

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.

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

Lesson purpose. To teach students the diagnosis of various forms of transversal occlusion anomalies 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 transversal occlusion anomalies before and after treatment, OPTG, TRG.

List of literature for class preparation.

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.

Lesson content

Anomalies in the closure of the dentition in the transverse direction are called cross occlusion, in which the upper or lower dentition is located vestibularly or orally relative to the opposite dentition, which has the correct shape and normal size.

According to the classification of Persina, cross occlusion in the lateral area is divided into:

- 1) vestibulo occlusion
- 2) palatine occlusion
- 3) linguoocclusion (single and bilateral), and in the frontal section on:
 - 1) anterior cross occlusion and
 - 2) anterior cross disocclusion.

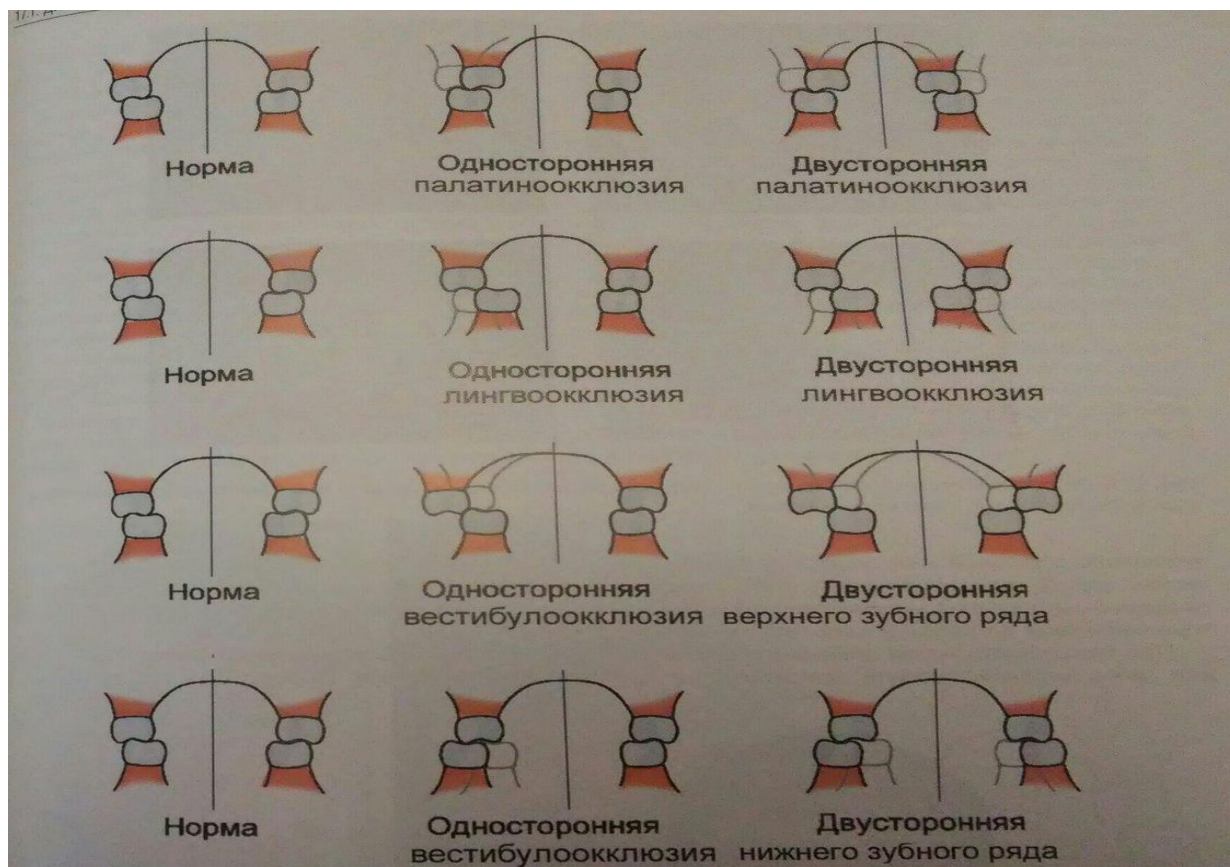


Fig. 1 Classification L.S. Persina.

