccal and palatal. Sometimes two roots are found in the second upper premolar.
The upper molars have massive diamond-shaped crowns, and the medial-buccal and distal-palatal angles are sharp, and the opposite angles are obtuse. Their palatal surface is more convex than buccal. On the buccal surface there are two convexities located in the longitudinal direction (corresponding to the two buccal humps on the chewing surface), and one transverse convexity located near the middle of the tooth, somewhat closer to its neck.
There are four ridges on the chewing surface, the largest of which is the medial-palatal ridge. The palatal ridges are rounded, and the buccal ridges are pointed and turned towards the cheek.
The second upper molars are similar in shape to the first, but somewhat smaller. The upper molars have three roots, two buccal and one palatal.
The lower molars have a cuboidal shape. Their buccal surface is convex both longitudinally and transversely and is more convex than the lingual. The largest bulge is located in the lower third of the tooth (near the neck).
There are five humps on the chewing surface of the first lower molar: three buccal and two lingual. The cheek bumps are rounded, and the lingual ones are sharper. The largest hump is medial-buccal.
The second lower molar is slightly smaller than the first and has four cusps of almost equal size.
Lower molars have two roots, medial and distal. Wisdom teeth do not have the correct shape and are sometimes completely absent. The number of their roots is not constant.

ANATOMY OF DENTAL ARCHES.
Dental arches are understood as teeth and alveolar processes separated by bony partitions into separate cells. A dental arch is also called a conventional line drawn through certain surfaces of teeth, alveolar processes, or bone sockets. Based on this, the following are distinguished: basal dental arch (passes through the necks of the teeth), occlusal (passes through the occlusal surfaces and cutting edges of the teeth), vestibular dental arch (through the equators of the teeth on the vestibular surface), oral dental arch (through the equators of the teeth on the oral surface).
Sagittal compensation curve. A number of occlusal surfaces of chewing teeth and their location in the dental row form a curve that has a sagittal direction and was named Spee's occlusal curve, named after the author who first described this phenomenon.
This curve on the lower jaw is concave, and on the upper, on the contrary, it is convex downwards. The uniqueness of this curve is that when the lower jaw is extended to the contact of the incisors with the cutting edges (anterior occlusion), at least two contacts of the chewing teeth (right and

left) are preserved. That is, there will always be a three-point contact. This feature of the curve bears the name of Bonville (three-point contact of Bonville). This curve is part of a conditional circle, the center of which is located in the eye socket. The radius of the circle, and hence the Spee curve, is approximately 60-70 mm. The severity of this curve depends on the degree of overlap of the frontal teeth. The greater the frontal overlap, the more sharply curved the dental arch in the sagittal direction. The area of the Spee curve is the smaller the angle between the tangent to it and the horizontal plane.

Occlusal curve. It begins at the medial-buccal hump of the first premolar and ends at the distal hump of the third molar of the lower jaw. This curve is caused by the deviation of the roots to the lateral sides. Accordingly, the crowns on the upper jaw fan-like diverge, and the roots converge to one point. This phenomenon adds additional lateral stability to the dentition. In addition, each tooth receives additional fixation from its neighbor.

Transversal (transverse) compensation curves. Simultaneously with the presence of the sagittal occlusal curve on each chewing tooth, the arrangement of humps along the curve in the transverse direction is also emphasized. These curves were called transverse compensatory curves, as they ensure the contact of dental ridges during lateral movements of the lower jaw. They are formed as a result of different levels of buccal and palatal ridges, both on the upper and lower jaw. This position is explained by the inclination of the crowns of the chewing teeth on the lower jaw inward, and on the upper one - outward.

Thus, the sagittal curvature of the dental arches informs the chewing teeth of stability in the anteroposterior direction, and the inclination of the crowns of these teeth in the buccal-palatal direction creates conditions for their stability in the lateral direction. It should be noted that the stability of the dental arches is also supported by the buttresses (thickenings) of the jaw bones themselves, on the lower jaw - by internal and external oblique lines, and on the upper - by a thickening that goes to the zygomatic arch.

3.2. recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

- Bridge-like prostheses.
- Constructions.
- Defects of tooth rows according to Betelman and Kennedy.
- Indications for the use of bridge prostheses.
- Types of supporting elements and the intermediate part, methods of their connection.

- Classification.
- Manufacturing technology of stamped and soldered bridge-like prosthesis.

3.3. requirements for work results, including registration;
3.4. control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).
4. Summary:

- Bridge-like prostheses.
- Constructions.
- Defects of tooth rows according to Betelman and Kennedy.
- Indications for the use of bridge prostheses.
- Types of supporting elements and the intermediate part, methods of their connection.
- Classification.
- Manufacturing technology of stamped and soldered bridge-like prosthesis.

5. List of recommended literature (main, additional, electronic information resources):

Main:

- Orthopedic dentistry: textbook / Rozhko M.M., Nespryadko V.P., I.V. Paliychuk and others; under the editorship M.M. Rozhka, V.P. Nespryadka. - K.: Medical Center "Medicine"; 2020. - 720 p.

- Rozhko M.M., Nespryadko V.P., Mykhaylenko T.M. and others. Dentoprosthetic technique. K.: Book plus; 2016. 604 p.

- Rozhko M.M., Popovych Z.B., Kuroyedova V.D. Dentistry. Textbook. K.: Medical University "Medicine"; 2018. 872 p.

Additional:

- Dentistry: in 2 books. : textbook. Book 2 / M.M. Rozhko, I.I. Kirylenko, O.G. Denisenko and others. ; under the editorship M.M. Horn — 2nd edition. — K.: VSV "Medicine", 2018. — 992 p. ; color kind.

- Material science in dentistry: a study guide / [Korol D.M., Korol M.D., Ojubeiska O.D. etc.]; in general ed. King D.M. – Vinnytsia: New book, 2019. – 400 p.

Electronic information resources:

- State Expert Center of the Ministry of Health of Ukraine http://www.dec.gov.ua/index.php/ua/

- National Scientific Medical Library of Ukraine http://library.gov.ua/

- National Library of Ukraine named after V.I. Vernadsky http://www.nbuv.gov.ua

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PRACTICAL LESSON No. 4

Topic: Modern manufacturing technologies of single-cast bridge prostheses with facings. Technologies of casting solid restorations.

Goal: To acquaint students with modern manufacturing technologies of one-piece bridge-like prostheses with facings. Technologies of casting solid restorations.

Basic concepts:one-piece bridge-like prostheses, facing of bridge-like prostheses, casting, one-piece restorations.

Equipment: Computer, multimedia projector, phantoms.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

2.1. requirements for students' theoretical readiness to perform

2.2. questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

- Partial secondary dentition, features of prosthetics with modern metal-ceramic bridge prostheses.

- Clinical and laboratory stages of production of solid bridge prostheses. Innovative main and auxiliary materials for the production of solid prostheses.

- Physico-chemical properties of basic and auxiliary materials. Selection of metal alloys for metal-ceramic restorations.

- Modern technology of cast solid restorations. Innovative ceramic materials.

- Types of connection of the ceramic lining with the metal frame of the prosthesis.

3. Formation of professional abilities and skills (mastery of skills, curation, determination of treatment regimen, laboratory research, etc.):

3.1 content of tasks (tasks, clinical situations, etc.);

ANATOMY OF TEETH

Teeth are closest in structure to bone tissue, but surpass it in hardness and strength. Three parts are distinguished in the tooth. The part that protrudes above the alveolus is called the crown. The part of the tooth hidden in the alveolus is called the root; the root is usually almost twice as long as the crown. The border between the crown and the root is called the neck.

The substance of the tooth mainly consists of dentin, which has a bone-like structure and is covered with enamel in the crown part and cement in the root part. Inside the tooth is a cavity filled with loose connective tissue rich in blood vessels and nerves. This connective tissue is called the pulp. In the crown part, the volume of this cavity is larger, it is called the pulp chamber. Towards the root, the chamber narrows, taking on the

character of a channel. The pulp chamber partially repeats the external shape of the tooth.

The following surfaces are distinguished in the crown of each tooth:

1) External, or vestibular (in Latinvestibule - vestibule - the part of the mouth between the teeth and lips), which participates in the formation of the convex side of the dental arch. In frontal teeth, it is turned towards the lips and is therefore called labial, and in lateral teeth it is turned towards the cheeks and is called buccal.

2) Internal, or oral,turned towards the sky, called palatal on the upper teeth, and lingual on the lower

3) The contact surfaces of the teeth are calledapproximate. Moreover, the side facing forward is called medial, and the side facing back is called distal.

4) The surface involved in chewing or biting off food, called the chewing (occlusal) surface in lateral teeth and the cutting edge in front teeth.

The teeth, which contribute to the grinding of food, have a wide chewing surface with 3-5 humps; these are large molars, which are called chewing teeth, or molars. Small molars that help crush food are equipped with two humps. These teeth are called premolars. The teeth, whose role in the chewing process is reduced only to grasping and biting food, have a chewing surface in the form of a narrow edge, thanks to which they received the name of incisors. The teeth, called fangs, have a narrow cutting edge in the form of a triangle.

During a person's life, teeth erupt twice. The first teeth are called milk teeth. They erupt in the number of 20 and, starting from the age of 6-7, are replaced by permanent ones. There are 32 permanent teeth, 16 in each jaw, 4 incisors, 2 canines, 4 premolars, 6 molars, of which the last two are called wisdom teeth. The teeth are paired and symmetrically located in the jaw

The dental formula is used to indicate the teeth. There are two variants of common dental formulas. The standard formula adopted on the territory of Ukraine is that each tooth is marked with a number that gives its ordinal position in the dental row in relation to the middle line. The right side is separated from the left side by a vertical border, and the upper row of teeth from the lower one by a horizontal border:

8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8

The WHO (World Health Organization) formula is that each tooth is designated by a two-digit number. The second digit, as in the previous case, indicates the serial number of the tooth from the midline. The first digit denotes the angle of the maxillofacial system.

1 – upper right corner of permanent bite.

2 - left upper corner of permanent bite.

3 - left lower corner of permanent bite.
4 – lower right corner of permanent bite.
5 - the upper right corner of the milk bite.
6 - the upper left corner of the milk bite.
7 – lower left corner of milk bite.
8 – lower right corner of milk bite.
So, for example, the formula given above would look like in the WHO version:
18 17 16 15 14 13 12 11 | 21 22 23 24 25 26 27 28
48 47 46 45 44 43 42 41 | 31 32 33 34 35 36 37 38

Individual teeth differ from each other in their structure by a number of features, the knowledge of which is necessary for the technique of correct modeling, selection and anatomical placement of artificial teeth.

The shape of the teeth.
cutters All cutters have chisel-shaped crowns. The labial surface of the upper incisors is slightly convex in the longitudinal direction and slightly more in the transverse direction. The palatal surface is closer to the cutting edge, flat or concave, and towards the neck it thickens and forms a bulge, which is sometimes significantly pronounced and is called the dental tubercle.
The roots of the upper incisors are quite massive and straight. Distinctive features between the upper incisors of the right and left sides are clearly expressed. The medial half of the labial surface is more convex than the distal; the medial corner of the cutting edge is straight, and the distal corner is rounded. The upper lateral incisors differ from the central incisors in smaller sizes.
The lower incisors have the same shape as the upper ones, but are much narrower than them. Accordingly, their roots are smaller and flattened on the sides. The size of the lower lateral incisors is larger than the central incisors. The cutting edges of the lower central incisors are straight, and the lateral distal corners are slightly rounded.
Canines are the most powerful teeth from the entire group of frontal teeth. They are located on the border between the front and side teeth and experience chewing pressure directed in different planes. Their roots are more massive and longer than those of the rest of the front teeth. The labial surface of the fangs is sharply convex, especially closer to the neck, and is divided by a longitudinal ridge extending from the apex of the angle on the cutting edge into two facets: medial and distal. Medial — already distal and more convex in the transverse direction than in the longitudinal direction. The lingual surface is also convex and is divided by a longitudinal ridge into two ridges: medial and distal. The cutting

edge of the canine has a triangular shape, and the medial side is shorter than the distal one; the apex of the triangle is called the cutting hump.
Signs of the right or left side of canines are pronounced and are determined by the cutting edge and facets on the labial side.
The lower canines are similar to the upper canines, but smaller than them in size, unlike the upper ones - their lingual surface is flat or slightly concave, as a result of which the tooth tubercle is less pronounced.
The upper premolars are convex, both with a sponge, and from the palatal side in the longitudinal and even more so in the transverse direction. The buccal surface of the first premolar is wider and higher than the lingual one, and therefore its buccal hump protrudes above the level of the crown more than the lingual one. The chewing surface has a quadrangular shape, with the outer side wider than the inner side, and the corners are slightly rounded. On the chewing surface there are two tubercles separated by a transverse groove. In the first premolar, the groove is not located symmetrically, but closer to the palatal hump, which is why the buccal hump is larger on the side of the chewing surface than on the lingual.
The second premolar differs from the first in that its ridges are expressed in the same way.
The lower premolars differ from the upper ones in both shape and size. Their crown in a cross section approaches the outline of a circle. The lingual hump of the first lower premolar is poorly developed, the buccal is rounded and inclined towards the oral cavity. The facets on the cheek side are well defined, and the medial one is narrower than the distal one, which makes it easy to distinguish the teeth of the right and left sides.
The second lower premolars are larger than the first, their humps are equally developed, and the shape of the chewing surface is close to square.
Premolars have one root each, except for the first upper one, which in most cases has two roots, buccal and palatal. Sometimes two roots are found in the second upper premolar.
The upper molars have massive diamond-shaped crowns, and the medial-buccal and distal-palatal angles are sharp, and the opposite angles are obtuse. Their palatal surface is more convex than buccal. On the buccal surface there are two convexities located in the longitudinal direction (corresponding to the two buccal humps on the chewing surface), and one transverse convexity located near the middle of the tooth, somewhat closer to its neck.
There are four ridges on the chewing surface, the largest of which is the medial-palatal ridge. The palatal ridges are rounded, and the buccal ridges are pointed and turned towards the cheek.
The second upper molars are similar in shape to the first, but somewhat smaller. The upper molars have three roots, two buccal and one palatal.

