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THE HIGHER STATE EDUCATIONAL INSTITUTION OF UKRAINE
"UKRAINIAN MEDICAL STOMATOLOGICAL ACADEMY"

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METHODICAL RECOMMENDATION
for independent work of students during the preparation
to practical lessons and the lessons

Academic discipline	Orthodontics
Module №3	Children's dental prosthetics
The theme of the lesson №9	Etiology, pathogenesis, diagnosis and prevention of congenital defects of the face.
Course	V
Faculty	Preparation of foreign students

Poltava 2017

1. Relevance of the topic:

The knowing the congenital malformations of the face and jaws is necessary for doctors to correctly determine the clinical prognosis, the life forecast, and also the prognosis of regarding the professional suitability of the patient. In addition, an accurate diagnosis is important for determining the genetic prognosis for the patient's relatives during medical genetic counseling. In this case, the fate of many people, and not just one patient, depends on an accurate diagnosis.

2. Specific objectives:

To explain the etiology and pathogenesis of the onset of congenital malformations of the face.

Explain the features of diagnosis and prevention of congenital malformations of the face.

To become acquainted with the principles of diagnosis of hereditary syndromes in orthodontics.

Analyze the clinical manifestations of the main hereditary syndromes.

3. Basic knowledge's, abilities, skills necessary for studying the topic (interdisciplinary integration)

Name of previous disciplines	Skills
1. Anatomy	To describe the anatomical and physiological features of the brain and facial sections of the skull structure, jaws, the attachment of mimic and chewing muscles, and the mucous membrane of the oral cavity. To evaluate the development and proportionality of the facial part of the skull, jaws size.
2. Prevention of dental diseases	The timing, order and sequence of permanent teeth eruption.
3. Histology	To know the timing and order of the different parts of the face formation.

4. Tasks for independent work in preparation for the lesson.

4.1. A list of key terms, parameters, characteristics that a student should learn in preparation for the lesson:

Term	Definition
1. The congenital malformations.	Persistent morphological changes in the organ or the whole organism, beyond the limits of the variations of their structures. Congenital malformations occur in utero as a result of disruption of the embryo development.
2. The congenital malformations of the face.	Systemic disturbances within the first and second pharyngeal arches during the embryonic development of the child. Common to all syndromes is dysplasia and (or) underdevelopment of the tissues and organs of the face, entailing functional and aesthetic disturbances.

3. Coloboma	The oblique cleft of the face is a lateral slanting slit extending from the lower eyelid to the upper lip. The gap can be complete and incomplete. In the first case, it divides the tissues all the way and penetrates the oral cavity; In the second – it is limited to the area adjacent to the eye. Rarely there is a bilateral coloboma.
4. Macrostoma	The transverse cleft of the face is a defect in the corners of the mouth. The gap can be one-sided and two-sided; Its extent is different. Clinically, unusually large quantities of mouth are found. In some cases, from the corner of the mouth there is a scar to the ear. Muscles along the edge of the defect are underdeveloped, the mouth is not fully closed, so there is constant salivation.
5. Obturator	Special orthodontic devices-prostheses designed to close the defects of the palate. The obturator for the hard palate is a base plate covering the defect and strengthening through the clasps. The obturator for the soft palate is located in the region of the mobile tissues, which presents certain difficulties with respect to its fixation.
6. Syndrome	Complex of symptoms.

4.2. Theoretical questions to the lesson:

1. Give statistics of the congenital cleft lip and palate prevalence.
2. List exogenous and endogenous factors that influence the formation of maxillofacial pathology.
3. What period of embryonic development is critical for cleft lip and palate formation?
4. Explain the difference between an isolated and end-to-end cleft.
5. Measures to prevent congenital malformations of children's faces.
6. List the morphological disorders with various congenital malformations of the face.
7. List functional impairments for various congenital malformations of the face.
8. List the aesthetic disorders with various congenital malformations of the face.
9. What are the main principles of complex treatment of patients with congenital facial malformations?

4.3. Practical work that are performed in class:

1. To identify the type of congenital malformation of a person, make a diagnosis, choose a method of treatment and the sequence of treatment measures.
3. To conduct an examination of the face, the vestibule of the oral cavity, the mouth proper in patients with congenital malformations of the face.
4. To characterize the bite in three planes in patients with congenital malformations of the face.

5. To be able to remove impressions from patients with clefts for manufacturing of obturators, protective plates, preforming apparatus.

The content of the topic:

Embryonic development of maxillofacial area

The beginning of the maxillofacial region formation in the embryo begins shortly after the third week of gestation, when as a result of the growth of the mesenchyme an ectodermal cushion that surrounds the primary oral cavity or stomodion is formed. Gradually it deepens and reaches the blind end of the anterior colon, from which it is separated by a pharyngeal membrane consisting of adjacent ecto- and endoderm leaves. At the fourth week, the pharyngeal membrane erupts and the anterior gut begins to connect through the oral cavity with the external environment. Approximately at the same time on the sides of the head of the embryo two small indentations are formed – the first and second gill or pharyngeal slits. By the end of the first month, the third and fourth gill slits appear, located caudally from the first two. Between the slits due to the growth of the mesenchyme, thickenings are identified, called gill or pharyngeal arches. The first arch is located cranially from the first gill slit and is called the jawbone. The second arch, which is located between the first and second gill slits, is called the sublingual.

At the end of the first month, the mouth cavity is limited to 5 tubercles or processes. One of them (frontal) is located above the oral cavity, the two maxillary – on the sides of it and the two lower jaws – slightly lower than the previous ones. These structures (front-nasal protrusion, maxillary and mandibular elevations) are elements of the first branchial arch and divided by slits. In the process of further development, the mandibular processes approach and coalesce between themselves along the middle line, forming the lower jaw and lower lip. The maxillary processes coalesce with the mandibular ones in the lateral regions and form cheeks and lateral portions of the upper jaw and upper lip, however, they do not reach the midline. In the space between the olfactory tubercles the frontal process descends, along the edges of which there are nasal processes that surround the nasal apertures. The progressive growth of elevations leads to the obliteration of the slits.

By the end of the second month of intrauterine development, when the fusion of the maxillary and frontal processes forming the middle section of the face is completed, six ossification nuclei appear in their thickness. Then ossification takes place first of the palatine processes and lateral sections of the upper jaw, and a little later – the central part of it in the form of an independent incisive bone, which later fuses with the maxillary bones.

The development of the lower jaw begins with the formation of bone tissue from several points of ossification, located in the cellulose adjacent to Meckel's cartilage. Gradually, the cartilage is reduced, giving way to the developing body of the lower jaw. The posterior parts of the jaw, its branches, are formed independently of the Meckel cartilage from the corresponding points of ossification. The ossification of the two halves of the lower jaw ends with their fusion, that is, by transformation into an unpaired bone, after birth, until the end of

the first year of life. The alveolar process of the jaw develops with a mesenchyme surrounding the embryo of the tooth. The lining of the alveolar part of the body of the lower jaw occurs on the 3rd month of intrauterine development, the body of the upper jaw – on the 4th month. The fasciation of the alveolar part with the body of the lower jaw occurs by the 1st month of the breast period, with the upper jaw body by the 3rd month. With the end of teething ending, the formation of the alveolar process ends, and with the end of the formation of the root – its foundation. In the thickness of the jaws that form, form and develop the rudiments of teeth. With the development and eruption of teeth, further growth and formation of the jaws are closely related.