Etiology: heredity, improper position of the child during sleep (on one side, putting a hand, fist under the cheek), atypical arrangement of the tooth germ and retention, delayed change of primary teeth, irregular teething, unfinished tubercles of primary teeth, uneven contact of the dentition, bruxism, hematophy of the face, trauma, inflammatory processes and the resulting jaw growth disorders, ankylosis of the temporomandibular joint, unilateral shortening or lengthening of the lower jaw branch, unilateral excessive growth of the jaw body or stunted growth, residual defects in the palate after uranoplasty, neoplasms, disturbances of calcium metabolism in the body (rickets, endocrine shifts in the body), diseases of the nasopharynx, oral type of breathing, curvature of the nasal septum, congenital malformations associated with asymmetric development jaws (cleft lip, alveolar ridge and palate, etc.), caries and its complications.

The following varieties of cross occlusion are distinguished:

- 1) dentoalveolar - narrowing or expansion of the dentoalveolar arch of one jaw, a combination of disorders on both jaws;
- 2) gnathic - narrowing or expansion of the jaw base (underdevelopment, overdevelopment);

3) articular - displacement of the lower jaw to the side (parallel to the mid-sagittal plane or diagonally).

Cross-occlusion is characterized by the following facial signs: facial asymmetry, which depends on the shape and severity of the anomaly, one- or two-sided abnormalities, the degree and extent of abnormalities in closure of the dentition, dentoalveolar or skeletal anomalies, impaired face configuration, chin shift towards the midline of the lips and chin slope.

Functional disorders in all varieties of cross occlusion:

- violation of the effectiveness of chewing;
- sometimes incorrect swallowing and blurred speech;

TMJ dysfunction;

- bruxism;
- functional masticatory muscle insufficiency due to improper relationships of antagonizing teeth;
- blocking of the lower jaw and violation of its lateral movements.

Diagnosis of cross occlusion is based on:

- clinical examination data
- history collection
- general examination, examination of the face and oral cavity;
- palpation of the TMJ when lowering and raising the lower jaw;
- measurement of tooth sizes, width of dentitions and apical bases (according to the methods of Pont, Linder-Hart, N.G. Snagina);
- studies of OPTG and TRG in direct projection.

Treatment

Treatment for cross-occlusion depends on its variety, developmental causes, and patient age. Basically, the width of the upper and lower dentitions is normalized by unilateral or bilateral expansion, narrowing, and setting the lower jaw in the correct position. Milk Bite Treatment: strengthening of the general condition of the body, normalization of nasal breathing, elimination of bad habits, sanitation of the oral cavity, grinding of unfinished tubercles of milk teeth, myogymnastics, unilateral extraoral pressure dressing in combination with uncoupling of the bite, uncoupling of the bite on crowns or mouth guards, plates with inclined planes in the lateral sections expanding plates, Andresen-Goible activators, Frenkel function regulators. In the manufacture of devices for the treatment of cross occlusion, a constructive

bite is determined: the dentition is separated on the deformation side to facilitate their expansion or contraction and the lower jaw is placed in the correct position with lateral displacement.

Replacement bite treatment: apply the same preventive and therapeutic measures as in the previous period. You can also use Katz crowns, the Dubivko apparatus with an elastic half-arc, the Engl arch with intermaxillary traction, the Basharova apparatus with a spring inclined plane.

Permanent Bite Treatment: more difficult and longer; often it is necessary to combine hardware treatment with the surgical method - removal of individual teeth, compact osteotomy, surgery. Of the orthodontic appliances, the most commonly used are mechanically acting devices: the EdgeWise technique (bracket systems), non-removable expanding devices, mini-screws, etc.

Test questions

1. Define cross-occlusion.
2. Describe the types of cross occlusion according to the classification of L.S. Persin.
3. Indicate what causes the formation of cross-occlusion.
4. List the types of cross-occlusion
5. Describe facial signs characteristic of cross occlusion.
6. Give a characteristic of palatin occlusion, lingua occlusion, vestibul occlusion.
7. List functional impairment in cross-occlusion.
8. Treatment of cross occlusion during the period of milk bite.
9. Treatment of cross occlusion during a shift bite.
10. Treatment of cross occlusion during the period of constant occlusion.