The lower molars have a cuboidal shape. Their buccal surface is convex both longitudinally and transversely and is more convex than the lingual. The largest bulge is located in the lower third of the tooth (near the neck).
There are five humps on the chewing surface of the first lower molar: three buccal and two lingual. The cheek bumps are rounded, and the lingual ones are sharper. The largest hump is medial-buccal.
The second lower molar is slightly smaller than the first and has four cusps of almost equal size.
Lower molars have two roots, medial and distal. Wisdom teeth do not have the correct shape and are sometimes completely absent. The number of their roots is not constant.

ANATOMY OF DENTAL ARCHES.
Dental arches are understood as teeth and alveolar processes separated by bony partitions into separate cells. A dental arch is also called a conventional line drawn through certain surfaces of teeth, alveolar processes, or bone sockets. Based on this, the following are distinguished: basal dental arch (passes through the necks of the teeth), occlusal (passes through the occlusal surfaces and cutting edges of the teeth), vestibular dental arch (through the equators of the teeth on the vestibular surface), oral dental arch (through the equators of the teeth on the oral surface).
Sagittal compensation curve. A number of occlusal surfaces of chewing teeth and their location in the dental row form a curve that has a sagittal direction and was named Spee's occlusal curve, named after the author who first described this phenomenon.
This curve on the lower jaw is concave, and on the upper, on the contrary, it is convex downwards. The uniqueness of this curve is that when the lower jaw is extended to the contact of the incisors with the cutting edges (anterior occlusion), at least two contacts of the chewing teeth (right and left) are preserved. That is, there will always be a three-point contact. This feature of the curve bears the name of Bonville (three-point contact of Bonville). This curve is part of a conditional circle, the center of which is located in the eye socket. The radius of the circle, and hence the Spee curve, is approximately 60-70 mm. The severity of this curve depends on the degree of overlap of the frontal teeth. The greater the frontal overlap, the more sharply curved the dental arch in the sagittal direction. The area of the Spee curve is the smaller the angle between the tangent to it and the horizontal plane.
Occlusal curve. It begins at the medial-buccal hump of the first premolar and ends at the distal hump of the third molar of the lower jaw. This curve is caused by the deviation of the roots to the lateral sides. Accordingly, the crowns on the upper jaw fan-like diverge, and the roots converge to one point. This phenomenon adds additional lateral stability to the

dentition. In addition, each tooth receives additional fixation from its neighbor.

Transversal (transverse) compensation curves. Simultaneously with the presence of the sagittal occlusal curve on each chewing tooth, the arrangement of humps along the curve in the transverse direction is also emphasized. These curves were called transverse compensatory curves, as they ensure the contact of dental ridges during lateral movements of the lower jaw. They are formed as a result of different levels of buccal and palatal ridges, both on the upper and lower jaw. This position is explained by the inclination of the crowns of the chewing teeth on the lower jaw inward, and on the upper one - outward.

Thus, the sagittal curvature of the dental arches informs the chewing teeth of stability in the anteroposterior direction, and the inclination of the crowns of these teeth in the buccal-palatal direction creates conditions for their stability in the lateral direction. It should be noted that the stability of the dental arches is also supported by the buttresses (thickenings) of the jaw bones themselves, on the lower jaw - by internal and external oblique lines, and on the upper - by a thickening that goes to the zygomatic arch.

3.2. recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

3.3. requirements for work results, including registration;

3.4. control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

4. Summary:

- Partial secondary dentition, features of prosthetics with modern metal-ceramic bridge prostheses.
- Clinical and laboratory stages of production of solid bridge prostheses. Innovative main and auxiliary materials for the production of solid prostheses.
- Physico-chemical properties of basic and auxiliary materials. Selection of metal alloys for metal-ceramic restorations.
- Modern technology of cast solid restorations. Innovative ceramic materials.
- Types of connection of the ceramic lining with the metal frame of the prosthesis.

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5. List of recommended literature (main, additional, electronic information resources):

Main:

- Orthopedic dentistry: textbook / Rozhko M.M., Nespryadko V.P., I.V. Paliychuk and others; under the editorship M.M. Rozhka, V.P. Nespryadka. - K.: Medical Center "Medicine"; 2020. - 720 p.

- Rozhko M.M., Nespryadko V.P., Mykhaylenko T.M. and others. Dentoprosthetic technique. K.: Book plus; 2016. 604 p.

- Rozhko M.M., Popovych Z.B., Kuroyedova V.D. Dentistry. Textbook. K.: Medical University "Medicine"; 2018. 872 p.

Additional:

- Dentistry: in 2 books. : textbook. Book 2 / M.M. Rozhko, I.I. Kirylenko, O.G. Denisenko and others. ; under the editorship M.M. Horn — 2nd edition. — K.: VSV "Medicine", 2018. — 992 p. ; color kind.

- Material science in dentistry: a study guide / [Korol D.M., Korol M.D., Ojubeiska O.D. etc.]; in general ed. King D.M. – Vinnytsia: New book, 2019. – 400 p.

Electronic information resources:

- State Expert Center of the Ministry of Health of Ukraine http://www.dec.gov.ua/index.php/ua/

- National Scientific Medical Library of Ukraine http://library.gov.ua/

- National Library of Ukraine named after V.I. Vernadsky http://www.nbuv.gov.ua/

PRACTICAL LESSON No. 5

Topic: Modern manufacturing technologies of partial removable lamellar prostheses.

Goal: Familiarize yourself with modern technologies for the production of partial removable plate prostheses.

Basic concepts: partial removable prostheses.

Equipment: Computer, multimedia projector, phantoms.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

2.1. requirements for students' theoretical readiness to perform practical classes (knowledge requirements, list of didactic units);

- Removable dentures.
- Constructions. Indications for the use of partial removable lamellar prostheses.
- Design of partial removable prostheses.

- The mechanism of transmission of chewing pressure during the use of removable prostheses.
- Methods of fixing partial removable prostheses.
- Types of bases for removable prostheses.
- Artificial teeth used in the manufacture of removable prostheses.

- Clinical and laboratory stages of manufacturing partial removable prostheses.

2.2. questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

- Removable dentures.
- Constructions. Indications for the use of partial removable lamellar prostheses.
- Design of partial removable prostheses.
- The mechanism of transmission of chewing pressure during the use of removable prostheses.
- Methods of fixing partial removable prostheses.
- Types of bases for removable prostheses.
- Artificial teeth used in the manufacture of removable prostheses.

- Clinical and laboratory stages of manufacturing partial removable prostheses.

3. Formation of professional skills, skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

3.1 content of tasks (tasks, clinical situations, etc.);

Bite is the relationship between the rows of teeth in the state of central occlusion. Central occlusion, as is known, is the closing of the dental rows, in which case the teeth have the maximum number of contact points, and the articular heads of the lower jaw are located with the help of a disc at the base of the slope of the articular tubercles.

Bites are divided into 2 groups according to their function: physiological and pathological. Physiological ones include bites that provide full function regardless of various morphological features, and pathological ones - bites with impaired function.

Physiological bites. Physiological bites include orthognathic, straight, physiological biprognathia and physiological opisthognathia.

Orthognathic bite. Orthognathia is characterized by morphological features, some of which apply to the entire dental arch, the second - only to the front teeth, and the third - only to the chewing teeth.

Symptoms affecting the entire dental arch:

The upper dental arch has an elliptical shape, the lower - a parabola.

On the upper jaw, the dental arch is larger than the cellular one, and the cellular one is larger than the basal one. On the lower jaw, the reverse relationship is observed: the dental arch is smaller than the cellular one, and the latter - from the basal one. Thus, the upper dental arch is larger than the lower one, and the upper cellular arch is smaller than the lower one. This explains the fact that in the presence of teeth in an orthognathic bite, the upper dentition overlaps the lower one, and in the case of loss of all teeth and even with slight atrophy of the cellular processes, the reverse ratio of the cellular arches is observed.

Each of the teeth usually closes with two antagonists, one of which is called the main one, and the second - additional (Altukhov), with the exception of the upper wisdom teeth and the lower central incisors, which have one antagonist each.

Each upper tooth closes with the lower tooth of the same name (main) located behind; each lower tooth closes with the upper tooth of the same name (main) and placed in front.

The teeth of each tooth row, adjacent to each other, touch each other with contact points located on the proximal surfaces.

The height of the dental crowns gradually decreases from the central incisors to the molars (canines are an exception).

The upper teeth are inclined with their crowns outward, and their roots are inward, the lower teeth, on the contrary, are inclined with their crowns toward the tongue, and their roots are outwards

Signs that concern the closing of the front teeth:

The upper front teeth overlap, like scissors, the lower teeth by about one third of the crown (1.5-3 mm).

The middle lines between the upper and lower central incisors are in the same sagittal plane.

There are two types of signs related to the closing of chewing teeth:

a) in case of closure in the buccal-palatal direction;

b) in the case of closing in the front-back direction.

Signs that relate to the closing of the teeth in the buccal-palatal direction:

The buccal cusps of the upper teeth are located outward from the cusps of the lower teeth, and the buccal cusps of the lower teeth are

inward from the cusps of the upper teeth, so the upper palatal cusps fall into the occlusal fissures of the lower teeth, and the lower buccal cusps fall into the cusps of the upper teeth.

The lingual cusps of the lower teeth are located inward from the palatal cusps of the upper teeth.

The external (buccal) and internal tubercles of both the upper and lower chewing teeth are located at different levels on both sides of the jaws. The frontal section of the jaws through the chewing teeth, which goes from right to left or in the opposite direction, is a transverse curve, convex on the upper teeth and concave on the lower ones.

Signs that relate to the closing of the chewing teeth in the anterior-posterior direction:

The anterior buccal tubercle of the first upper molar is located on the buccal side of the first lower molar in the transverse groove between the buccal tubercles, and the posterior buccal tubercle of the upper first molar is located between the distal buccal tubercle of the first lower molar and the medial buccal tubercle of the second lower molar.

The chewing surfaces of the lower teeth, starting from the premolars and ending with the last molar, create sagittal concave curved surfaces. The chewing surfaces of the upper teeth create a sagittal curve, but not concave, but convex, which repeats the shape of the lower concave curve.

This relationship between tooth rows has an explanation:

The upper central incisors are wider than the lower central incisors and articulate with the two lower incisors, so the upper teeth are displaced distally in relation to the teeth of the lower row and each tooth has two antagonists. The upper wisdom tooth is narrower than the lower wisdom tooth, so the distal displacement of the upper teeth in relation to the lower ones of the same name is equalized in the area of the wisdom teeth, and the back surfaces of the upper and lower wisdom teeth are in the same frontal plane. Closing one tooth with two antagonists is very important: even if one antagonist is lost, the second protects the tooth on the opposite jaw from displacement. From this point of view, the front teeth are more precisely located than the lateral ones.

The teeth of the same row, growing next to each other, touch each other with their proximal surfaces. Areas located in the area of contact of teeth are called contact points. And This mutual arrangement of the teeth is of great importance both for their stability and function. First, it protects the teeth from shifts in the anterior-posterior direction, reducing the amplitude of their physiological mobility during the action of the horizontal components of chewing pressure, which is important from the point of view of the stability of the teeth. Secondly, the contact points on the proximal surfaces of the teeth cause the passage of food towards the

gingival papilla and thereby protect it from injury and from food particles getting stuck. After all, if the teeth had no contacts, then the tooth row would be a simple sum and each tooth would act autonomously, that is, independently, isolated from other teeth. Thanks to lateral contacts, not only one tooth connects with another, but also the entire dental row from the number of teeth acting independently turns into a system of closely related elements of the dental arch. Due to the physiological mobility of teeth and contacts, on the one hand, the work of each tooth depends on the work of other elements of the dental-jaw system, and on the other hand, the function of each tooth is reflected in the work of the entire branch.