In abnormal embryogenesis, the above-mentioned order of development of the maxillofacial region is violated. The causes of disturbance of the normal course of embryogenesis are quite numerous, and in a number of cases are hereditarily caused. The inheritance of syndromes, in which there are defects of the maxillofacial region, can occur according to a dominant or recessive type of inheritance, and may also be a linkage to the X chromosome. The type of inheritance of a number of syndromes is still unidentified.

Etiology of congenital malformations of the maxillofacial region

Malformation of the maxillofacial region is caused by various factors of the external and internal environment. There are exogenous and endogenous teratogenic causes.

I. Exogenous causes:

- physical factors: irradiation, thermal, mechanical;
- chemical factors: hypoxia, malnutrition, hormonal discrepancies, teratogenic poisons;
- biological factors: viral embryopathy;
- psychic factors: "maternal impressions" or "prenatal effects."

II. Endogenous causes:

- heredity;
- biological inferiority of sex cells;
- the influence of the age of parents.

Congenital malformations of a person are persistent and intrauterine morphological changes in the organ or several organs that go beyond the limits of their structure and lead to functional disorders. Sometimes congenital malformations are called developmental anomalies or congenital malformations. These terms are less used, and deformities, for example, denote the most serious defects, determined at birth. The term congenital developmental defect is somewhat broader and quite applicable both in the designation of the developmental disorder of the intrauterine and revealed at birth, and in the name of postnatal manifestation of developmental malformations. However, fundamental deformities, defects and anomalies no different between. In 20% of cases, congenital malformations of the maxillofacial region are combined with other congenital anomalies, forming syndromes.

The term "syndrome" for most dental clinicians is more associated with a complex of symptoms (Sjögren's syndrome, Behcet's syndrome, Stevenson-Johnson syndrome, etc.) than with "multiple congenital malformations", as it appears to specialists involved in teratology (the doctrine of Developmental defects). It should be noted that in the teratology itself the term "syndrome" is sometimes used as a synonym for the term "disease" (for example, Down's syndrome is Down's disease) and as the name of a complex of vices of unknown etiology.

Hereditary syndrome is a stable combination of primary defects that result from a mutation in the sex cells of the parents or the more distant ancestors of the child (genetic mutations), less often in the zygote (zygotic mutations).

Deformation is a change in the structure of an initially normally formed body.

Anomaly is a complex of disturbances arising as a result of a single error in morphogenesis. For example, a primary impairment of the development of cerebral blisters can cause both holoprosencephalus and cleft lip.

Deformations of congenital genesis are divided into several groups:

1. Isolated dysplasia of the skull a) underdevelopment of all its parts b) craniostenosis of various species, of which the most common are Cruson and Apera syndromes, a tower and triangular skull, the Treich syndrome.

2. Associated disorders of growth of the skeleton and skull: a) mucopolysaccharidosis; b) achondroplasia; c) cranial-clavicular dysostosis; d) imperfect osteogenesis.

3. Embryonic defects of the midline of the skull are crevices of various kinds.

4. Syndromes of I and II gill arches: a) mandibulo-facial dysostosis, or syndromes of Tricher, Collins and Franceschetti; b) hemifacial microsomia (otomandibulodizostoz or otekraniostenoz); c) oculodentodigital dysplasia; d) an orogenitofacial syndrome.

5. Chromosomal defects: a) Down's disease; b) Trisomy 13-15-X chromosomes, or Shereshevpalate-Turner syndrome.

6. Other anomalies: a) dwarfism; b) hemifacial hypertrophy; c) neurofibromatosis; d) Hutchinson's syndrome.

Of the presented list of syndromes, the main mass is extremely rare. Orthodontic treatment of patients with hereditary syndromes is performed depending on the clinical picture of the existing dento-alveolar anomaly or deformity.

Classification of congenital clefts of the maxillofacial region Kolesov:

I. Clefts of the face:

1. Middle face cleft;
2. Slanting face cleft;
3. Transverse cleft of the face (macrostoma).

II. Cleft of upper lip:

1. Congenital latent cleft of upper lip (unilateral or bilateral);
2. Congenital incomplete cleft of upper lip:
 - a) without deformation of the cartilage-cartilaginous part of the nose (one-sided or two-sided);
 - b) with deformation of the cartilage-cartilaginous part of the nose (one-sided or two-sided);
3. Congenital full cleft of upper lip (unilateral or bilateral).

III. Cleft palate:

1. Congenital cleft palate:
 - a) hidden;
 - b) incomplete;
 - c) complete.
2. Congenital clefts of soft and hard palate:
 - a) hidden;
 - b) incomplete;
 - c) complete.
3. Congenital clefts of soft, hard palate and alveolar process (unilateral or bilateral).
4. Congenital clefts of the alveolar process and the anterior section of the hard palate:
 - a) incomplete (unilateral or bilateral);
 - b) complete (one-sided or bilateral).

IV. Congenital clefts of upper lip and alveolar process (one-sided or two-sided).

V. Congenital through clefts of the upper lip, alveolar process, hard and soft palate (unilateral or bilateral).

To solve the problems of planning and predicting the results of orthodontic and prosthetic treatment of patients with various types of congenital cleft in the maxillofacial region, it is convenient to use the following systematization.

Types of congenital non-infirmities in the maxillofacial area, causing violations of the number and location of teeth, forms of dental arches, bite, facial skeleton and soft facial tissues (Khoroshilkina, 1986).

- I. Congenital cleft of the upper lip (one-sided or bilateral):
 - a pink border;
 - pink border and skin without breaking the skin jumper in the tray area;
 - pink border and skin with a violation of the cutaneous ligament in the tray area.
- II. Congenital cleft of the upper lip and alveolar process (one-sided or bilateral):
 - partial;
 - complete.
- III. Congenital non-disruption of soft palate or soft and hard palate:
 - tongue of soft palate;
 - tongue and parts of the soft palate;

- the entire soft palate;
- soft and part of the hard palate (1/3, 2/3);
- the whole soft and hard palate.

IV. Hidden clefts of soft or soft and hard palate.

V. One-sided (right- or left-sided) through incision of the lip, alveolar process and palate.

VI. Two-way through non-division of the lip, alveolar process and palate.

VII. Facial clefts:

- middle;
- obliquely.

Local violations in the maxillofacial area, detected after the birth of a child, are described both in the domestic and foreign literature in the sections of surgical dentistry. Disturbances in the formation of teeth, dentition, their relationship in bite, as well as the effect of scar deformation of soft tissues after cheilo- and uranoplasty on the closing of dentition have been studied insufficiently.

Khoroshilkina and Granchuk (1986) proposed the following classification of morphological, functional and aesthetic disorders in the maxillofacial region, caused by various types of congenital non-affection.

CLEFT OF UPPER LIP, UPPER LIP AND ALVEOLAR PROCESS (ONE-SIDE OR BILATERAL)

Morphological disorders.

