MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION

Federal State Autonomous Institution

higher professional education

"Kazan (Volga) Federal University"

Institute of Fundamental Medicine and Biology

Department of Dentistry and Implantology

METHODICAL DEVELOPMENT

practical training for students of the 5th course of the 10th semester in dentistry.

Topic: Diagnosis and treatment of transversal occlusion anomalies. Classification, etiology, treatment principles.

Lesson purpose. To teach students the diagnosis of various forms of vertical incisive disocclusion based on clinical examination and the use of additional research methods. To familiarize with the methods of treatment of these occlusion anomalies, with the devices used to treat them.

Lesson plan:

1. The teacher determines the initial level of knowledge of students through a survey, group discussion, testing -30 min;

2. The teacher corrects the initial level of knowledge, reveals lagging students -15 min;

3. The teacher checks the readiness of jobs, distributes students to jobs-10 min;

4. Work with literary sources. Compilation of a compendium-60 min;

5. Oral analysis of the material -120 min;

6. Testing -35 min.

Class equipment:

1. A multimedia audience with a capacity of 20 people;

2. Educational literature;

3. Visual aids: phantoms, demonstration models of the jaws, tables, diagrams, film and video films, computer presentations.

4. Dental education tools: booklets, brochures, memos, stands, exhibitions, posters, etc.

5. Control models of children of different ages with various forms of vertical anomalies of occlusion before and after treatment, OPTG, TRG.

The list of literature to prepare for the lesson.

1. Yakhina Z.Kh. Teaching aid on orthodontics for students: 2017

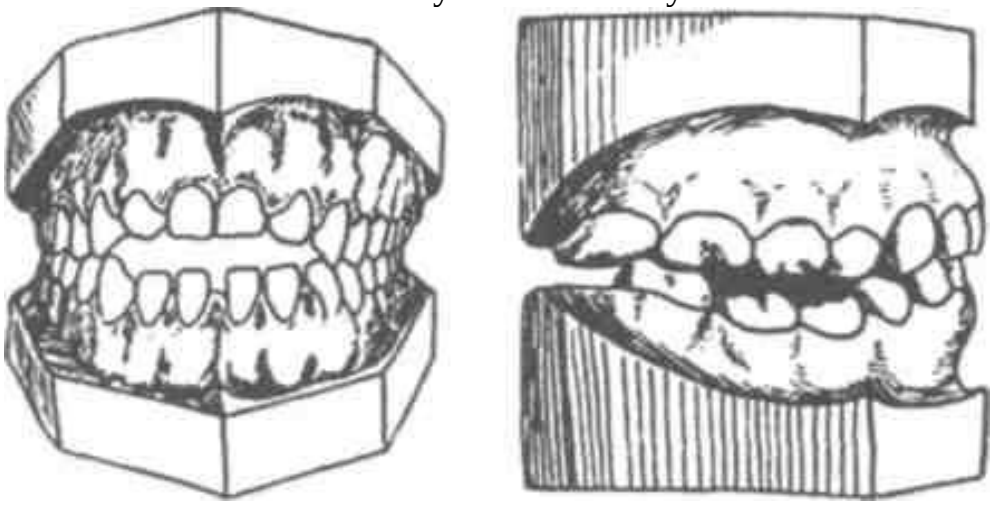
2. Khoroshilkina F.Ya., Persin L.S., Okushko-Kalashnikova V.P. Orthodontics. (Moscow, 2005, 453 pp .; ill. Bibliography p. 408-447 (542), Subject index p. 488-453 2000 copies (Code number 616.34-089.23).

3. W. Profit Modern Orthodontics 2016

4. Persin L.S. Orthodontics. Diagnosis and treatment of dentoalveolar anomalies: a Guide for doctors.-M.: Publishing House "Medicine", 2007-360s .; Il.-ISBN 5-225-04819-6.

Subject: Vertical incisive disocclusion

One of the severe anomalies of the dentition is the vertical incisive disocclusion, a sign of which is the absence of closure in the region of the anterior teeth of the upper and lower jaw. The length and size of the vertical gap can be different, which determines the severity of the anomaly.



Etiology
-heredity;
-Children's diseases, mainly rickets;
- endocrine disorders;
- macroglossia;
- Bad habits: sucking a finger, tongue, lower lip;
- mouth breathing;
- incorrect swallowing:

Children's bad habits, as a result of a quenching sucking reflex, can appear at various age periods of the development of the child’s dentofacial system. Of great importance in the occurrence of vertical disocclusion are pathological processes in the nasopharynx, in particular adenoids, which cause disturbances in nasal breathing. Polyps in the nasal cavity, curvature of the nasal septum, hypertrophy of the palatine and pharyngeal tonsils can also lead to oral breathing. This leads to a change in the position of the tongue in the mouth, i.e. from the position in the area of the dome of the hard palate, the tongue sinks to the bottom of the oral cavity, as a result of which myodynamic balance of the muscles is disturbed. Under the action of the buccal muscles, the upper jaw narrows in the lateral regions, which

leads to protrusion of the teeth in the anterior region, which are abnormally located both in the sagittal and vertical directions.
In children, often suffering from acute respiratory diseases, as well as rickets, dyspepsia, exudative diathesis, the likelihood of vertical disocclusion is much greater than in relatively healthy children.