According to Katz, the fact that the crowns of the lower molars are inclined medially, and the roots - distally, prevents the back movement of the tooth row and its loosening; the teeth placed behind seem to support the teeth placed in front.

Starting from the incisors, the length of the crowns decreases towards the chewing teeth, especially in the lower dentition. This placement of the teeth is a good condition for the functioning of the tooth, its chewing ability depends on the location and the length of the crown: the further the tooth is located from the midline, the higher its functional value should be.

On the upper jaw, the crowns are directed outward, toward the cheek and lip, and the roots are inward. On the lower jaw, the crowns are directed toward the tongue, and the roots are outward. Thanks to this, the upper dental arch is larger than the lower one and the upper tooth row overlaps the lower one. All these anatomical features greatly contribute to the stability of the lower dental arch.

The lower front teeth, like all others, have a tendency to move forward, but this possibility is limited due to the overlapping of the lower teeth by the upper ones.

For the teeth of the upper jaw, the tendency to move forward is somewhat limited by the fact that the upper jaw is immovably connected to the local bones.

6. The crowns of the lower molars are tilted inward, and the upper molars are tilted outward. It

contributes to the entry of the lingual tubercles of the upper molars into the closing slits

lower molars, and the buccal tubercles of the lower molars - in the closing slits of the upper

molars In this way, the teeth are prevented from shifting in the buccal-palatal area

straight Since the upper dental arch is larger than the lower one, it covers the bottom

no, as described, the arc is inscribed, and the front teeth act on the food lump as a cut

ny device similar to scissors.

The scissor-like structure of the dental arches of the orthognathic bite increases the chewing surface and provides a large scope for chewing excursions of the lower jaw.

Finally, the overlapping of the upper dental arch with the lower one prevents the cheeks and tongue from closing when closing the teeth.

7. The lower tooth row is formed, from the point of view of stability, more perfectly than the upper one. The wedge-shaped shape of the crowns, the mediodistal inclination of the molars and the inclination of the chewing teeth towards the tongue contribute to its stability. In addition, according to A. Ya. Kats, the outer plate of the compact substance of the mandibular bone covers the entire dental arch. After all, the stability of the lateral areas of the dental arch is facilitated by the curvature of the cortical plate in the area of the internal and external oblique lines. The upper dentition is formed, from the point of view of stability, less favorably. The crowns of the upper teeth are tilted outwards, so during chewing movements directed at the upper jaw outwards, the tooth row can take on an even more fan-like shape. Four factors protect the upper tooth row from this: 1) the presence of a system of buttresses in the area of canines and chewing teeth; 2) palatine processes that connect the lateral areas in the transverse direction; 3) high elasticity of the end wall of the cellular process in the area of the front teeth; 4) the presence of a third root - palatal, which is present in the upper molars. All these features give the upper dental arch undeniable stability.

Direct bite. Another variant of physiological bite is direct. Direct bite differs from orthognathic in that the cutting edges of the upper teeth do not overlap, but fall directly, like forceps, on the cutting edges of the lower teeth. In the area of the lateral teeth, the relationship between the teeth is the same as in the orthognathic bite. As a result, in the presence of a direct bite, sometimes faster wear of teeth occurs than in the case of an orthognathic one. Under such conditions, the surfaces of the teeth are polished, the latter are resistant to caries, are firmly held in the cells and are affected by periodontitis or periodontitis less often than in other forms of physiological bite.

Physiological opisthognatia and physiological biprognathia are characterized by the same relation of the tooth rows as in orthognathic bite. The difference is only in the direction of cellular processes and parts and frontal teeth. In the case of an orthognathic bite, the front teeth together with the cellular process are directed backwards. In the case of prognathic - ahead. The character of the closure of the dental rows in the state of central occlusion under the condition of these types of bite is the same as in the case of orthognathia, so they are also functionally complete.

Pathological bites. Pathological bites include prognathia, progenia, deep, open, crossbite. Pathological bites are characterized by a violation of both the relationship of the tooth rows, as well as the function of chewing, speech, and the patient's appearance.

Prognathia is characterized by a protruding position of the upper jaw. As a result of the distal shift of the lower jaw or the forward movement of the upper jaw, there is a violation of the closure of both front and side teeth. Under the condition of normal proportions of the jaws, the frontal teeth of the upper jaw overlap the lower ones with the presence of an incisal-cuspid contact. The teeth of the upper jaw are pushed forward in case of prolapse, and there is a gap between them and the lower teeth. Often, the lower teeth touch the mucous membrane, damaging it during closing the jaws. In this case, they talk about a traumatic bite. In the presence of prognathism, the disproportion in the area of the molar teeth leads to the fact that the anterobuccal tubercle of the first upper molar falls on the tubercles of the same name of the lower molar, and sometimes in the closing gap between the premolar and the anterobuccal tubercle of the first lower molar. In the case of pronounced prognathia, the teeth of the upper jaw are very protruding forward, pushing out the upper lip, from which the cutting edges of the teeth are visible. The lower lip, on the contrary, falls under the upper front teeth. All this was generally reflected in the appearance and at the same time disrupts the function of chewing and speech.

Progeny. In the case of a progenic ratio of the dentition, the lower jaw is pushed forward, as a result of which the lower front teeth overlap the upper ones of the same name. If the lower jaw protrudes slightly, contact is maintained between the front teeth. Food is bitten off with the front teeth in the case of similar jaw relationships. In the presence of a significant displacement of the lower jaw forward, a gap forms between the teeth, biting off food with the incisors becomes impossible and is

transferred to the side teeth. Since there is a medial shift of the lower jaw, the anterior buccal tubercle of the upper first molar comes into contact with the posterior buccal tubercle of the lower molar of the same name or falls into the closing gap between the first and second molars. The lower dental arch in the case of progeny is often wider than the upper one, due to which the buccal tubercles of the chewing teeth are placed outward from the upper ones of the same name. The patient's appearance has changed dramatically, his speech and chewing are impaired.

A deep bite is characterized by a significant overlapping of the frontal teeth of the upper jaw with the frontal teeth of the lower jaw in the absence of incisor-bite contact. The cutting edges of the lower teeth can touch the neck of the upper teeth. Sometimes there is no contact and the teeth touch the gums, damaging them. lateral incisors are closed, as in the case of an orthognathic bite.

A deep bite and a deep overlap should be distinguished. In the presence of a deep overlap, the upper frontal teeth overlap the lower ones by more than 1/3 of the height of their crowns, but the incisal-cuspid contact is preserved. In the case of a deep bite, it is usually absent. A deep overlap is an anatomical variant of an orthognathic bite. A deep bite, on the contrary, belongs to anomalies.

Open bite. With this type of bite, there is no closing of the front teeth, and sometimes the premolars, only the molars come into contact. At the same time, there are deep functional disorders. The lack of contact between the front teeth forces the patient to bite off food with premolars or molars. Reduction of the useful chewing surface (occlusion field) also makes it difficult to chew food. The tongue, which increases in size, takes a significant part in grinding food. The patient's language is impaired, as well as his appearance.

Cross bite. A crossbite is understood as such a ratio of tooth rows, in which the buccal tubercles of the lower lateral chewing teeth are located outwards from the upper ones of the same name. The front teeth close correctly. This bite occurs as a result of the narrowing of the upper dental arch and can be unilateral or bilateral.

SAGITAL, TRANSVERSAL OCCLUSION CURVES

The surface that passes through the chewing and cutting edges of the teeth is called the occlusal surface of the closure. F. Spee (1890) first described the sagittal occlusal curve of the lower jaw in the area of the chewing teeth, on the dental arch. According to Spee, it is manifested by

the fact that a conventional line drawn through the chewing surfaces of the lower teeth starts from the distal contact surface of the first premolar and ends at the distal buccal tubercle of the last molar.

The deepest point in this curve is the chewing surface of the lower first molar. The upper dentition in the region of the molars is also a sagittal curve, but not concave, but convex, which repeats the lower concave curve. Practically, it is installed at the level of overlapping of the buccal tubercles of the lower teeth with the upper ones.

The transverse occlusal curve is the surface that passes through the chewing surfaces of the molars on the right and left sides in the transverse direction. Studying the placement of the chewing teeth, it can be determined that the buccal tubercles on both sides of the lower jaw are placed at a higher level compared to the lingual tubercles. Therefore, the transverse line drawn along the chewing surfaces of the molars of the lower jaw, which passes from right to left or in the opposite direction, is a concave transverse curve.

Spee's sagittal occlusal curve.

Wilson's transverse occlusal curve.

3.2. recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and skills, etc.);

3.3. requirements for work results, including registration;

3.4. control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

4. Summary:

- Removable dentures.
- Constructions. Indications for the use of partial removable lamellar prostheses.
- Design of partial removable prostheses.
- The mechanism of transmission of chewing pressure during the use of removable prostheses.
- Methods of fixing partial removable prostheses.
- Types of bases for removable prostheses.
- Artificial teeth used in the manufacture of removable prostheses.

- Clinical and laboratory stages of manufacturing partial removable prostheses.

5. List of recommended literature (main, additional, electronic information resources):

Main:

- Orthopedic dentistry: textbook / Rozhko M.M., Nespryadko V.P., I.V. Paliychuk and others; under the editorship M.M. Rozhka, V.P. Nespryadka. - K.: Medical Center "Medicine"; 2020. - 720 p.

- Rozhko M.M., Nespryadko V.P., Mykhaylenko T.M. and others. Dentoprosthetic technique. K.: Book plus; 2016. 604 p.

- Rozhko M.M., Popovych Z.B., Kuroyedova V.D. Dentistry. Textbook. K.: Medical University "Medicine"; 2018. 872 p.

Additional:

- Dentistry: in 2 books. : textbook. Book 2 / M.M. Rozhko, I.I. Kirylenko, O.G. Denisenko and others. ; under the editorship M.M. Horn — 2nd edition. — K.: VSV "Medicine", 2018. — 992 p. ; color kind.

- Material science in dentistry: a study guide / [Korol D.M., Korol M.D., Ojubeiska O.D. etc.]; in general ed. King D.M. – Vinnytsia: New book, 2019. – 400 p.

Electronic information resources:

- State Expert Center of the Ministry of Health of Ukraine http://www.dec.gov.ua/index.php/ua/

- National Scientific Medical Library of Ukraine http://library.gov.ua/

- National Library of Ukraine named after V.I. Vernadsky http://www.nbuv.gov.ua/

PRACTICAL LESSON No. 6

Topic: Modern technologies for the production of braced prosthesis structures.

Goal: To study modern technologies for the production of braced prosthesis structures.

Basic concepts:brace prostheses.

Equipment: Computer, multimedia projector, phantoms.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

2.1. requirements for students' theoretical readiness to perform

- Bügel prostheses.
- Constructions.
- Indications and contraindications for the manufacture of brace prostheses.
- Requirements for brace prostheses.
- Peculiarities of the design of braced prostheses.
- Clinical and laboratory stages of the production of brace prostheses.

2.2. questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

- Bügel prostheses.
- Constructions.
- Indications and contraindications for the manufacture of brace prostheses.
- Requirements for brace prostheses.
- Peculiarities of the design of braced prostheses.
- Clinical and laboratory stages of the production of brace prostheses.

3. Formation of professional abilities and skills (mastery of skills, curation, determination of treatment regimen, laboratory research, etc.):

3.1 content of tasks (tasks, clinical situations, etc.);

Articulation — all kinds of positions and movements of the lower jaw in relation to the upper jaw, carried out with the help of the masticatory muscles (A. Ya. Katz). The movement of the lower jaw during chewing is of the greatest practical importance.

Occlusion is any locking of the teeth. A special case of articulation (A. Ya. Katz). The number of occlusions is large. Of them, four occlusions are the most important in practical terms: central occlusion, front and two lateral (left and right).

It is clear that occlusion, being a clinical expression of masticatory movements, is divided into separate phases according to the types of masticatory movements. Chewing movements of the lower jaw, as well as its general movements, are divided into sagittal, transverse and vertical. In this regard, occlusal phases or phases of tooth rows should also be divided into sagittal (anterior-posterior), transverse (lateral) and vertical (central). This coincides with the division of the chewing process into three phases:

1) the phase of grasping and cutting food, which is characterized by the sliding of the cutting edges of the lower front teeth along the palatal surface of the upper ones to their edge closure and back; in this phase, sagittal movement and, therefore, sagittal occlusion prevail;

2) the phase of crushing food, which is carried out by the vertical movement of the lower jaw and is characterized by the maximum contact of the teeth of both jaws; occlusion of the dental rows in this phase was called central and is the initial and final moment of all chewing movements of the lower jaw;

3) the phase of grinding food, which is characterized by alternating movements of the lower jaw to the sides. When the lower jaw moves in any direction, on this side, the humps of the chewing teeth of the lower jaw will contact the humps of the same name in the upper jaw (cheek with cheek, palatal with lingual).