1. Postoperative scars and residual defects.
2. Compaction of the front portion of the upper dental arch.
3. Narrowing of the upper dentition (often asymmetrical) with unilateral non-affection, expressed mainly in the region of the upper first premolars; Expansion of the lower dental arch in the molar region.
4. The tendency to underdevelopment of the lower jaw and its retrofit.
5. Underdevelopment or adentia of the upper lateral incisor in the area of non-growth of the alveolar process.
6. The presence of supernumerary teeth in the area of cleft.
7. Rotation around the axis of the upper central incisor, bordering on non-affection, and its lateral deviation.
8. Palatine incline of incisors on the side of non-affection.
9. Dents-alveolar shortening in the region of the canine that borders on non-affection.
10. The tendency to develop caries.

Functional violations

1. Limited mobility of the upper lip, scar-altered after cheiloplasty.
2. Lack of closure of the lips due to shortening of the upper lip on the side of non-affection.
3. Laying the tip of the tongue in the area of the defect of the lip and the alveolar process.
4. Violation of biting food.

5. Incorrect swallowing.
6. Oral breathing.
7. Harmful habit of covering mouth with your hand.
8. Violation of the function of facial muscles.

Aesthetic disorders

1. Compaction of the upper lip and a violation of the shape of the face profile.
2. Violation of the upper lip pink border contour (cupid line), defect of the upper lip, its insufficient closure with the lower one.
3. Incorrect position of the upper incisors, seen with a smile.
4. Deformation of the nose wing (one-sided or two-sided).

CLEFT OF SOFT OR SOFT AND HARD PALATE

Morphological disorders.

1. Defects congenital or postoperative on soft and hard palate and scars.
2. Wrong form or absence of the soft-palate tongue.
3. Scars-modified and shortened soft palate.
4. Protrusion or retraction of anterior teeth, their close arrangement.
5. Consolidation of the upper dentition.
6. Deep incisal overlap.
7. The tendency to early carious destruction of the teeth of the upper jaw and their loss.

Functional violations.

1. Violation of the pronunciation of the sounds of speech (nasal).
2. Violation of the function of chewing.
3. Incorrect swallowing.
4. Impaired breathing.
5. Stress of facial muscles during speech and swallowing.

Aesthetic disorders.

1. Wrong position of upper frontal teeth, visible when smiling.
2. No closing of the lips.
3. Wide back of the nose.
4. Stress of facial muscles during speech, chewing, swallowing (the presence of pinholes on the skin in the rays of the back of the nose, in the tray area, in the corners of the mouth and chin).

ONE-SIDED CROSS CLEFT OF UPPER LIP, ALVEOLAR PROCESS AND PALATE

Morphological disorders.

1. Presence of postoperative scars on the upper lip, soft and hard palate.
2. Reducing the depth of the vestibule of the oral cavity on the side of non-growth, the presence of a through defect in the region of the transitional fold of the mucosa.
3. Presence of residual defects in the palate.

4. The presence of supernumerary teeth in the area of the alveolar process cleft; adentia of lateral incisors.

5. Rotation around the axis and lateral deviation of the upper central incisor bordering on cleft; presence of diastema.

6. Dento-alveolar shortening in the region of the canine bordering with cleft, and its slender-mesial arrangement.

7. Narrowing of the upper dentition, more pronounced on the side of cleft.

8. Compaction of the anterior part of the upper dental arch, palatal position of the incisors.

9. Typical irregularities in the shape of the upper dentition.

10. Folding of the tongue, the presence of the teeth crowns prints.

11. The tendency to early carious destruction of teeth and their loss.

12. The tendency to shift the lower jaw.

13. Shortening of the frenulum of the tongue.

Functional violations.

1. Limitation of mobility of the scar-modified upper lip. Impaired closure of the lips, shortening of the upper lip on the side of cleft, its partial defect.

3. Violation of speech (nasal).

4. Incorrect swallowing.

5. Oral breathing.

6. Slow chewing.

7. Harmful habit of mouth with hand covering.

8. Incorrect position of the tongue during speech and at rest (interdental position of the tip of the tongue, low position of its back).

9. Stress of facial muscles during speech and swallowing.

Aesthetic disorders.

1. Violation of the nose wing shape on the side of cleft, curvature of the nasal septum.

2. Deformation of the pink border of the upper lip, flattening of the lips, the presence of a defect, not closing of the lips.

3. Wrong position of anterior teeth, visible when smiling.

4. Concave face profile.

5. Strain of facial muscles.

BILATERAL THROUGH CLEFT OF UPPER LIP, ALVEOLAR PROCESS AND PALATE

Morphological disorders.

1. The presence of bilateral scars on the upper lip after cheyloplasty, in the palate – after uranoplasty; Deformation of the wings of the nose.

2. Reducing the depth of the vestibule of the oral cavity in the upper jaw anterior portion.

3. Anomaly of the inter-maxillary bone position or its absence.

4. Typical violations of the upper dentition shape, dental alveolar shortening in the region of the upper canines, often – and premolars.

5. Sharp, more often symmetrical, narrowing of the upper dentition, more pronounced in the region of canines and premolars.

6. Rotation around the axis of the central incisors of the upper jaw and their vestibulo-oral deviation.

7. Underdevelopment or adentia of the upper lateral incisors.

8. Presence of supernumerary teeth in the area of cleft of alveolar processes and along their margins.

9. The tendency to disrupt the development of the lower jaw.

10. Anomalies of occlusion.

Functional disturbances.

The same as in patients with unilateral through cleft of the upper lip, alveolar process and palate.

Aesthetic disorders.

Symmetrically expressed violation of the nose shape.

2. Appearance of the upper lip in the forward location of the inter-maxillary bone, its flattening or sharp during retraction, underdevelopment or absence.

3. Same as with unilateral through incision of the upper lip, alveolar process and palate.

4. Convex profile of the face with protrusion of the inter-maxillary bone; Concave – with its retraction or absence.

The proposed classification helps to identify violations, properly characterize them and choose therapeutic measures aimed at the rehabilitation of the younger generation health. Morphological disorders in patients with congenital pathology are revealed in clinical examination, as well as in the application of additional research methods: facial photos, diagnostic models of the jaw, x-ray of the teeth, jaws, facial skeleton, mastyciogram, occlusiogram. It is important to monitor the reliability of fixation of removable orthodontic devices and prostheses. As a result of weak fixation, the tooth enamel can be erased by metal parts while moving the tongue, as well as during removal and putting on the apparatus. It is not recommended to correct the device without a doctor. A strict observance of the rules for orthodontic devices using increases the effectiveness of orthodontic treatment.

ORTHODONTIC TREATMENT IN ISOLATED CONGENITAL CLEFT OF UPPER LIP AND ALVEOLAR PROCESS

If the upper lip (red border and skin) is not attached, but with the skin jumper retained in the base of the nasal opening, bite disorders are rarely observed and are expressed in the palatine deviation of the incisors in the direction of cleft. Anomalies of the individual teeth position are eliminated by a conventional technique.

If the upper lip and the alveolar process are not incised, a flattening of the anterior portion of the upper dental arch is usually observed, a rotation around the axis of the central incisor bordering on cleft, the absence of a lateral incisor and the presence of superfine teeth in the cleft area.