A powerful factor in the formation of vertical incisive disocclusion is the tongue, which, located between the cutting edges of the teeth, contributes to the underdevelopment of the frontal sections of the upper and lower dentition.

Clinic

During a clinical examination of the oral cavity, there is a lack of closure of the teeth of the upper and lower jaws. The presence of a vertical gap is one of the main clinical signs of vertical disocclusion, and the severity of this anomaly is determined by its size and length.

Facial signs: the lower part of the face is lengthened, the nasolabial folds are smoothed, the upper lip is shortened, teeth are difficult to close, and the symptom of “thimble” is pronounced when the lips are closed. The angle of the lower jaw is deployed.
Intraoral signs: front or front and side teeth do not close. The size of the vertical gap can be different:
I degree up to 3 mm
II degree - 3-5 mm
III degree more than 5 mm (Persin L.S.)

By length:
I severity - only incisors do not close
II severity - incisors and fangs do not close
Grade III - incisors, fangs, premolars, and sometimes the first molars do not close.
The presence of occlusal contacts only in the area of molars.
Functional impairment.
The function of biting, chewing, speaking, breathing is impaired.

Diagnostics

Depending on the violation of the growth of the jaw bones in the frontal or lateral sections, 3 clinical and morphological varieties of vertical incisive disocclusion are distinguished:
- as a result of growth retardation of the alveolar process of the upper jaw in the anterior teeth with normally developed alveolar processes in the region of the posterior teeth;
- as a result of excessive growth of the alveolar process of the upper jaw in the region of the posterior teeth with its normal development in the region of the anterior teeth;
- as a result of growth retardation of the alveolar process of the upper jaw in the anterior teeth and its excessive growth in the region of the posterior teeth.

One more variety of vertical incisive disocclusion can be distinguished, which is caused by dentoalveolar shortening of the anterior lower jaw.
For all clinical and morphological varieties, the presence of a vertical gap is determined.
A vertical gap between the teeth is observed both during normal closure of the first permanent molars, and when their distal and mesial ratio is distal and mesial occlusion. In addition to the vertical gap between the incisors, a sagittal gap can be observed, which is characteristic of sagittal malocclusions.
The diagnosis is made on the basis of a clinical examination, photometric examination of the face, the study of diagnostic models of the jaws, orthopantomograms of the jaws, lateral TRH of the head. Based on the results of a tele-radiographic study of the head, a dentoalveolar or gnatic form is determined. The dentoalveolar form is characterized by shortening of the roots of the teeth and alveolar parts. When the gnatic form, a sharp curvature of the body of the lower jaw (convex in the lateral areas and concave in the front) with an expanded angle of the lower jaw (135-150 *) is detected.

Treatment

Treatment of vertical incisive disocclusion depends on its clinical and morphological variety, severity and formation period.

Temporary bite treatment

In the period of a temporary bite, the main objectives of the treatment are: elimination of bad habits, normalization of the tongue at rest and during function, achieving nasal breathing, closing of lips, correct swallowing and pronunciation of speech sounds. To perform these tasks, they conduct conversations with the child and his parents, explain the adverse effect of existing violations on the formation of the face. According to the testimony, plastic of a shortened frenum of the tongue is performed. Assign classes with a speech therapist and a set of exercises of therapeutic gymnastics in order to normalize the function of the dentition. To wean children from the bad habit of sucking a finger, nipple, tongue and swallowing incorrectly, MAPPI vestibular plates with a wire valve for the tongue are used - size 1 with a red ring. It is necessary to wear plates every night and 3 hours in the afternoon.

Dental treatment

In the initial period of the tooth change, the same therapeutic measures are used as during the temporary bite. To eliminate the bad habit of laying the tongue between the dentition, MAPPI vestibular plates (size 2 with a blue ring) with a wire damper are used; preorthodontic trainers: at the beginning soft and flexible initial (blue). It should be worn every day for at least 1 hour plus all night for 6-8 months.

The final trainer (pink) is used in the next 6-12 months. Preorthodontic trainers (6-10 years old) correct myofunctional bad habits and level erupted teeth. In the second clinical and morphological variety of vertical incisal disocclusion, the best result is achieved by using a base n / h plate with tongue protection and occlusal lining in the area of chewing teeth.
In the treatment of children with the third type of disocclusion in the evening and at night, the Andresen-Goipl apparatus is used, the rest of the time a plate for n / h with occlusal overlays in the area of the posterior teeth and a tongue guard.

Permanent Bite Treatment

In the period of a permanent bite, in addition to the described apparatus, it is possible to use non-removable devices - bracket systems on the upper and lower jaw with reversible arches, crowns and mouth guards with intermaxillary rubber traction. A great positive effect is the use of decortication in combination with hardware treatment. In pronounced cases, surgical intervention is recommended. With fractures of hypoplastic crowns, prosthetics are indicated. It must be emphasized that the treatment of vertical incisive disocclusion in a permanent bite is long and does not always give a positive effect. Therefore, early detection and early treatment are necessary.

test questions:

1. Decipher the term “Open Bite”.

2. What are the etiological factors leading to an open bite?

3. What are the facial signs of a distal open bite?

4. List intraoral malformations with an open bite.

5. What are functional disorders with an open bite?

6. Treatment of an open bite at different age periods of bite formation?