The word "articulation" is borrowed from anatomy, where it denotes a joint, articulation, but many authors put different meanings into this word. In domestic dentistry, the definition of this term, given by A.Ya. Katsem, is the most widespread - articulation means all kinds of positions

and movements of the lower jaw in relation to the upper jaw, carried out with the help of the masticatory muscles. V

This definition of articulation includes not only the chewing movement of the lower jaw, but also its movement during conversation, swallowing, etc.: For practical purposes, it is most convenient to define articulation as a chain of alternating occlusion options. This definition is more specific, as it covers only chewing movements of the lower jaw, the study of which is very important for the design of special devices that reproduce them - articulators.

Occlusion is the closure of tooth rows as a whole or individual groups of teeth for a longer or shorter period of time.

Thus, occlusion is considered as a special case of articulation — one of its moments.

There are four main types of occlusion: central, front and side (right and left).

Central occlusion is characterized by the closing of the teeth with the maximum number of contacting points

Signs of central occlusion: — the middle line of the face coincides with the line passing between the central incisors;

- the articular heads are located on the slope of the articular tubercle at its base.

Simultaneous and uniform contraction of the masticatory and temporal muscles on both sides is emphasized.

With anterior occlusion, the lower jaw is pushed forward. This is achieved by bilateral contraction of the lateral pterygoid muscles.

Signs of anterior occlusion:

— the middle line of the face coincides with the middle line passing between the incisors;

— the articular heads in anterior occlusion are shifted forward and are located at the tops of the articular tubercles.

Lateral occlusion occurs when the lower jaw is moved to the right (right occlusion) or to the left (left occlusion).

Signs of lateral occlusion:

— when mixing the lower jaw to the right on the side of mixing, the articular head remains at the base of the articular tubercle, rotating slightly. On the left side, the articular head is located at the top of the articular tubercle;

— right lateral occlusion is accompanied by contraction of the lateral pterygoid muscle of the opposite (left) side and, conversely, left lateral occlusion — contraction of the pterygoid muscle of the right side.

The state of relative rest of the lower jaw.

Outside of chewing and talking, the dental rows are usually open, since the lower jaw is pubescent and there is a gap of 1-6 mm between

the front teeth. When the jaws are hanging, the muscles are slightly stretched, which causes irritation of the proprioceptors.

This causes a tonic contraction of the muscles, which keeps the jaw in the specified position. In the masticatory muscles, different groups of fibers alternately contract at this time, which provides them with peace and at the same time allows them to be ready for a new contraction. Energy expenditure of muscles in a state of relative physiological rest is minimal. The width of the space between the central incisors in the rest position of the lower jaw is individually different. There is evidence that it increases with age. In addition, the position of relative rest of the lower jaw is an appropriate reflex act (intermittent chewing pressure is physiological for the periodontium, while constant chewing pressure would cause its ischemia and the development of dystrophy).

The resting position of the lower jaw is a protective innate reflex. It is the beginning and end of all her movements.

3.2. recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical abilities and skills, etc.);

- Inspection of the placement of teeth in complete removable prostheses in the occluder.

- Review of plaster models of edentulous jaws.

- Inspection of wax compositions of complete removable prostheses in the oral cavity.

3.3. requirements for work results, including registration;

- What should you pay attention to when checking the position of teeth in complete removable prostheses on models in the articulator?

- How should the front and side teeth be positioned in relation to the alveolar process?

- What are the requirements for the image of prosthetic bed tissues on plaster models?

- How is the correct determination of the interalveolar height checked?

- What is characterized by overestimation and underestimation of the interalveolar height at the stage of checking wax compositions of complete removable prostheses? How to eliminate these errors?

- How do the teeth on complete removable prostheses close when checking in the oral cavity, if at the previous stage, instead of the central occlusion, the front or side was fixed?

- How to eliminate errors associated with incorrect fixation of the mesiodistal ratio of the jaws?

- How to check the density of closure of opposing teeth on wax compositions of complete removable prostheses in the oral cavity?

- What aesthetic requirements require attention at the stage of checking wax compositions of complete removable prostheses?

3.4. control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

4. Summary:

- Bügel prostheses.
- Constructions.
- Indications and contraindications for the manufacture of brace prostheses.
- Requirements for brace prostheses.
- Peculiarities of the design of braced prostheses.
- Clinical and laboratory stages of the production of brace prostheses.

5. List of recommended literature (main, additional, electronic information resources):

Main:

- Orthopedic dentistry: textbook / Rozhko M.M., Nespryadko V.P., I.V. Paliychuk and others; under the editorship M.M. Rozhka, V.P. Nespryadka. - K.: Medical Center "Medicine"; 2020. - 720 p.
- Rozhko M.M., Nespryadko V.P., Mykhaylenko T.M. and others. Dentoprosthetic technique. K.: Book plus; 2016. 604 p.
- Rozhko M.M., Popovych Z.B., Kuroyedova V.D. Dentistry. Textbook. K.: Medical University "Medicine"; 2018. 872 p.

Additional:

- Dentistry: in 2 books. : textbook. Book 2 / M.M. Rozhko, I.I. Kirylenko, O.G. Denisenko and others. ; under the editorship M.M. Horn — 2nd edition. — K.: VSV "Medicine", 2018. — 992 p. ; color kind.
- Material science in dentistry: a study guide / [Korol D.M., Korol M.D., Ojubeiska O.D. etc.]; in general ed. King D.M. – Vinnytsia: New book, 2019. – 400 p.

Electronic information resources:

- State Expert Center of the Ministry of Health of Ukraine http://www.dec.gov.ua/index.php/ua/
- National Scientific Medical Library of Ukraine http://library.gov.ua/
- National Library of Ukraine named after V.I. Vernadsky http://www.nbuv.gov.ua/

PRACTICAL LESSON No. 7

Topic: Modern manufacturing technologies of complete removable lamellar prostheses. Test.

Goal: To study modern manufacturing technologies of complete removable lamellar prostheses.

Basic concepts: Complete removable prostheses.

Equipment: Computer, multimedia projector, phantoms.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

2.1. requirements for students' theoretical readiness to perform practical classes (knowledge requirements, list of didactic units);

- Complete removable dentures.
- Classification of edentulous jaws according to Schroeder, Keller and Oxman.
- Lund's classification of the pliable zones of the mucous membrane
- Classification of the condition of the mucous membrane of the oral cavity according to Supli.
- Design of complete removable prostheses. Classifications of toothless jaws.
- Clinical and laboratory stages of manufacturing complete removable prostheses.

2.2. questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

- Complete removable dentures.
- Classification of edentulous jaws according to Schroeder, Keller and Oxman.
- Lund's classification of the pliable zones of the mucous membrane
- Classification of the condition of the mucous membrane of the oral cavity according to Supli.
- Design of complete removable prostheses. Classifications of toothless jaws.
- Clinical and laboratory stages of manufacturing complete removable prostheses.

3. Formation of professional abilities and skills (mastery of skills, curation, determination of treatment regimen, laboratory research, etc.):

3.1. content of tasks (tasks, clinical situations, etc.);

PATIENT EXAMINATION IN ORTHOPEDIC DENTISTRY CLINIC

Increasing the course of pre-clinical training in orthopedic dentistry sets as its goal not only the study of the anatomy and physiology of the organs of the maxillofacial system, but also aimed at a more in-depth mastery of practical skills, and thus at the general improvement of the quality of training of dental students.

Orthopedic treatment of patients is carried out with the aim of final restoration of the maxillofacial system, reproduction of the lost form of individual organs of this system, and their functional relationships.

The maxillofacial system is a set of organs and tissues, anatomically functionally interdependent, performing different but subordinate functions. It includes hard tissues - the maxillofacial skeleton, including the upper and lower jaws, masticatory and facial muscles, salivary glands, the temporomandibular joint - a paired organ - the mobile connection of the lower jaw with the temporal bone of the skull.

In a properly formed maxillofacial system, the structure of each organ is clearly coordinated with its function. In case of damage to the maxillofacial system, for example, when the body is affected by environmental factors: physical, chemical, biological, social, with a genetic defect or under the influence of local factors, a compensatory process first develops, i.e. compensation of the impaired function due to the activity of intact organs. But the compensatory process has a limit, after which a relatively persistent deviation from the norm, which has a biologically negative meaning for the body, develops a disease.

Each disease is characterized by a certain sign or a group of such signs, they are called symptoms. There are subjective and objective symptoms.

Subjective symptoms are symptoms revealed during the interview of the patient, those unusual sensations that the patient began to experience. For example, difficulty in chewing food, pain, itching in the gums, dryness in the mouth, retention of food between the teeth, etc.

Objective symptoms are detected by the doctor in the process of examination: examination, palpation, instrumental and hardware research. To find out the function of the maxillofacial apparatus, it is sometimes necessary to resort to functional methods of research - chewing samples, graphic records of the movements of the lower jaw, studies of muscle biocurrents, etc.

The disease can be manifested by one or several objective symptoms, one of which is characteristic only for this type of disease, and others are also observed in other diseases. Examination of the patient aims to find out the symptoms, etiology and pathogenesis, the course of the disease, his physical and mental state, the function of the maxillofacial apparatus. A thorough and comprehensive clinical examination of the patient will contribute to the correct diagnosis and targeted orthopedic treatment.

Examining the patient, the doctor must clearly present the meaning of physiological norms, possible variants of the structure and functioning of individual organs of the maxillofacial system, topography and functional relationships. At the same time, he must not only reveal the phenomena, but also be able to understand them logically, determine the leading symptoms, based on the data from the study of the patient. To do this, he must clearly present the meaning of all sections of dentistry, the clinical picture of each nosological form of the maxillofacial system.

Examination of the patient is carried out consistently according to a certain plan and includes: anamnesis (survey of the patient), external

examination, examination and examination of oral cavity organs; examination of the temporomandibular joint; head and neck muscle examination, laboratory and instrumental research methods.

SUBJECTIVE RESEARCH METHODS

Taking an anamnesis is the first stage of the patient's examination. The anamnesis consists of the following sections: 1) complaints and subjective condition of the patient; 2) history of this disease; 3) history of the patient's life.

During the first visit to the patient, the patient's story about the unusual sensations (complaints) that he began to experience is carefully listened to. At the same time, it is important to find out the earliest manifestations of the disease, the nature and peculiarities of its course, to find out what the patient himself considers the cause of the appearance of unusual sensations. In some cases, the anamnesis can be very short and there is no need to go into the details of the patient's life history, in other cases, for example, when a patient is treated with complaints of a burning sensation in the mucous membrane of the oral cavity under a prosthesis, the anamnesis and all examinations will be detailed with the use of hardware and laboratory methods with the involvement of doctors of other specialties.

It is necessary to listen carefully and patiently to patients, at the same time concentrating his attention on the main, from his point of view, sensations, correctly clarifying individual points by purposefully asking questions. All this will be able to determine the range of questions required for making a diagnosis, special or additional research methods.

When listening to the patient's complaints, it is worth paying attention to the patient's reaction when presenting the complaints. This will help to form an idea about the type of his nervous activity, which is of great importance in the choice of the design of the prosthesis and the subsequent habituation of using it, more quickly establishing mutual contact between the doctor and the patient.

During the examination, it is important to obtain data about the onset of the disease, the causes of its occurrence, how it progressed before coming to the doctor, whether any treatment was used, and if it was used, then find out the type and amount of treatment.

With some diseases, it is difficult to establish the cause of their occurrence. So, for example, the appearance of pain, burning in the mucous membrane of the oral cavity under the prosthesis can be caused by a poorly made prosthesis, mechanical trauma or an allergic reaction to the base material. The same type of pain is observed in glossalgia, heat exchange disorders of prosthetic bed tissues, diseases of the gastrointestinal tract. Therefore, pain by its nature can be caused by various reasons, and the mechanism of its occurrence is also different.

Sometimes, during questioning, it is possible to establish that the deterioration of the dento-jaw system occurred during the period of some general disease or after its transfer. Then the question arises whether the detected disease is an independent nosological form or is one of the symptoms of other diseases (ulcer disease, gastritis, diabetes, etc.) - Therefore, it is important to assess the general condition of the subject.

History of life. Life anamnesis is a "medical biography" of the patient. It is important for understanding the causes and conditions for the development of a real disease. For example, data on nutrition (artificial feeding, the use of soft pureed food during the period of formation of milk and variable bite) can approximately indicate the cause of anomalies in the development of the maxillofacial system.

Place of birth, peculiarities of natural conditions (deficiency or excess of fluorine in water) may be the cause of some non-carious lesions of the teeth.

Harmful working conditions, such as work related to the production of acids, alkalis, in the coal mining industry can contribute to the development of pathological tooth wear.