Orthodontic treatment includes removal of the evidence of supernumerary teeth, correction of the frontal teeth position, and replacement of the alveolar process defect and the lateral incisor by prosthetics, observation of the formation of a permanent occlusion.

ORTHODONTIC TREATMENT IN ISOLATED CLEFT OF SOFT OR SOFT AND HARD PALATE

With congenital cleft of the palate, children need constant medical supervision and assistance of specialists of various profiles. This assistance should be provided from the moment the baby is born to the full formation of the facial skeleton bones. The complex of medical measures includes the provision of surgical, orthodontic care, as well as the help of specialists of other profiles – oto-rhino-laryngologists, phoniatrists, speech therapists, pediatricians, psycho-neurologists, etc. This assistance should be comprehensive and consistent. The communication between the oral and nasal cavities available to the child when the palate is not confined makes it difficult to suck, swallow, breath, and later – speech and chewing. This defect can be closed by a surgical or a prosthetic method. If the tongue or the entire soft palate is not incised, the dento-alveolar anomalies are usually not pronounced sharply. To normalize the functions of the dento-alveolar system, growth and development of the jaws, surgical treatment (veloplasty) is indicated. When the soft and hard palate is not associated with a significant disruption of the functions of the dento-alveolar system (breathing, swallowing, speech, chewing), myodynamic balance on the part of the muscles that surround the dentition, the dentition narrows, the incisal overlap is deepened, and the location of the front teeth changes. Orthodontic treatment should be aimed at eliminating these disorders. To close the defect of the palate, obturators are used according to indications and perform an operation – uranoplasty.

ORTHODONTIC TREATMENT FOR THROUGH ONE-SIDE CLEFT OF LIP, ALVEOLAR PROCESS AND PALATE

Infant Period. With through cleft of the lip, alveolar process and palate, typical violations of the shape of the upper jaw are observed. In one-sided cleft, a small fragment of the upper jaw is displaced in the sagittal direction, and its front segment is in the oral one; a large fragment shifts toward the crevices. This breaks the symmetry of the upper jaw, flattening its front portion. An early correction of the shape of the maxilla by the McNeil method is shown.

At the child in the age of up to 3 months. The shape of the upper jaw is corrected with a plate with a screw or coffin spring and extra-oral processes (plastic or wire). With the help of elastic tract, the extra-oral processes attach to the cap. The screw or Coffin spring is positioned taking into account the direction of upper jaw fragments movement. Often apply two screws or two springs. The device is corrected after 3 days. After correcting the shape of the upper jaw, the mechanically acting apparatus is replaced with a retentive plate with extra-oral processes that are joined by an elastic pull to the cap. As the milk teeth are being erupted, a place is cut out for them. The child uses such a device before surgery – veloplasty, that is, up to 1 year 2 months. Elimination of the soft palate defect

improves the blood supply of its tissues, promotes the growth and development of bone plates of the hard palate and reduces cleft to a narrow slit. Muscles of the soft palate due to the normalization of their function after veloplasty develop better.

Period of forming and formed milk bite. After surgery, veloplastics usually produce a new retentive plate for the upper jaw, which is fixed to the cap. This plate should cover the defect of the hard palate. In process of molars eruption it is possible to refuse from extra-oral fixation of the removable device and to make the device with swept Schwarz clasps, Adams clasps or others.

Subsequent orthodontic treatment with McNeil's method consists in stimulating the growth of the upper jaw along the edges of cleft with a view to narrowing it. To do this, use a plate on the upper jaw with pelotes facing toward the edges of cleft of the palate, or with thin wire devices. They increase the pressure on the mucous membrane along the edges of cleft, causing its irritation and bone growth. Gradually, the edges of cleft approach. The plate closes the defect of the palate. To determine the width of the cleft and further observation of its decrease, an impression is obtained from the upper jaw of the child with the help of alginate or silicone impression material, mold the model and measure the width of the defect of the palate in the front, middle and back sections. After veloplasty and subsequent orthodontic treatment by McNeal, the functions of soft palate, breathing, swallowing are largely normalized, the oral and nasal cavities are disengaged, the growth of bones along the edges of cleft is stimulated, which causes its narrowing. If veloplasty is not performed, orthodontic treatment during the period of milk bite should include, for indications, an extension of the upper dentition with a screw or Coffin spring.

In the treatment of dento-alveolar anomalies at the end of the period of milk bite (5.5-6 years), measures should be taken to arrest the growth of the lower jaw in length by using a cap with a chin sling and extra-oral rubber draft. It is necessary to direct an effort to normalize the functions of the dento-alveolar system, using curative gymnastics and orthodontic devices.

Khoroshilkina (1980) applied the Frenkel function regulator of the third type for the first time to treat patients with an anomaly of the occlusion caused by one-sided congenital cleft of the upper lip, alveolar process and palate, and was convinced of its effectiveness. The use of the Frenkel method is most effective at the end of the period of the milk bite and the initial period of the mixed, that is, from 5.5 to 9 years. The advantage is given to this method in the presence of a sagittal gap between the incisors. To correct the position of the upper incisors, springs are used, which are attached to the upper limbs or side shields of the regulator.

Period of the mixed occlusion. During this period, treatment includes surgical, orthodontic, general restorative measures and training with a speech therapist. At 6-7 years, before entering school, they make uranoplasty: the second stage of the operation or radical uranoplasty. 2 weeks after the operation, the child is referred to a speech therapist. After radical uranoplasty, the arch of the palate should be formed by a wall, layered on a protective plate. After 1-1.5 months. The

plate is replaced with a removable prosthesis with missing teeth and clasps, which prevents the narrowing of the upper dentition.

During the change of milk teeth, the morphological and aesthetic disturbances are usually more pronounced as the growth of the upper jaw is broken as a result of the congenital defect and the adentia of the upper lateral incisor. The asymmetric narrowing of the upper dentition and flattening of the anterior portion of the upper dental arch is aggravated. The central incisor, bordering the cleft, erupts from the palate and deviates laterally. Often the other upper incisors also incline. The tooth-alveolar shortening becomes more pronounced in the region of the canine bordering the cleft, and also in the region of the first and second molar molars. Dents-alveolar shortening is promoted by the mesial inclination of the canine crown on the side of cleft. Detect supernumerary teeth in the area of cleft – erupted or impacted. There is a multiple carious destruction of the upper molars crowns, as well as permanent incisors and the first molars. It leads to an incorrect closing of the lateral teeth due to their mesial displacement toward the caries or lost teeth that have been destroyed. Often there is an involuntary shift of the lower jaw forward or to the side.

With age, the listed dento-alveolar disorders with unilateral cleft of the lip, alveolar bone and palate grow. The question of indications for the removal of supernumerary teeth located in the area of cleft should be resolved only after evaluating the x-ray of the upper jaw. Supernumerary teeth prevent further narrowing of the upper jaw; In this regard, during the interchangeable bite, it is desirable to preserve them. Only the destroyed supernumerary teeth and other teeth that prevent correction are to be extracted.