It is important to find out the transferred diseases and the presence of zagalsomatic diseases on the day of the examination, because they can also contribute to the development of pathological changes in the maxillofacial system. Knowing the peculiarities of their course will also help the doctor to choose the right tactics for orthopedic treatment. Thus, in the case of a disease of the cardiovascular system (myocardial infarction, angina pectoris, stroke), in order to remove such a factor that injures this system, such as tooth preparation, it is better to recommend prosthetics with removable prostheses. If the patient has bronchial asthma, it is not possible to use odorous materials (Repin, Thiodent, Dentafol) to remove casts. They should also not rebase the prosthesis directly in the oral cavity. Otherwise, it can cause an asthma attack. Thus, based on the anamnesis and subjective data of the patient, the doctor makes a possible conclusion about the nature and form of the disease. This is a working diagnostic hypothesis that will facilitate further focused research to clarify the assumptions that have arisen.

OBJECTIVE RESEARCH METHODS

In order to clarify the assumption about the disease, to better understand the disease, a detailed examination of all organs included in the jaw system is carried out. The data of an objective examination reject or increase the probability of the assumptions about the disease. Objective examination includes: external examination, examination and examination of oral cavity organs, X-ray and laboratory (analysis of blood, strength, saliva, smears and biopsies, myography, rheography, etc.) research methods.

Objective research methods are carried out while continuing to question the patient, because it is important to know subjective feelings. For example, does the patient feel pain during probing, percussion, etc.

External examination of the patient. After the survey, they begin the examination of the person, which is carried out inconspicuously for the patient. Before the formation of the facial and cerebral skull, the person acquires individual features. The type of person is affected by the development of the brain skull, respiratory system, masticatory system or musculoskeletal system. Accordingly, four types of person are distinguished: cerebral, respiratory, digestive and muscular (Fig. 1).

The cerebral type is characterized by a strong development of the brain and, accordingly, the cerebral skull. The high and wide frontal part of the face sharply prevails over the other parts, as a result of which the face acquires a pyramidal shape with a base directed upwards (Fig. 1, a).

The respiratory type is characterized by the predominant development of the middle part of the face, in connection with which the facial parts of the head, neck and trunk acquire a number of characteristic features. The nasal cavity and its appendages are strongly developed, the maxillary sinuses are large, and the cheekbones are slightly protruding. The face has a diamond shape, the nose is strongly developed in length, its back is often convex (Fig. 1, b).

and b in Mr

Fig. 1. Types of personality (according to Bauer).

a - cerebral; b - respiratory; c - digestive; m - muscular.

The digestive type is characterized by the predominant development of the lower part of the face. The upper and lower jaws are excessively developed. The distance between the corners of the lower jaw is large. The branch of the lower jaw is very wide, massive, its coronal process is short and wide, the chewing muscles are highly developed. The mouth is bordered by thick lips. The chin is wide and high. As a result of the strong development of the lower part of the face, with the relative narrowness of the frontal part, the face sometimes acquires a characteristic trapezoidal shape (Fig. 1, c).

Muscular type - the upper and lower parts of the face are approximately equal, the hairline is usually straight, the face is square (Fig. 1, d).

It should also be noted that the person's face is disproportionate: there is an asymmetry in the structure of the left and right halves. This is manifested in the fact that the left half of the skull is larger than the right, and the left half of the face is longer, the bridge of the nose does not coincide with the middle line, the tip of the nose is shifted to the side, the distance between the outer corner of the eye and the corner of the mouth is not the same on both halves of the face, the right zygomatic bone and

the lower half of the upper jaw are shifted to the right, the right canine fossa is deeper and narrower, the teeth of the upper jaw and the lower part of the nasal septum are shifted to the right.

In the clinic of orthopedic dentistry, the division of the face into three parts: the upper, middle and lower thirds (Fig. 2) has become widespread. The upper third of the face is located between the border of the hair on the forehead and the line connecting the eyebrows. The boundaries of the middle part of the face are the line connecting the eyebrows and the base of the septum of the nose. The lower third of the face is the part of the face from the base of the septum of the nose to the lower point of the chin.

The division of the person into three parts is conditional, since the position of the dots changes during life. For example, the border of the hairy part of the head is located differently in different people and moves with age. The height of the lower third of the face is also variable and depends on the type of closure and the preservation of the number of teeth. Only the middle part of the face has relatively stable dots. The lack of permanent anatomical landmarks and a strict functional subdivision of various departments determines the low value of the proposed division of the person for reconstructive orthopedics.

Anatomic formations of the lower third of the face are of greater practical importance (Fig. 3).

Fig. 2. Division of persons into three parts.
a - upper part; b - middle third; c - lower third, Fig. 3. Anatomical formations of the lower third of the face.
1 — nasolabial fold; 2 — upper lip; 3 — filter; 4 — corner of the mouth; 5 — lip closure line; 6 — red lip border; 7 — chin fold.

Thus, the expressiveness of the chin fold suggests the presence of a deep bite, a distal shift of the lower jaw with a decrease in the vertical size of the lower third of the face due to the loss of lateral teeth or their pathological wear. Frequent lowering of the lower third of the face is accompanied by the formation of cavities in the corners of the mouth. At the same time, they get wet and have a hyperemic appearance. Drooping of the lips indicates the absence of the front group of teeth, and if at the same time the expressiveness of the nasolabial folds is still observed, then it can be concluded that the teeth are completely lost.

The establishment of such deviations during the examination indicates a sharp decrease in the lower third of the face between the alveolar height, which are interdependent with the absence of teeth, which are antagonists.

For orthopedic purposes, it is important to distinguish two heights of the lower part of the face: the height of relative rest and the occlusal height.

The height of relative rest is characterized by the fact that the tooth rows are not closed, there is a gap between them from 1 to 8 millimeters, depending on the depth of the incisal overlap, while the muscles of the person are in a state of physiological rest. The occlusal height is characterized by tight closing of the tooth rows in the state of central occlusion, the musculature is in a shortened state. Knowledge of these characteristics is important when designing removable prostheses.

The examination of the person also allows to establish previously transferred diseases or accompanying halsomatic diseases. For example, the presence of freckles in the area of the upper lip indicates surgical interventions for a cleft. Dryness of the skin, the presence of tightening folds of the skin in the area of the upper and lower lip with a decrease in the size of the oral cavity suggests a diagnosis of systemic scleroderma. The presence of blisters indicates the effects of chemical or thermal burns. With a number of endocrine diseases, such as acromegaly, the person has a characteristic shape. The presence of mustaches and beards in women is characteristic of Itsenko-Cushing's disease.

A careful examination of the person, accompanied by a purposeful questioning of the patient, will contribute to the correct formulation of the diagnosis, both primary and secondary.

Oral examination. Examination of the oral cavity is one of the main points, because the detection of local manifestations of the disease will determine the tactics of orthopedic treatment in the future.

The examination is carried out in the following sequence: examination of the oral cavity, assessment of the teeth, assessment of the dentition, the presence of defects in them, ratio of the dentition, assessment of the mucous membrane of the oral cavity, assessment of the jaw bones.

First of all, pay attention to the degree of mouth opening. Restriction of mouth opening is possible when the mouth opening is narrowed as a result of muscle or joint contracture and will interfere with many manipulations during prosthetics (introduction of impression spoons to remove an impression, putting on a prosthesis, preparation of teeth).

Examination of teeth. Dental examination is carried out with a probe, a mirror and tweezers. For convenience, the examination of the teeth begins with the right side of the lower jaw, then the left side with a transition to the upper jaw, continuing the examination from left to right. During the examination, the mirror is held in the left hand, and the probe or tweezers in the right. The mirror makes it possible to examine the tooth from all sides. At the same time, they pay attention to the position of the tooth, its shape, color, state of hard tissues (caries, fluorosis, hypoplasia, etc.), stability of the tooth, the ratio of its extra-alveolar and intra-alveolar parts, its position in relation to the occlusal plane, the presence of fillings, crowns, their condition. The probe determines the integrity of the crown part, sensitivity of the tooth, and the depth of the gingival pocket. At the

same time, the color of the tooth is evaluated (decrease or lack of enamel shine, presence of chalk-like or brown spots, grooves). In depulped teeth, the enamel does not have a characteristic shine, it has a grayish-yellowish tint. Enamel is changed in smokers, in workers involved in the production of acids and alkalis. With a number of diseases, the shape of the teeth also changes.

An important point during the dental examination is the determination of tooth mobility. Physiological and pathological mobility of teeth are distinguished. The first is natural and imperceptible to the eye. Its existence is confirmed by the erasure of contact points and the formation of contact pads. Pathological mobility is characterized by a noticeable shift of the tooth with little effort.

The mobility of the teeth is a sensitive indicator of the state of the periodontium, its supporting apparatus, which is of great importance for making a diagnosis, evaluating the results of treatment or prognosis.

There are four degrees of pathological tooth mobility (according to Entin). In the first degree, there is a shift in the vestibulo-oral direction. With pathological mobility of the second degree, the tooth is displaced both in the vestibulo-oral and mesiodistal directions. With the third degree, the tooth, in addition, shifts in the vertical direction, when pressed, it sinks into the hole, and then returns to its original position. With the fourth degree of pathological mobility, the tooth not only has visible mobility in the three specified directions, but can also rotate.

Pathological mobility is always accompanied by the presence of pathological gum pockets. Their presence and depth are determined by the probe.

Pathological tooth mobility is often accompanied by pronounced atrophy of the alveolar process, as a result of which the extra-alveolar part of the tooth prevails over the intra-alveolar part. This is most characteristic of single standing teeth. An increase in the external lever causes a functional overload of the tooth. The use of such teeth for the purpose of prosthetics requires special preparation, which consists in shortening the crown part of the tooth.

Restored defects of the crown of the tooth with a filling, a crown, are carefully inspected, paying attention to the safety of the filling, compliance of the artificial crown with the proposed requirements (tight fit of the edge of the crown to the neck of the tooth, its integrity, discoloration, etc.).

The results of the dental examination are recorded in the dental formula. At the same time, milk teeth are marked with Roman numerals, permanent ones with Arabic numerals.

When examining teeth and making a clinical diagnosis, the method of percussion (tapping), probing and palpation is widely used.

Tapping is carried out with the handle of tweezers or a dental probe, lightly tapping on different surfaces of the tooth. Percussion of a healthy tooth produces a loud sound and the patient does not respond to it. When there is a change in the pulp, the periodontium, painful sensations of varying intensity occur. Percussion is carried out carefully, and the appearance of pain with a weak blow does not require a further increase in the force of the blow. Teeth with dead pulp, depulped teeth with sealed canals emit a hollow sound. For comparison, percussion is always performed on adjacent teeth. A muffled sound is heard during the expansion of the periodontal gap. Dulling of sound occurs as a result of impaired blood circulation in the periodontium, swelling. At the same time, the swollen tissues seem to absorb the sound. In the case of a pathological process, there is a dulling of the sound at the top of the root when percussion is performed.

Probing is used to determine the depth of the carious cavity, the nature of the softened tissue, as well as to study the state of the periodontium. The term periodontium includes a complex of formations that have a genetic and functional unity: tooth, periodontal tissue, bone tissue and periosteum, gums. The neck of the tooth in the gums has a circular ligament that attaches the gum to the tooth and protects the periodontium from external damage. Violation of the integrity of this formation leads to inflammation, the formation of pathological gingival pockets of different depths. To determine the depth of the pocket, an angle probe is used, the end of which is blunt, and there are millimeter divisions on the surface. The probe is effortlessly inserted into the gingival groove one by one from all sides of the tooth. If the probe sinks 1-2 millimeters, then it is said that there is no pocket or it is called a physiological gingival pocket. When the probe is immersed from the anatomical neck to half the vertical size of the crown of the tooth or more, talk about the degree of atrophy of the alveolar wall.

The presence of a pathological gingival pocket should be differentiated from a false gingival pocket, which is formed during inflammation and significant swelling of marginal periodontal tissues and hypertrophic gingivitis. With appropriate treatment, the mucous gum returns to normal and the pocket disappears.

With a number of diseases, there is a decrease in the volume of the tooth, as a result of which it is at a certain level in relation to the root of the tooth. In this case, we talk about the clinical neck of the tooth.

Palpation is used to determine tooth mobility. Tooth mobility is a symptom of many diseases: periodontitis, periodontitis, acute and chronic trauma resulting from inflammatory processes and swelling of surrounding tissues.

During examination and instrumental examination, the absence of teeth is established. At the same time, through questioning, it is found out whether the tooth has been extracted or whether there is primary adentia.
Assessment of the condition of the dentition. Inspection of dental rows is carried out separately. At the same time, the following are determined: 1) the number of remaining teeth; 2) presence and topography of the defect; 3) replacement of defects with prostheses and their type; 4) nature of contacts with adjacent teeth; 5) shape of dental arches; 6) the level and position of each tooth in relation to the occlusal plane; 7) type of bite.
In a correctly formed maxillofacial system, the tooth rows represent a single entity both morphologically and functionally. The unity of the tooth row is ensured by interdental contacts, the alveolar process and the periodontium.
Interdental contact points in the front teeth are located near the cutting edge, and lateral - near the chewing surface of the proximal sides. Under them are triangular spaces, facing the base of the alveolar process, which are filled with gingival papillae. They are protected in this way from damage by food. In addition, the pressure falling on the teeth is distributed not only on the root of the tooth, but also on the interdental contacts on the adjacent teeth, ensuring the unity of the dentition.
With age, contact points are erased and instead of them, contact pads are formed. Their wear is proof of the physiological mobility of the teeth. At the same time, a mesial displacement of the teeth occurs, as a result of which the tooth row is shortened to 1 cm. At the same time, there is no violation of the continuity of the dental arch.
When examining the dentition, the absence of a tooth (teeth) is established, and the reason for its loss is identified. A tooth may not erupt due to the absence of a rudiment of a permanent tooth, then one speaks of primary or congenital adentia. If the loss of a tooth occurred after eruption, it is said to be secondary or acquired adentity.
There are many options for missing defects
teeth To systematize their proposed classification of dentition defects resulting from tooth loss. The most common in our country and abroad is the classification proposed by Kennedy, which takes into account the position of the defect in the dental arch and its length (Fig. 4). He divides all defects of dental arches into 4 classes.

1st class 2nd class 3rd grade 4th grade
Fig. 4. Classification of defects of tooth rows according to Kennedy

The first class includes dental arches with bilateral end defects that were formed as a result of the loss of chewing teeth.
The second class consists of dental arches with a unilateral end defect.

The third class includes dental arches with an intermediate defect in the lateral part of the back.
In the fourth class, only the front teeth are missing.
If there are several defects of different classes in the dental arch, then the dental arch is assigned to a smaller class one by one. For example, with a dental formula
0004300 | 0004560
there is a defect of the fourth and first class, in this case the dental arches belong to the first class.
At the physiological norm, each tooth has a certain position in relation to the occlusal plane. The occlusal plane is the plane drawn from the cutting edge of the central incisor of the lower jaw to the top of the distal buccal tubercle of the second (third) molar. The teeth are located in an orthognathic bite in relation to the occlusal surface in a certain order: the cutting edges of the incisors, canines and the distal buccal tubercle of the third molar touch the plane, the first and second premolars and molars are located below this plane. The central incisors and canines of the upper jaw are 2/3 mm (to the depth of the incisor overlap) below the occlusal plane. This arrangement of the teeth ensures the curvature of the dental arch in the anterior-posterior and lateral directions.
The appearance of defects in the dentition violates not only the morphological unity of the dentition, but also leads to a complex restructuring of it, first in the area of the defect, and then spreads to the entire dentition. This rearrangement is manifested by the inclination of the teeth to the side of the defect, the vertical movement of the teeth devoid of antagonists, rotation around the axis, and other disturbances that lead to deformation of the occlusal surface.
A distinction is made between primary and secondary tooth movement. Primary movement begins with the eruption of teeth and ends with the formation of dental arches. By secondary movement, it is customary to understand the change in the position of the teeth after their eruption and the formation of tooth rows due to the appearance of defects in the dental arches or as a result of periodontitis, jaw tumor, traumatic occlusion.
Secondary movement of teeth that occurs in different directions is most common.
The following types of secondary displacement are most common.
The first group.
1) Vertical movement of the upper teeth is unilateral or bilateral.
2) Vertical movement of upper and lower teeth, unilateral or bilateral.
3) Mutual vertical movement of upper and lower teeth is unilateral or bilateral.
The second group.
1) Distal ormesial shift of the upper teeth is unilateral or bilateral.
2) Distal ormesial shift of the lower teeth is unilateral or bilateral.

The third group.

1) The inclination of the upper teeth in the palatal or buccal side.
2) Inclination of the lower teeth in the palatal or buccal side.
3) The fourth group.

1) Rotation of the tooth around the longitudinal axis. The fifth group.

1) Combined tooth movement.

Secondary movements of teeth sometimes come to the fore, determining the nature of the entire clinical picture, and determine the relative typicality of treatment measures for various types of secondary movements. Hence the importance of their detection during the clinical examination of the patient.

Evaluation of the condition of the mucous membrane of the mouth. A healthy mucous membrane has a pale pink coloring in the gum area and pink in other areas. In pathological processes, the color of the mucous membrane changes, various elements of the lesion appear on it. The most common of them are: erosions - a surface defect, aphthae - small areas of ulcers of yellow-gray colors with a bright red rim of inflammation, ulcers - a primary morphological element in the form of a defect with uneven and undercut edges and a bottom covered with gray plaque.

The patient complains of areas of redness of the mucous membrane, bleeding, swelling and burning of the mucous membrane of the prosthetic bed.

The cause of these symptoms can be: mechanical trauma, heat exchange disorders of the mucous membrane due to poor heat conduction bridges of the plastic prosthesis, toxic-chemical effects of plastic ingredients, allergic reaction to plastic, systemic diseases (vitaminosis, endocrine diseases, diseases of the gastrointestinal tract, mycosis, etc.).

During the examination, it is important to establish the nature of the lesion of the mucous membrane, the cause of the lesion, the stage of the disease (aggravation, remission). All these factors are important for choosing the method of treatment and the material from which prostheses will be made, as well as determining the beginning of prosthetics. For example, in the presence of erosions, ulcers of a traumatic nature, prosthetics is performed after their complete healing. When manifestations of lichen planus, leukoplakia and other chronic diseases are detected in the oral cavity, prosthetics is performed during the period of remission.

When the above-mentioned lesions of the mucous membrane of the oral cavity are detected, it is necessary to conduct additional studies (blood analysis, cytology), consult with a dental therapist and, if necessary, a dermatovenerologist for the purpose of differentiation. For example, traumatic ulcers must be differentiated from cancerous and tubercular ulcers, syphilitic ulcers.

Prolonged trauma can lead to hypertrophy of the mucous membrane and the formation of fibromas and papillomas.

Examination of the jaw bones. When examining the mucous membrane of the oral cavity, during palpation, bone bed formations are simultaneously examined. Attention is drawn to the expressiveness of the alveolar process, the arch of the hard palate, and the maxillary cusps. The zone of the median seam must be examined for the purpose of determining the torus (Fig. 69, a).

In the region of the edentulous alveolar process, sharp bony protrusions are sometimes identified, which were formed as a result of incomplete overgrowth of the tooth socket and protruding interdental septum. These protrusions are painful, because the mucous membrane covering them is thinned, without special surgical preparation of these areas, it is not advisable to carry out prosthetics.

On the lower jaw, in a number of cases, it is possible to establish the presence of bone protrusions (exostoses) on the lingual side of the right; and the left half of the jaw, their considerable expressiveness requires special preparation before prosthetics with removable prostheses.

Examination of the temporomandibular joint. With the formation of dentition defects, due to the loss of chewing teeth, pathological wear of the remaining group of teeth, periodontal diseases, the inter-alveolar distance decreases, the position of the lower jaw changes, which causes a change in the position of the articular heads and all the ratios of the joint elements. All this leads to the disease joint

The synchrony of the displacement of the articular head in relation to the articular disc and the articular fossa during movements of the lower jaw may be disturbed in diseases of the muscles, especially the external pterygoid muscle, the central nervous system, diseases of the joint itself (arthritis, arthrosis). Therefore, during the examination, it is important to identify the root cause of the disease of the joint, because the technique of prosthetics and the nature of therapeutic treatment depend on it.

The following complaints about pain in the joint are most often presented: swelling in the joint area, difficulty opening or closing the mouth, pain, clicking, headache, burning of the tongue, dry mouth. The palpation method is used to examine the joints. For this, the index fingers of the hands are placed on the front surface of the scapula and the patient is asked to slowly open his mouth. At the same time, the palpator determines the surface of the articular head and the back zone of the joint gap. By moving the fingers forward and pressing on the projection of the joint gap and the joint head, painful points are determined. Palpation is carried out when the teeth are closed, at the moment of opening and when the mouth is wide open.

The sound of friction, crepitation in the joint may be associated with a violation of the release of synovial fluid. A snapping, crunching sound at

the moment of opening the mouth is more due to a decrease in the height of the bite and a distal shift of the lower jaw, and, therefore, the articular heads. Crepitation, crunching, clicking can also be determined by auscultation methods using a phonendoscope. With the appearance of pain in the joint, clicking and crunching, it is necessary to conduct additional studies (x-ray, rheography, arthrography).

LABORATORY AND INSTRUMENTAL RESEARCH METHODS

Laboratory-instrumental research methods are considered additional because they are not always used. The goal of these studies is to establish and confirm an accurate diagnosis.

X-ray research is based on obtaining and reading X-ray images. Various methods are used for this:

— inside andextraoral radiography;
— tomography;
— panoramic radiography.

Radiography is the most common and available method of radiological examination of teeth, alveolar processes, jaws, bones of the facial skeleton and skull.

Radiography provides valuable information about the condition of the hard tissues of the crown and root, the dimensions and features of the pulp chamber, root canals, the width and nature of the periodontal fissure, the condition of the alveolar process cavity wall. the presence of pathological processes in areas inaccessible to external inspection, deformation of the bones of the maxillofacial region.

On the X-ray image, the image is negative: bone tissue has light shades, soft tissues, air spaces - dark. Enamel has a lighter tone than cementum and dentin. Carious cavities have dark shades. The cavity of the tooth, the periodontal gap look like dark lines of different configurations.

An intraoral X-ray allows to determine carious cavities, impacted teeth, pulp topography, canal patency, the presence of denticles, stanperiapical tissues overhanging the edges of the crowns, the degree of alveolar bone tissue atrophy.

Tomography. X-ray examination, convenient for studying structural changes of the alveolar process and jaws, turned out to be insufficient for studying the temporomandibular joint, because it has a complex structure and is located near the base of the skull. Therefore, it is almost impossible to obtain an X-ray image of the temporomandibular joint using conventional radiography methods.

Conventional X-ray of the joint gives an idea of only gross changes in articulation (fractures, sharp deformations of the joint surfaces during inflammatory and degenerative processes). Subtle changes in the initial stages of the disease cannot be detected by this method, and the joint looks normal on the X-ray.

All this, of course, prompted the search for new, more advanced methods of X-ray examination of the joint. Such methods include tomography. It allows you to get an X-ray image of a certain cartilage located at one or another depth. This method makes it possible to study the ratio of the elements of the temporomandibular joint at a certain depth. With its help, it is also possible to detect small structural changes in the bones of the joint, caused by both general and local (disruption of function, trauma) diseases.

Panoramic radiography (panography). Panoramic radiography proposed by Blackman. It allows you to get a complete picture of all the teeth in the form of a panoramic picture of sufficient sharpness with a 2-fold increase and significantly less radiation than with a regular picture. Shooting is carried out while the object and the cassette are moving, and the X-ray tube remains stationary. At the same time, only those layers of the object are determined, which are removed at the same speed as the film. These layers appear more sharply, while others are blurred. The X-ray tube is placed behind, below the back of the head. During the production of the image, the chair with the patient rotates clockwise, and the cassette with the X-ray film rotates in the opposite direction. As a result of such arrangement of the patient and the film, an expanded image of the jaws is obtained. The availability of the X-ray method has given rise to the opinion of some doctors about its harmlessness. This led to an unjustified expansion of the indications for radiography of the teeth and alveolar process. Meanwhile, X-ray exposure is not indifferent to the body, and it is necessary to remember the limits of its use.

When examining a patient before prosthetics, an X-ray is shown of teeth with affected periodontium, in case of suspicion of a hidden carious cavity, roots covered by a mucous membrane, teeth with fillings, teeth that were the support of bridge-like prostheses, clasps covered with crowns, teeth with pathological wear of teeth, changed in color, etc. .d.

Radiography. Recently, there have been devices that combine an X-ray unit and a video camera, so-called X-ray visiographs. They make it possible to receive on the screen with the help of a video camera the images of the tissues of the tooth and soft tissues, enlarged by 27 times. In addition, with the help of an x-ray visiograph, you can get a photo of the image received on the screen, which favorably distinguishes it from an ordinary x-ray machine, because it does not need time to develop the film. The image on the photograph is clearer than on X-ray film. The radiograph is placed directly in the doctor's office.

Methods of determining masticatory pressure. Absolute silage of muscles. The masticatory muscles belong to the power muscles, that is, developing mainly strength, in contrast to other muscles, which tend to develop mainly speed.

Absolute muscle strength is determined by the number of fibers that make up a given muscle, that is, by the area of the physiological diameter. The more fibers in a muscle, that is, the larger the area of the physiological cross-section, the more effort this muscle can develop. Weber believes that "the strength of a muscle, other things being equal, is proportional to its cross-section."