Children often have a frenulum of tongue shortened. Insufficient mobility of the tongue increases the listed morphological disturbances and causes an incorrect articulation of the tongue at rest and during the function. Observed pronounced functional disorders – mouth breathing, improper swallowing, speech disturbance, nibbling and food chewing, which aggravates morphological deviations. To eliminate these disorders, mechanically acting, functionally acting and functionally directing orthodontic devices are used.

The growth of the upper dental arch is stimulated with the aid of a plate for the upper jaw with sectoral cutting, clasps and devices for transferring the screw pressure to the lower jaw. With a slight reverse incisor overlap (up to 1.5 mm), the bite is increased with the same plate with occlusal patches on the lateral teeth, setting the cutting edges of the incisors at the same level. To strengthen the pressure of the screw on the upper incisors, the plate should be adjacent to their palatal side to the cutting edges. To prevent undesirable distal displacement of the lateral teeth, the action of this apparatus is combined with the use of inter-maxillary rubber thrust between the detachable plates for both jaws, and also fixes the ends of the wire brace resting on the lower front teeth and transferring pressure to them in the basis of the plate. Anomalies of the position of the upper teeth are corrected by attaching the springs to the basis of the removable apparatus for the

upper jaw or by means of a plate with a sectoral cut to move individual teeth or their groups: anterior teeth in the vestibular direction, lateral in the transversal.

For expansion of the upper jaw, use a plate with a screw or a Coffin spring with a sagittal cut. Dosing the force of the spring is more difficult than the screw, but its advantage is a continuous action.

To stop the growth of the lower jaw during the eruption of the lower first permanent molars, and then the central and lateral incisors use mechanically acting devices – a cap with the chin and an extra-oral rubber thrust. If the lower incisors are closely or slightly inclined orally, then with a sharp underdevelopment of the upper jaw to compensate for the size of the dental arches, the application of the method of successive removal of individual lower teeth according to Hotz is shown.

Expansion plate for the lower jaw with a significant narrowing of its dentition and lingual tilt of the lateral teeth has the following features: its lower edges are thickened, the occlusal lining makes occlusal patches on molar molars, and they choose varieties of clasps that prevent immersion of the plate.

In the initial period of the mixed occlusion, FR-III is effective for the treatment of mesial occlusion, as are the open activators of Klammt and the Balters bionators. It is possible to use Angles devices, rings with hooks on the upper incisors to be moved, combining them with the Brukle apparatus and the inter-maxillary rubber traction. Given the shortcomings of non-removable Angle machines (a lesion of the gingival papillae with ligatures, difficulty in caring for the oral cavity and teeth), the period of use of these devices should be shortened. To complete the treatment and retention of the results achieved, Angl's devices are replaced with removable plates with inter-maxillary rubber traction.

Period of permanent bite. The degree of morphological and functional disorders severity increases with age.

These disorders can be caused by: 1) scar deformation of the upper lip, the degree of its mobility and shortening, the possibility of closing the lips at rest, the severity of the mouth cavity in the anterior portion of the upper jaw; 2) scar deformation of the upper jaw and wing-jaw folds; 3) the mobility of the soft tissues of the soft palate, the posterior pharyngeal wall, the tongue (the degree of shortening of its frenulum), the size of the palate-pharyngeal tonsils; 4) the period of supernumerary or other teeth loss; 5) the number of rudiments of upper permanent teeth (absence of lateral incisor rudiment on the side of cleft, rudiments of upper third molars); 6) scar deformation of the nose, curvature of the nasal septum, the size of the inferior nasal concha; 7) the time of the beginning of orthodontic treatment and use of the dento-alveolar prosthesis.

Based on the study of the diagnostic models of the maxilla in the symmetroscope and the analysis of the measurement data, the main forms of the upper dentition are identified in the case of anomalies due to unilateral cleft of the upper lip, alveolar process and palate, depending on the position of fragments of the upper jaw and teeth (Khoroshilkina, 1970). In the pre-pubertal period, in connection with the eruption of the lower second permanent molars and the

physiological increase of the occlusion, the closing of the dentition worsens. This disorder is also observed in those patients whose treatment has been successfully performed during the period of the mixed occlusion and who regularly use retinal devices with inter-maxillary traction. In the absence of rudiments of one or two upper third molars at the age of 14 years and older, the growth of the upper jaw is disrupted as a result of the pressure of the scar-modified upper lip and its front portion. The growth of the lower jaw is enhanced by the flattened shape of the arch of the palate, the low position of the tongue and the eruption of the lower third permanent molars. If these rudiments have a mesial tilt of the crowns, then in the eruption their position is normalized, the mesial shift of the teeth is strengthened, which worsens the closing of the dentition, reduces the depth of the incisal overlap, leads to the appearance of a reverse overlap and a sagittal gap between the incisors. This should be taken into account when planning the sequence of complex treatment and determining the prognosis of occlusion.

Orthodontic treatment in adolescents with pronounced dento-alveolar anomalies is carried out mainly with the help of non-removable orthodontic devices Angle in combination with a plate for the lower jaw with an inclined plane and inter-maxillary traction. On improperly placed upper teeth, attach additional rings with various devices for fixing ligature bandages. To the upper arc, in its front section, metal devices are soldered for indications for fixing the upper lip pelots to them, in front of the supporting teeth are hooks for applying rubber rings in case of using the inter-maxillary thrust. Hooks on the lower arch are located in the canine region. With a sharp narrowing of the upper dentition, you can use the apparatus of Derichsweiler. On the vestibular side of the crowns for the supporting molars fix the tubes, they insert the ends of the Angle edentate arc for simultaneous correction of the position of the upper incisors by means of the inter-maxillary traction. With a close arrangement of the frontal teeth, the presence of a sagittal gap between the incisors, the congenital absence of the rudiments of the upper third permanent molars, and the normal size of the tongue, for the purpose of orthodontic treatment, separate lower teeth, usually the first permanent molars, are removed. With the help of Angles and inter-maxillary traction, the position of the teeth is corrected and the bite is normalized. Treatment of adolescents and adults is the most successful after preliminary compactosteotomy in the field of displaced teeth. In cases of excessive increase in the tongue and lower jaw, surgical intervention is indicated.

ORTHODONTIC TREATMENT IN THE DOUBLE BILATERAL CLEFT OF LIP, ALVEOLAR PROCESS AND PALATE

With this anomaly, the anterior parts of the lateral fragments of the upper jaw are displaced orally, which leads to symmetrical deformation of the upper jaw and its greatest narrowing at the level of the canines and the first molar molars. The inter-maxillary bone is usually displaced vestibularly and often turned around the axis; Its location affects the degree of narrowing of the upper jaw. The alveolar process in the canine region, as well as the molars, is shortened; In the region of

cleft of the alveolar process, there are supernumerary teeth; The ratio of jaws in mesio-distal direction is often violated.

Infant Period. Elimination of deformation of the upper jaw begins with its uneven expansion, namely: more – in the front and smaller – in the lateral. For this purpose, the McNeil method and a removable device with a screw, Coffin's spring and other devices are used to establish the lateral fragments of the maxilla and inter-maxillary in the correct position. Such an apparatus is prepared with extra-oral processes for its attachment by means of an elastic pull to the cap. The shape of the upper jaw is corrected until the child's 3-month age, then the retention apparatus is made. When the milk teeth are erupted, a place is cut out for them in the basis of the apparatus.