According to Weber, a muscle with a diameter of 1 cm2 develops a force equal to 10 kg. The muscles that raise the lower jaw have the following cross-sections: temporal muscle — 8 cm2, masticatory muscle — 7.5 cm2, external pterygoid muscle — 4 cm2. Based on the cross-sectional data, the absolute strength of the temporal muscle is 80 kg, the masticatory muscle is 75 kg, and the external pterygoid is 40 kg, that is, the total absolute strength of the muscles of one side is 195 kg. The total absolute strength of the masticatory muscles of the right and of the left side is 290 kg (195x2).

The absolute strength of the muscles, established theoretically by adding the indicators of the physiological diameters of the masticatory muscles that raise the lower jaw, and multiplying the obtained amount by the possible development of strength by each square centimeter of the cross-sectional muscle, naturally does not correspond to reality. When working together, the masticatory muscles cannot develop a force equal to 290 kg. The absolute strength of both chewing and other muscles develops only in moments of danger and mental turmoil, and in everyday life a person does not need to develop such strength when chewing food. Therefore, researchers are mainly interested in the pressure that develops on a certain part of the body for biting and chewing food of the appropriate consistency (meat, bread, crackers, etc.). It is also important to know the endurance of periodontal teeth to masticatory pressure, which would allow orientation in the permissible load of it during prosthetics with bridge-like and other prostheses.

The endurance of the periodontium is measured with special devices - gnathodynamometers. The gnathodynamometer was first proposed in 1893 by Bleck. After that, others based on the same principle were designed. The device is supplied with a platform for teeth. When closing the mouth, the teeth transmit a certain pressure through the platform to the spring, which is registered on the scale in kilograms. In recent years, new designs of the gnathodynamometer have been proposed, which perceives the strain gauges as a device.

The gnathodynamometry method was not accurate enough, because these devices measure the endurance of the periodontium to pressure that has only one direction (vertical or lateral). When the force is applied to the tooth, the pressure is distributed and acts, in addition, both on the supporting tooth and on the nearby guard.

Static methods of determining masticatory efficiency. To determine the endurance of the periodontium and the role of each tooth in chewing, special tables have been proposed, which have received the name of statistical systems of accounting for chewing efficiency. In these tables, the degree of participation of each tooth in the act of chewing is determined by a constant value expressed as a percentage.

When compiling these tables, the role of each tooth is determined by the size of the chewing and cutting surface, the number of roots, the size of their surface, the distance at which they are removed from the angle of the jaw. Several tables constructed according to the same principle have been proposed (Dushanzh, Vustrov, Mamlok, etc.). In our country, the static system of accounting for chewing efficiency, developed by N.I. Agapov (Table 1), has become widespread.

Table 1 Chewing coefficients of teeth according to N.I. Agapov

Teeth	1	2	3	4	5	6	7	8	That's all
Chewing coefficients, % V/Ch	2	1	3	4	4	6	5	—	25
N/A	1	2	3	4	4	6	5	—	25

N.I. Agapov accepted the chewing efficiency of the entire dental apparatus as 100%, and the unit of chewing ability and endurance of the periodontium is the small incisor, comparing all other teeth with it. Thus, each tooth in his table has a constant chewing coefficient.

N.I. Agapov made corrections to this table, recommending that when calculating the chewing efficiency of the remaining dentition, antagonistic teeth should be taken into account. For example, with a dental formula

654001 1 100345

654001 | 100345

chewing efficiency is equal to 58%, and with dental formula

654001 | 100345

000000 I 000000

it is zero because there is no pair of antagonists.

As already noted, in the Agapov system, the value of each tooth is constant and does not depend on the condition of its periodontium. For example, the role of a canine in chewing is always determined by the same coefficient, regardless of whether it is stable or has pathological mobility. This is a serious drawback of the proposed system.

V. Yu. Kurlyandsky proposed a static system of accounting for the state of the supporting apparatus of the teeth, which he called the periodontogram. The periodontogram is obtained by entering data about each tooth in a special table.

As in other static schemes, in the periodontogram, a conditional coefficient is assigned to each tooth by a healthy periodontium. These coefficients are based on the proportional ratios of the periodontal endurance of different teeth to the load, which was determined by gnathodynamometry with an intact periodontium. The coefficient of periodontal endurance to load is correspondingly reduced at different degrees of atrophy of the socket in different teeth. With stage IV atrophy, the periodontium has no endurance to load (the tooth must be removed).

In practice, it is generally accepted that the periodontium of a tooth is able to withstand twice as much load as the load during food processing.

FUNCTIONAL RESEARCH METHODS

Functional chewing samples. Static methods turned out to be not very acceptable for determining the degree of disturbances in chewing efficiency, and not only because they do not accurately determine the role of each tooth in chewing and the perception of chewing pressure, but also because they do not take into account the type of bite, the intensity of chewing, the strength of chewing pressure, the influence saliva for grinding food, the role of speech in the mechanism of food lump formation. Therefore, in order to take into account the influence of all the above-mentioned factors, functional (chewing) tests were proposed, which allow to obtain a more correct representation of the disturbance of the chewing function.

The masticatory force of the muscles is in physiology the force that can be developed by all the masticatory muscles that raise the lower jaw. It is equal, according to Weber's data, to an average of 390--400 kg (the physiological diameter of all three pairs of levator muscles of the lower jaw is 39 cm2, and 1 cm2 of the area of the physiological diameter of the muscle can develop a force of 10 kg. Hence, it is necessary that the entire masticatory the musculature can develop a force of 390-400 kg. The physiological diameter of the internal pterygoid muscle is 4.0 cm2, characteristic of the masticatory muscle is 8 cm2, temporal muscle is 7.5 cm2, that is, the internal pterygoid muscle can develop a force of 40 kg, characteristic chewing — 75, and temporal — 80 kg, only on one side 195 kg, and on both - 390 kg.

Masticatory pressure is the force exerted by the masticatory muscles on one side of grinding food. Vertical and horizontal masticatory pressure are distinguished. It is measured in kilograms using a gnathodynamometer.

Chewing efficiency is the degree to which food is crushed by the teeth. The masticatory efficiency is measured as a percentage compared to the intact dentition-jaw system, the masticatory efficiency of which is taken as 100%.

The Christiansen mastication test is the first of the methods for determining mastication efficiency. He investigated the degree of crushing of a certain food - a forest nut or a coconut. For the sample, 5 m

of walnut were taken, after 50 chewing movements, the patient spat the chewed mass onto a strainer with a diameter of 2.4 mm. The mass was sieved, the remainder was weighed. The remainder, divided by 5 m and multiplied by 100%, was the Christiansen coefficient.

Chewing test according to Gelman is a modified technique of Christiansen, proposed for assessing the functional state of the maxillofacial system and determining chewing efficiency. The test was based on the author's observation that the intact maxillofacial system grinds 5 m of almonds in 50 seconds. to the size of the particles sifted through a sieve with holes with a diameter of 2.4 mm. If there are defects in the tooth rows in 50 seconds. the almonds are not completely crushed, and part of them remains on the sieve.

Methodology: 5 m of almonds are weighed and the examinee is asked to put the almond in his mouth and start chewing after the "start" signal. The start of chewing is marked on a stopwatch. After 50 sec. at the "step" signal, the subject stops chewing, spits out the chewed mass into a tray, rinses his mouth and spits out water into the same cup. For disinfection, add 5-8 drops of a 5% sulema solution to the tray. The contents of the tray are filtered through cheesecloth, and the residue is evaporated into a water tank. Then the mass is carefully sifted through a sieve, stirring often, preferably with a wooden stick. Part of the mass remaining on the sieve is carefully poured into an hour glass of the appropriate size and weighed. The percentage of chewing disorder is calculated according to the following formula. Let's assume that a mass weighing 2.62 m remained on the sieve, then:

5:2.82= 100:X, where X is the percentage of chewing disorder

x : 2.82= 100 : 5

x = 2.82x100 282:5= 56.4%.

Chewing efficiency is 100% - 5b.4% = 43.6%.

Chewing test according to I. S. Rubinov - proposed to assess the functional state of the maxillofacial system. Technique: products with different physical properties are used (nuts, breadcrumbs, soft bread, etc.). On the basis of the chewing test, it was found that, as the state of the dental system deteriorates, the time of chewing before swallowing when processing solid food substances (nuts) is prolonged, and despite this, food particles of relatively large sizes are swallowed. It is known that in adults with a complete chewing apparatus, the duration of chewing the kernel of one nut before swallowing is on average 14 seconds, and the residue in the food is zero (according to the Christiansen method), and in the absence of 2-3 teeth, the chewing time is 23 seconds, and part of the kernel remains insufficiently fragmented. In cases of intact and broken dental system, the time spent chewing soft food differs little. I. S. Rubinov will use one walnut kernel for the sample instead of 5 m of almonds. This makes it possible to judge the functional state of individual

groups of teeth. The processing of the obtained core chewing data is carried out according to the method of S. E. Gelman.

Graphic methods of studying chewing movements of the lower jaw. Various diseases of the oral cavity and masticatory muscles disrupt the biomechanics of the lower jaw. As the patient recovers, the movements of the lower jaw may return to normal. Normal movements of the lower jaw, their violation and the dynamics of recovery can be studied using a graphic method. At this time, the chewing movements of the lower jaw can be recorded on various devices: kymograph, oscilloscope, etc.

I.S. Rubinov developed in detail the recording of chewing movements of the lower jaw (masticography) and deciphered the meaning of each of the component parts of the graphic recording.

Study of the function of masticatory muscles.

The function of the masticatory muscles changes not only during various movements of the lower jaw, but also in connection with pathological conditions of the masticatory apparatus: loss of teeth, joint disease, change in bite height. Therefore, for a complete characterization of the clinical picture accompanying this or that disease of the masticatory apparatus, it is desirable to obtain data on the functional state of the masticatory muscles by means of myotonometry and electromyography.

With the help of myotonometry, the tone of the masticatory muscles is measured. Devices used for this purpose are called myotonometers. The degree of tension (density) of the muscles is judged by the expended force with which the probe of the device plunges to a given depth. The arrows of the dial show the degree of muscle tension in grams.

Electromyography. Electromyography refers to the measurement of biopotentials of muscles in general and chewing muscles in particular. During the contraction of the muscles, currents of action appear in them. These action currents can be amplified by special devices and recorded on the photo paper of the oscilloscope in the form of a curve. This research method is called myography.

Thermal diagnostics. Determining the reaction of a tooth to temperature stimuli (heat or cold) — thermodiagnostics — is one of the simplest methods of examining the condition of the tooth pulp. Teeth that do not have changes in hard tissues and pulp react to a heat factor above +50° C, to cold below +10° C. In case of pulpitis, irrigation of the tooth with a stream of hot water +50° C, sometimes lower, or application of a tampon to the tooth , moistened with hot water, causes a sharp pain that does not go away for a long time, and in case of deep caries, the pain goes away quickly. Teeth react to cold and heat after preparation, when the necks are exposed, wedge-shaped defects.

To determine the reaction of the tooth, a special thermoodontochronometer device will be used. With the help of the device, the specified temperature effect is detected on a certain area of the

tooth. The sensor of the device makes it possible to receive the temperature from 0 to +70 ° C and smoothly adjust it. The device records the time of occurrence of the corresponding reaction.

Diagnosis is one of the most difficult sections of clinical medicine in general and orthopedic stomatology in particular. Correct diagnosis is possible if the results of various studies are obtained, confirming the likelihood of symptoms, if there is a clear presentation of the etiology, pathogenesis of the disease, clinic and pathological anatomy.

The doctor collects individual facts (symptoms) in a certain sequence, analyzes them in order to synthesize the collected facts.

Having received the results of various studies that confirm the probability of symptoms, they are compared with the symptoms of known diseases and put forward an assumption (hypothesis) or several hypotheses. There can be several working hypotheses when making a diagnosis. All of them, especially in complex clinical cases, should be carefully checked to prevent medical errors: diagnosis of one disease instead of another; diagnosis of one disease, while the patient suffers from several diseases, diagnosis of complications of the main disease without defining this main disease, diagnosis of complications as the main disease, and the main one is interpreted as a complication.

Hypothesis testing necessarily involves differential diagnosis.

Thus, the diagnosis should be formulated in such a way as to, firstly, characterize the cause of the disease, i.e. etiology and pathogenesis, secondly, give an idea of the patho-anatomical basis of the disease, its localization; in the third, to indicate the degree and nature of functional disorders, in the fourth, to specify the specifics of the course and form of the disease.

Medical history. The medical history or ambulatory card of a dental patient is a mandatory official and medical document in which examination data, diagnosis, orthopedic treatment plan and its implementation are entered. All data must be recorded consistently and completely, so that not only fills the medical history, but also another doctor can form a complete picture of the patient, the validity of the chosen method of prosthetics and its result. For a young doctor who is just starting his practice, it is not superfluous to remember that this document, reflecting the dynamics of the development of the disease, the method of treatment and its result, is at the same time a certificate of medical maturity, which testifies to the level of clinical thinking of the doctor, his capacity for work.

The medical history must be filled in so that the sequence of treatment can be carried out. In other words, another doctor who will continue to treat the patient, based on the records, must clearly imagine the clinical picture that existed before the treatment, the validity of the diagnosis and the method of treatment.