Milk occlusion period. After veloplasty, orthodontic treatment according to McNeil continues similarly to that with unilateral cleft of the lip, alveolar process and palate. Stimulate the growth of the upper jaw along the edges of cleft. Before the children enter school, the second stage of the operation or radical uranoplasty is carried out.

Period of the mixed occlusion. In the mixed bite, when the incisors erupting located on the inter-maxillary bones, their improper insertion manifests itself. The central incisors are turned around the axis, they are rejected orally; Lateral incisors either absent or have an irregularly formed crown and are anomalously arranged. In the area of alveolar process defect, as well as along the edges of cleft, there are usually supernumerary teeth. The bite is broken, the ratio of the lateral teeth is more often distal, in the anterior part of the dental arches – a deep incisive overlap, in the region of the upper canines and the first molars – dental alveolar shortening and often open bite.

After radical uranoplasty scar deformity of the upper jaw appears. There is a narrowing, a bilateral vestibular cross bite is formed, more pronounced in the area of dairy canines and molars. Often there are no contacts between the upper and lower canine teeth and the first molar molars.

To expand the upper jaw, use removable expansion plates with a screw or coffin spring and clasps. Use screws for uneven expansion, namely larger – in the anterior portion of the upper jaw. In the presence of resistant milk teeth, the apparatus of Derichsweiler, Levkovich is used. Depending on the location of the inter-maxillary bone and upper incisors, the method of their correction is chosen. To establish the upper permanent incisors in the denture, Angle apparatus with inter-maxillary traction is used. In the absence of inter-maxillary bone after expansion of the upper jaw, replace the defect with a removable prosthesis. After elimination of pronounced violations of the occlusion with the movable pre-maxillary bone, the use of the retention apparatus is mandatory before the milk teeth change constant. More often, a removable plate device with clasps, a vestibular arc and a bite pad in the front area is used.

Period of permanent bite. Morphological and functional disorders are aggravated with age. If the orthodontic treatment was not performed, then the deformation of the upper dentition increases. Examination of the diagnostic models

of the maxilla in the symmetric scar and analysis of their measurement data made it possible to isolate the main forms of the upper dentition in the case of anomalies caused by bilateral cleft of the upper lip, alveolar process and palate, depending on the position of the fragments of the maxilla and teeth (Khoroshilkina, 1970). The reasons for the degree of severity of morphological and functional disorders in bilateral cleft are the same as for one-sided. However, in addition to them, the direction and degree of displacement of the pre-maxillary bone or its absence and the position of lateral fragments of the maxilla are important. The inter-maxillary bone may be between the lateral fragments of the maxilla in the correct position or may be slightly displaced: the front portions of the lateral fragments of the upper jaw are located closer to the midline, the center of their rotation is in the region of the molars. Infringements of an occlusion are expressed insignificantly. Orthodontic treatment consists in uneven expansion of the narrowed sections of the upper dentition and correction of the position of the central incisors. With their carious destruction and the presence of defects in the dentition and alveolar process in the area of cleft, orthodontic treatment is completed by prosthetics. Preference is given to removable dentures.

The inter-maxillary bone can be significantly shifted forward and often turned around the axis. In this case, the front portions of the fragments of the upper jaw are significantly shifted to the midline. The opener is curved in the vertical direction, which increases the depth of the incisal overlap. Uneven expansion of the upper jaw with the help of orthodontic devices is shown and surgical treatment is a step-like osteotomy on the vomer with excision of its separate areas. With the palatal position of the inter-maxillary bone, its underdevelopment, the aesthetics of the face are sharply disturbed. Orthodontic treatment consists in uneven expansion of the upper jaw, vestibular movement of the central incisors, correction of their rotation around the axis. At the older age, the crowns of the upper central incisors are destroyed, so they are restored by prosthetics.

In cases when there is no pre-maxillary bone after the compactosteotomy, the upper dentition is enlarged, the cross bite is removed, and the defect of the upper jaw is replaced by prosthetics.

The duration of orthodontic treatment depends on the type of cleft and the degree of expressiveness of morphological and functional disorders in the maxillofacial area. Active orthodontic treatment is usually changed by the periods of retentions achieved. After the gradual application of complex orthodontic, surgical, myotherapeutic, prothetic methods of treatment, training in speech therapist and others, periods of retention of the achieved results are necessary. After treatment of dento-alveolar anomalies due to one- or two-sided cleft, such periods last until the next stage of application of the complex of medical measures. When predicting the stability of the results of complex treatment, it is necessary to take into account the degree of ossification of the skeleton and the violation of permanent teeth crowns and roots mineralization. In such patients, there is often a lack of skeleton ossification. Comparison of periods the crowns and roots of permanent teeth mineralization patients with one- and two-sided lip, alveolar bone

and palate incision with data of mean norm indicates a delay in mineralization of permanent teeth during the early replacement bite (6-8 years), which is a reflection of the general state of the organism. Such violations are an indication for lengthening the retention period of the achieved results of treatment.

With continuous bilateral cleft of the lip, alveolar process and palate, the duration of permanent molars eruption and the sequence of their eruption on the jaws are often violated, which is a reflection of the violations of their mineralization. Pay attention to the severity of mouth breathing, impaired swallowing and improper articulation of the tongue with surrounding tissues during speech, an increase in the tongue, and also of the neural throat tonsils, deformations and flattening of the arch of the palate and other abnormalities contributing to the recurrence of bite abnormalities. An orthodontist should observe such patients from the time of their birth to their old age. In adolescence, there is a need for medical genetic counseling.

DENTAL PROSTHETICS IN DEFECTS OF THE UPPER JAWS DEFINED BY THE CONGENITAL UNSTREAMED

Specialized care for a child born with a cleft of the lips and palate should be organized according to the principle of urgency. In the maternity hospital in the first hours after birth, the child is provided with an orthopedic device – an anterior plate that not only disconnects the nasal and oral cavities, but also stimulates the growth of the underdeveloped and underdeveloped fragments of the upper jaw, changing their position. After examining the infant in the presence of the neonatologist, observing the rules of aseptic with the help of elastic mass and a special spoon receive an impression from the upper jaw. To prevent asphyxiation, it is necessary to cause loud crying of the child by finger pressure on the calcaneus. The impression, as a rule, is deduced by one conglomerate. The contours of the alveolar and palatine processes of the right and left halves of the upper jaw should be accurately represented on it, the vestibular boundaries, the size, the nature and extent of the cleft, and the middle section of the hard and soft palate should be well contoured. Then cast the gypsum model and conduct its preformation in three mutually perpendicular planes.

Segments of the preformed model are interconnected by means of a plate, which is made from any base material, in the front part of which a metal fixing loop is welded along the projection of the cleft.

Ready-made apparatus is injected into the oral cavity of the child. With each sucking and swallowing movement there is a functional load that is transmitted through the preformed apparatus to incorrectly located and underdeveloped fragments of the upper jaw, as a result of which their topography is normalized and growth is stimulated.