The medical history in some cases can play the role of a legal document, so the entries in it should be clear and given in sufficient volume.

SCHEME FOR COMPLETING THE HISTORY OF THE DISEASE

I. Official data:

and) P.I.B. •

b) age

in) profession

d) address

II. Complaints of the patient (disorders of mastication, aesthetics, defect of crowns, mobility,increased grinding of teeth, pain in the temporomandibular joint; pain under the basis of a schematic prosthesis, tooth pain under an artificial crown, etc.)

III. Medical history:

1. From what age, the beginnings of losing teeth and which ones, in what sequence (incisors, canines,premolars, molars).

2. Does the patient note the connection of dental pathology with working conditions, living conditions, transferred diseases (rickets, infectious diseases, bad habits, etc.).

3. What were the teeth extracted for (crown destruction, mobility,increased abrasion, osteomyelitis, etc.).

4. Does the patient note the appearance of diseases after losing teeth gastrointestinal tract (disturbance of taste, appetite, belching, nausea, vomiting, feeling of weight in the bed area before and after meals, pain, etc.).

5. Did the loss of teeth affect the language?

6. Did he run after losing his teeth to restrictions when eating (noticeable hard food for more soft food). Which side mainly chews food.

7. How is tooth care carried out, from what age and whether regularly (using a toothbrush, powder, paste, brushing teeth only in the evening or in the morning, before meals, after meals).

8. The patient is getting prosthetics for the first time or again. Uses removable or fixed prostheses (for how long, feedback on prostheses).

9. Reasons for dissatisfaction with prosthetics (pain, poor fixation of a removable prosthesis, unsatisfactory aesthetics, burning of the mucous membrane of the oral cavity under the prosthesis, nausea, fatigue of the masticatory muscles, speech impediments, impaired diction, long habituation,decubitus ulcers, etc.).

10. Evaluation of the old prosthesis (aesthetics, occlusion, fixation, condition of artificial teeth, condition of tissues of the prosthetic bed,stanklammerov, relation to the ash border, etc.).

11. What general diseases does the patient suffer from (anemia, allergies, ulcersstomach, duodenum, diabetes, hypertension, hemiplegia, polyarthritis, bronchial asthma, trigeminal neuralgia, etc.).

12. Presence of bad habits (smoking, drinking alcohol).

13. Does the patient constantly or only recently use pharmacological drugs, which ones exactly.
14. Does he experience excitement, anxiety before the upcoming orthopedic treatment. What causes for concern.
15. Was anesthesia performed in the past during treatment or tooth extraction, its effectiveness.
16. Peculiarities of premorbid personality (normal subject, without distinct expressiveness of individual features, thoughtful-anxious-distrustful, prone to doubt, demonstrative, hysterical, excitable passive, powerless, haunting, withdrawn, unsociable personality).
IV. Objective data:
A) External review.
1. Face type (conical,reverse conical, square, rounded).
2. The condition of the skin of the person (colors, turgor, rash, spots, etc.).
3. Prominence of the chin andnasolabial folds (moderately expressed, smoothed, deepened).
4. Character of closing the lips (lips close without tension, tense).
5. The corners of the mouth (lowered, not lowered), there are nicks, there are none.
6. The position of the chin (straight, shifted to the side, protruding, falls).
7. The height of the lower third of the face (reduced, increased, unchanged).
B) Examination of the temporomandibular joint (TMJ).
1. Degree of mouth opening (free, limited).
2. The nature of the movement of the lower jaw (smooth,push-type).
3. The presence of confusion of the lower jaw (right, left, absent).
4. Palpation data of the heads of the lower jaw (head-swimming, push-like movements).
5. Auscultation data (crunching, crepitation, clicking is determined).
b) Examination of the oral cavity.
1. General characteristics of the mucous membrane of the oral cavity (color, moisture, the presence of pathological formations: polyps, flecks, aphthae, erosions, ulcers, etc.).
2. Salivation (abundant, poor, normal).
3. State of oral hygiene (good, satisfactory, unsatisfactory).
4. Dental formula. Type of bite (orthognathic, direct, biprognathic, prognathic, progenic, cross, deep, open, fixed, unfixed, ratio of edentulous alveolar processes of the upper and lower jaws).
5. Description of the type of bite:
and) signs of closure,apply to all teeth, signs of closure of the front teeth,
b) signs of closing of the chewing teethbuccal-palatal direction,

in) signs of teeth clenchinganterior-posterior direction.
6. Dental examination:
and) the shape of the tooth rows (elliptical, parabolic, trapezoidal, flattened, etc.),
b) the position of individual teeth in the dental row,
in) deformations of the tooth row (classification according to A. I. Gavrilov, Kennedy).
7. Examination of teeth (shape, color, condition of hard tissues: caries, hypoplasia, fluorosis, presence of fillings, their condition).
8. Examinationperiodontal:
and) condition of the gums (inflammation, atrophy),
b) evaluation of the gingival pocket (depth, suppuration),
in) prevalence of the process,
d) tooth stability,
e) correlationextra-alveolar and inside alveolar parts of teeth.
9. The number of pairs of antagonistic teeth.
10. Characteristics of dentition defects (type, location, shape, size).
11. The state of the edentulous alveolar process of the upper jaw:
and) nature and degree of atrophy (uniform, uneven, greater, small, medium),
b) kind of vestibularscat of the upper jaw (gentle, steep, with a canopy),
in) the presence of bone protrusions on the alveolar process after tooth extraction (localization, length, depthhypopituitarism, soreness of bony protrusions when pressed),
d) formthe ridge of the alveolar process in the front and side sections (sharp, rectangular, truncated cone,
semi-oval, flattened, wide ridge, narrow ridge),
e) availabilityridge to be folded (localization, magnitude, degree of shift),
is) expressioncusps of the upper jaw (form of vestibular and distal surfaces, right, left).
12. Characteristics of the relief of the solid sky:
and) the shape and height of the solid sky (high arch, low, medium, wide, narrow),
b) state of the hard palate seam (concave, convex, flat),
in) palatine torus (shape, size, localization),
d) the shape of the distal edge of the hard palate (vaulted, flat).
13. Characteristics of the mucous membrane of the prosthetic bed on the upper jaw:
and) flexibility of the mucous membrane of the hard palate,
b) distinctness of buffer zones,
in) expressiveness of the transverse palatal folds in the front part of the hard palate,

d) expressiveness of palatal blind holes, their localization (on the "A" line, in front of the "A" line, behind the "A" line),
e) incisor papilla (size, flexibility),
is) the location of the transitional fold in relation to the alveolar process (at the base, at the level of the slope, at the top),
g) degree of expressiveness, shape and place of attachment of the frenulum of the upper lip, front and sidesbuccal-alveolar cords
mucous (at the base, to the slope of the hump of the upper jaw, at the top of the hump, to the aponeurosis of the soft palate muscle).
14. The condition of the bone base of the prosthetic bed on the lower jaw:
and) the nature and degree of atrophy of the alveolar process (uniform, uneven, greater, small, medium),
b) size, shape and localization of exostoses,
in) availabilitychin-tongue torus (size, shape),
d) expressiveness of internal oblique lines, their shape (sharp, pointed round), soreness when pressed,
e) the presence of bone formations on the alveolar process after tooth extraction (localization, shape, size, sensitivity to pressure),
is) formthe ridge of the alveolar process in the front and lateral parts of the lower jaw (sharp, rectangular, truncated cone, semi-oval, flattened, wide ridge),
g) the presence of a dangling ridge on the lower jaw (localization, size, degree of displacement).
15. Characteristics of the mucous membrane of the prosthetic bed on the lower
jaws:
and) the location of the transitional fold in relation to the alveolar process (at the base, at the level of the slope, at the top),
b) degree of expressiveness, shape and place of attachment of the frenulum of the lower lip, tongue, front and sidesbuccal-alveolar mucosal cords (at the base, to the slope, to the top of the alveolar process),
in) the presence of folds of the mucous membrane of the alveolar process (location, direction, spreading, not spreading),
d) mucous tubercles (shape, size, mobility, consistency, pain upon palpation).
16. The size and shape of the sublingual space (right, left).
17. The size and shape of the sublingual space in the front part of the lower jaw (large, small, in the form of a slit, triangular, trapezoidal).
18. Submandibular salivary glands (presence, their position atmovement: protrude above the crest of the alveolar process, do not protrude).
19. Volume and tone of speech (increased, not increased, tone moderate, increased).

20. Muscle tonefloor of the mouth, cheeks and lips (moderate, increased, decreased).

V. Data of special examination methods:

1. X-ray characteristics of teeth andperiodontal tissues

(the condition of the hard tissues of the crown and root, the dimensions and features of the tooth cavity, root canals, the width and characteristics of the periodontal fissure, the condition of the compact plate, the wall of the alveolus and the spongy substance of the alveolar process, the presence of foci of chronic inflammation, etc.)

2. Data of X-ray examination of TMJ.

3. Tomography and teleroentgenography data.

4. Data on the study of diagnostic models of the jaws.

VI. Diagnosis and differential diagnosis.

Based on the data of the patient's clinical examination, a diagnosis is made, which should consist of the main and secondary. 1. The main disease and its complications:

and) the main disease refers to what prompted the patient to contact the orthopedic clinic;

b) Complications should include those violations thatpathogenically related to the main disease.

2. Associated diseases are those treated by dentists

other profiles. If necessary, differential diagnosis is carried out.

3. In the diagnosis "Partial loss of teeth" it is necessary to indicate the type of tooth row defect according to Kennedy, and "Complete loss of teeth" - the type of toothless jaw according to I.M.Oxman.

VII. Oral cavity preparation plan for prosthetics:

1. General rehabilitation measures (removal of dentaldeposits, treatment of teeth, removal of roots and teeth of III degree of mobility, treatment of diseases of the mucous membrane of the oral cavity, etc.).

2. Special preparation of the oral cavity (depulped teeth, elimination of occlusal disorders, orthodontic preparation, alveolotomy, excision of frenulums, transfer of the place of attachment of frenulum, tzhivslizuavata, deepening of the vestibule of the mouth, floor of the oral cavity, etc.).

VIII. Orthopedic course plan.

Specify the type of prosthesis (immediate, proximal, remote). To justify the choice of the design of the prosthesis as a treatment tool.

IX. Diary of orthopedic treatment.

All visits to the patient are recorded, indicating the date and a detailed description of the performed clinical procedures. During repeated visits to the patient after the prosthesis is applied, complaints, objective research data, the nature of the assistance provided, and the peculiarities of the patient's getting used to the prosthesis are described. To evaluate the immediate results of prosthetics (prosthetic quality, functional properties,

condition and reaction of prosthetic bed tissues, number of corrections, patient recall, etc.).

X. Epicrisis and prognosis of orthopedic treatment.

The name, age and complaints of the patient on the day of the visit to the clinic are indicated. What was the diagnosis? Beginning and end of treatment. Type of prosthetics and prosthesis construction.

Describe the patient's condition as a result of the treatment and indicate the prognosis.

3.2. recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and skills, etc.);

3.3. requirements for work results, including registration;

3.4. control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

4. Summary:

- Complete removable dentures.
- Classification of edentulous jaws according to Schroeder, Keller and Oxman.
- Lund's classification of the pliable zones of the mucous membrane
- Classification of the condition of the mucous membrane of the oral cavity according to Supli.
- Design of complete removable prostheses. Classifications of toothless jaws.
- Clinical and laboratory stages of manufacturing complete removable prostheses.

5. List of recommended literature (main, additional, electronic information resources):

Main:

- Orthopedic dentistry: textbook / Rozhko M.M., Nespryadko V.P., I.V. Paliychuk and others; under the editorship M.M. Rozhka, V.P. Nespryadka. - K.: Medical Center "Medicine"; 2020. - 720 p.
- Rozhko M.M., Nespryadko V.P., Mykhaylenko T.M. and others. Dentoprosthetic technique. K.: Book plus; 2016. 604 p.
- Rozhko M.M., Popovych Z.B., Kuroyedova V.D. Dentistry. Textbook. K.: Medical University "Medicine"; 2018. 872 p.

Additional:

- Dentistry: in 2 books. : textbook. Book 2 / M.M. Rozhko, I.I. Kirylenko, O.G. Denisenko and others. ; under the editorship M.M. Horn — 2nd edition. — K.: VSV "Medicine", 2018. — 992 p. ; color kind.
- Material science in dentistry: a study guide / [Korol D.M., Korol M.D., Ojubeiska O.D. etc.]; in general ed. King D.M. – Vinnytsia: New book, 2019. – 400 p.

Electronic information resources:

- State Expert Center of the Ministry of Health of Ukraine http://www.dec.gov.ua/index.php/ua/

- National Scientific Medical Library of Ukraine http://library.gov.ua/

- National Library of Ukraine named after V.I. Vernadsky http://www.nbuv.gov.ua/