In the case of contraindications to the impression in the maternity hospital, sets of standardized preformed orthopedic devices have been developed (Sharova). With their help, you can provide early and urgent orthopedic care for a child with cleft of any kind immediately after birth.

The standardization of preformed orthopedic devices is based on: the nondestructive topography, the degree of standing of the bone fragments of the maxilla on the side of the lesion and the opposite side in the sagittal, vertical and transversal planes, as well as the weight of the newborn's body. Taking into account the topography of cleft, 6 classes of preformed orthopedic devices are distinguished:

I class – devices for children with right-sided through cleft of the upper lip, alveolar process, hard and soft palate;

II class – devices for children with left-sided through cleft of the upper lip, alveolar process, hard and soft palate;

III class – devices for children with bilateral through cleft of the upper lip, alveolar process, hard and soft palate;

IV class – devices for children with a medial through cleft of hard and soft palate;

V class – devices for children with cleft of the lip, alveolar process and anterior part of the hard palate;

VI class – devices for children with blind one- and two-sided cleft of the lip, alveolar process, anterior section of solid and complete cleft of the soft palate.

The most rational device for treating children with one- and two-sided cleft of the lip, alveolar bone, hard and soft palate is a mechanical device with a rubber ring, designed to lower the palatine processes from the nasal cavity to the oral cavity and simultaneously change their position from vertical to horizontal. The orthopedic apparatus is collapsible and consists of two parts: a gilt-plate and a nasal pelote, connected by an elastic ring.

As the palatine processes are clear, they assume a horizontal position and gradually come into contact with the supporting loops of the nasal pelote.

Before uranoplasty, it is necessary to close the defect of the palate by prosthetics. Ilina-Markosyan theoretically substantiated the necessity of prosthetics for children with defects in teeth, dentition, and also with a congenital defect of the palate. During the feeding of infants, they insert a plate of elastic plastic covering the defect in the oral cavity, and obturators are made for children aged 3 years and older.

Chasovskaya (1972), Rubezhova (1975), Barchukov and co-authors (1980) consider it necessary to close the defect of the palate from the time of the birth of the child and to apply for this purpose a Kes obturator, called "floating". It is a plate that fits snugly against the hard palate and the bottom of the nasal cavity and closes the defect. Its posterior edge is located above the upper constrictor of the pharynx. When this muscle is reflexively contracted on the back wall of the pharynx, a swelling appears in the form of a roller (Passavan cushion) that contacts the posterior edge of the obturator, supports it, and pushes it forward. In this case, the obturator slightly shifts – "floats". Nasopharyngeal space closes when the soft palate touches the lower surface of the obturator.

Difficulties in making "floating" obturators for newborns consist in later, that in the latter the upper constrictor of the pharynx is insufficiently developed

and cannot serve as a guide for determining the location of the posterior border of the obturator. In such cases, they are guided by the location of the base of the soft-palate tongue or on the middle of the lymphoid plaque on the posterior wall of the pharynx, as recommended by Chasovskaya (1972). Between the back wall of the pharynx and the back edge of the obturator there should be a space (0.5-2 mm) for unobstructed passage of airflow with nasal breathing. This space should be increased as the muscles of the pharynx develop. The mucous membrane of the soft palate should not constantly touch the lower surface of the obturator. During the function, the soft palate, rising, closes the nasopharyngeal space.

In some cases, when manufacturing a "floating" obturator for children under 4 months of age, with a unilateral through cleft of the lip, alveolar process and palate, it is difficult to secure its fixation due to an insufficiently expressed lower nasal passage on the side of cleft. Therefore, the manufacture of obturators in such patients is postponed to 6 months of age. With insufficient function of the "floating" obturator, it is corrected by self-hardening acrylic, and then it is kept in cold water under increased pressure. Dissociation of the oral and nasal cavities with the help of an obturator protects the mucosa of the nasal cavity from food irritation, prevents otitis and related complications, normalizes the functions of swallowing, breathing, speech, chewing. The earlier children begin to use the "floating" obturator, the better they learn it and the more successfully they acquire the skills of speech. The unwanted compensatory activity of facial muscles, associated with the difficult pronunciation of speech sounds, in such children is absent. Speech becomes expressive, without a nasal hue. Gradually, the position of the tongue and the function of the muscles of the oral cavity area are normalized. The constant training of the soft palate muscles with the use of a "floating" obturator promotes their thickening. If the habitual mesial displacement of the lower jaw is observed prior to the obturator development with unilateral through cleft, then after its development the jaw is usually set in the correct position, which prevents the development of mesial occlusion.

Rubezhova (1975) developed and introduced into clinical practice a method of early orthopedic treatment of children with varieties of congenital cleft of the upper lip and palate with the help of a floating obturator, fitted to the newborn in the maternity hospital during the first hours of his life, which improves respiratory function, feeding conditions child and ensures his subsequent normal physical development.

The developed method of obturator manufacturing prevents complications when taking an impression from the upper jaw, provides a reliable fixation of the obturator and the functional formation of its nasopharyngeal part. The variety of cleft of the palate largely determines the features of the procedure for manufacturing a floating obturator. Thus, with a complete cleft of the hard and soft palate, one-and two-sided through cleft to fix the obturator should give a clear reflection of the bottom of the nasal cavity at the edge of cleft. If the soft and partially hard palate is not attached to the obturator at the edges of the cleft, a longer and more careful correction of its nasopharyngeal part is required. If the soft

palate is not inclined to ensure fixation, correction of the entire obturator should be performed. The child's obturator is developed quickly and does not depend on the variety of cleft. In the newborn period and up to 6 months after the obturator is fitted, the children calmly suck food; At the age of one year and older get used to the obturator for 2-3 days. At the age of up to one year, a follow-up examination, correction of the obturator or its replacement should be carried out once in 3 months, in the second year of life – once in 6 months; After two years – annually before the surgical plastic of the palate.

With the constant use of a floating obturator from the newborn period and its timely replacement, 95% of children have a clear and sonorous pronunciation of the sounds of speech and words. If the prosthesis is made at the age of 1 to 3 years, then only 50% of children have good speech, and after 3 years – 21%.

The use of a "floating" obturator also has disadvantages: the function of the muscles of the soft palate does not normalize, since the defect is not eliminated, but only is closed. When the muscles of the soft palate contract, cleft increases. In this regard, from a physiological point of view, more early surgical intervention is indicated – veloplasty and early orthodontic treatment according to McNeil.

Before the surgical intervention to close the crooked defect of the palate, it is recommended to make a protective plate. After uranoplasty, it serves to retain iodoform tampons, and in the future – to form the roof of the palate by layering self-hardening plastic, in the palate.

In the case of continuous non-removal (unilateral or bilateral), the defect of the alveolar process is usually combined with a defect in the dentition – the absence of a lateral incisor, and sometimes the early loss of other teeth. To replace the defect of the dentition, preference should be given to removable plate prostheses, the basis of which can be used to strengthen orthodontic devices. Prostheses with a double row of teeth in the anterior portion of the upper jaw are recommended only for adults. On the teeth located under the basis of the prosthesis or surrounded by acrylic, it is necessary to strengthen the crowns and apply a telescopic system of crowns to fix such prostheses. In these cases it is desirable to give preference to orthodontic treatment, rather than jaw prosthesis. After eliminating the deformation of the upper dentition by means of orthodontic treatment with pre-compactosteotomy, the conditions for dentition and prosthesis are improved.

The prognosis of congenital cleft different varieties treatment in the maxillofacial area is not the same. With isolated cleft of the lip, lip and alveolar process, soft or soft and hard palate, the treatment prognosis is favorable. With unilateral and bilateral congenital cleft of the lip, alveolar process and palate, it is necessary to alternate active periods of orthodontic treatment and retention periods until the end of the formation of a permanent occlusion.

The length of the retention period depends on the type of cleft and the quality of the surgical procedures performed. In the presence of dento-alveolar deformities, and the hard palate, retention apparatus should be used for the continuation of the lips, lip and alveolar process, soft and hard palate due to

isolated non-spreading, retention apparatus should be used within a year. After correcting the deformities due to a through one-sided or bilateral congenital lip, alveolar process and palate, retention devices or prostheses should be applied until the end of the permanent bite formation, and sometimes throughout life.

Materials for self-control:

A. Tasks for self-control (tables, diagrams, drawings, graphs):

1. To draw in the album a scheme of embryonic development of the maxilla-facial region.
2. To draw in the album a scheme of morphological disorders with various defects of the maxillofacial region.
3. Draw in the album a scheme of functional disorders with various defects of the maxillofacial region.
4. Draw in the album a scheme of aesthetic disorders with various defects of the maxillofacial region.

B. Tasks for self-control:

1. Optimal age for the unilateral upper lip cleft plastic is:

2.5-3 months

2-3 years

6-7 years

4 months. -12 months

4-5 months

2. Optimal age for the bilateral upper lip cleft plastic is:

3-5 months

4 months. -12 months

2,5-3 months

2-3 years

1-2 years

3. Optimal age for uranoplastic in accordance with Poltava dental school is:

3-6 years

1-3 years

4-6 months

12-14 years

7-8 years

4. Preforming appliances to the children during the period used:

aging of temporary occlusion

forming of temporary occlusion

early temporary occlusion

neonatal period

permanent dentition

5. Protective appliances are used:

- after rhinoplastics
- prior to rhinoplastics
- before cheiloplastics
- before uranoplastics
- after cheiloplastics

6. Obturators are used:

- before uranoplastics
- prior to rhinoplastics
- after rhinoplastics
- after uranoplastics
- together with uranoplastics

7. Floating obturator called by:

- Kez
- Swersey
- Ilyina-Markosian
- Kingsley
- Martin

8. Orthopedic prosthesis with redundant dentition is used in:

- period of temporary occlusion involution
- the early period of the temporary occlusion
- the period of formed temporary occlusion
- the late period of the temporary occlusion
- the permanent dentition

9. Apparatus for downgrading the palatine process consists of:

- the four parts
- one part
- two parts
- three parts
- five parts

10. The impression for fabrication of the floating obturator is made by:

- s-shaped spatula
- partial impression spoon
- full impression of the spoon
- gypsoblok
- individual impression spoons

11. Infants aging time of the first obturator must not exceed:

1-2 months
1-2 years
3 - 4 months
3-5 years
6-10 months

12. After two years of age, the obturator should be replaced each:
10-12 months
4-6 months
2-3 years
1-2 months
4-5 years

13. Formation of the maxillofacial region in the embryo begins:
in the fourth week
on the fifth week
in the first week
on the seventh week
on the sixth week

14. From the primary palate is formed:
uvula
nasal septum
the middle part of the upper lip
lateral areas of the upper jaw
cheek

15. Of the primary palate are formed:
the middle part of the upper lip
maxillary bone
the soft palate
the tongue
lateral areas of the upper lip

16. The Maxillofacial region is formed:
from the first pharyngeal arch
from the second pharyngeal arch
from the third pharyngeal arch
from the fourth pharyngeal arch
from the fifth pharyngeal arch

17. The primary palate is formed by:
medial condyle
maxillary processes

mandibular branches
medial condyle
all answers are correct

18. The secondary palate is formed:

palatine processes
all answers are correct
mandibular branches
frontal process
forward process

19. Ossification of the lower jaw ends:

to the first year of life
to six months of embryonic development
in the third month
to nine months of embryonic development
to six months of life

20. Formation of the mandibular body alveolar part in the embryo occurs:

in the seventh month
in the first month
in the third month
in the fourth month
in the sixth month

21. Formation of the maxillary body alveolar part in the embryo occurs:

in the seventh month
in the first month
in the third month
in the fourth month
in the sixth month

22. Accretion of the mandibular body alveolar part occurs:

until the fourth month of newborn period
until the third month of newborn period
until the sixth month of newborn period
until the eighth month of newborn period
until the first month of newborn period

23. Accretion of the maxillary body alveolar part occurs:

until the fourth month of newborn period
until the third month of newborn period
until the sixth month of newborn period

until the eighth month of newborn period
until the first month of newborn period

24. To the exogenous factors that lead to congenital malformations of the maxillofacial area include:

- ambient temperature
- viral embryopathy
- hypoxia
- radiation effects
- teratogenic poisons

25. To endogenous factors that lead to congenital malformations of the maxillofacial region does not apply:

- age of parents influence
- hormonal diskrescue
- biological inferiority of gametes
- heredity
- teratogenic poisons

26. From the secondary palate is formed:

- the soft palate
- incisor bone
- filtrum
- frontal part of the upper alveolar process
- alveolar processes

27. Duration of neofetal period is:

- 3 months
- 5 months
- 6 weeks
- 2 weeks
- 7 weeks

28. Severe malformations to chromosomal aberrations or mutant genes generated in the period:

- embryo
- implantation
- neofetal
- fetal
- germinal

29. Formation of hypoplasia and aplasia of the fetus occurs at the stage of development:

- implantation

neofetal period
fetal period
embryonic period
germinal period

30. In the first half of pregnancy pregnant feeding in the course of the day should be:

4 times
6 times
3 times
8 times
5 times

31. In violation of the dental system formation of the fetus an important role such external factors:

compression of the abdominal wall tight clothing
duration of daylight
temperature of the environment
duration of a meal
wrong mode of the day

32. To prevent venous stasis in the lower extremities and development of thrombophlebitis pregnant needs to move:

every 2 hours
every 6 hours
every 5 hours
every 4 hours
every 3 hours

33. Allowable weight during pregnancy is:

9-13 kg
5-6 kg
3-5 kg
6-9 kg
8-10 kg

34. High-calorie diet of the pregnant woman with an average body weight approximately should be:

2400 kcal/ day
1200 kcal/ day
3500 kcal/ day
2000 kcal/ day
4500 kcal/ day

35. Recommended dose of vitamin C during pregnancy is:

- 80 mg
- 50 mg
- 100 mg
- 120 mg
- 150 mg

36. Daily necessity of free fluid for pregnant is:

- 1.0-2.0 l
- 0.5-1.0 l
- 2.0-2.5 l
- 2.5-3.0 l
- 3.0-3.5 l

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