

## Modern Approach to Early Diagnosis, Clinical Course and Treatment of Transversal Occlusion in Children

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### ABSTRACT

*The number of dental anomalies and deformities in various regions of our country and other countries varies between 55.2 - 85.4%. The highest prevalence of deformities of the maxillary system is in childhood, and according to this indicator, orthodontic pathology refers to the main dental diseases after dental caries and periodontal diseases. Among patients with deformity of the maxillary system, the main category consists of patients with an anomaly of occlusion of the dentition.*

**KEYWORDS:** *Diagnosis, Children, Transversal, Treatment.*

Dental rows are accompanied by functional and cosmetic disorders that progress with the age of the child. The anomaly of occlusion of the dentition in childhood makes it difficult to bite and chew food, forms pathological changes in the temporomandibular joint, speech defects, swallowing and respiratory dysfunctions, and contributes to changes in the ENT organs, respiratory tract and digestive tract [1.3.5.7.9].

Violation of vital functions, changes in the appearance of the face and defects in sound reproduction determine the closed and unsociable nature of such patients. The development of secondary neurotic and intellectual disorders, hinders their harmonious social existence, creates certain problems with the acquisition of certain specialties and subsequent employment [2.4.6.8.10].

The data presented in the dental literature mainly relate to problems caused by a violation of the ratio of dentition in one of the three planes: sagittal, horizontal or vertical [11.13.15]. Morphological and functional changes in the dental system caused by a violation of the ratio of dentition in two or three planes have been studied. There are no data in the literature on the frequency, clinical manifestations and state of masticatory efficacy in patients with a combined form of pathological occlusion of the dentition. The question remains unanswered about the defeat of teeth by the carious process in various variants of the combined form of violation of the ratio of dentition, which makes it difficult to purposefully plan caries preventive measures. The peculiarity of speech function and the nature of possible violations of sound reproduction in patients with a combined form of dental occlusion anomaly have not been practically investigated.

Effective elimination of the violation of the ratio of dentition cannot be achieved by the medical efforts of only one specialist, the role and sequence of actions of an orthodontist, a maxillofacial surgeon, a dentist, as well as a speech therapist, who are called upon to take part in the rehabilitation of such patients, cannot be traced in the literature data.

The problems caused by the formation of a combined form of occlusion disorder are that no more than 8-14% of patients in need can count on the provision of specialized treatment, and not in full, [12.14.16.18].

Corrective measures during the period of increased physiological activity of the tissue structures of

the jaw bones and pronounced plasticity of the maxillary system are the reason that children and adolescents with a developed form of combined pathology of occlusion of the dentition move into the adult age category, when their treatment becomes problematic to an even greater extent [17.19]. Without a detailed study of the features of diagnosis, clinic, therapeutic tactics and determining the program actions of various specialists in the rehabilitation process, it is difficult to count on a positive result of eliminating such a severe pathology of the dental system, which is a combined form of the anomaly of occlusion of the dentition.

Dental caries ranks third in terms of frequency and prevalence among dental diseases of the jaw after caries and periodontal diseases [24.25.26].

From a number of scientific publications it is known that the development of tooth-jaw deformations and deformations is a polyethiological one. In particular, general etiological factors: insufficient body weight, pregnancy and birth defects, lagging behind the development of the fetus, disorders of the nervous system, infancy with various diseases, violation of food ration, mental stresses: local etiological factors - negative changes in the activity of the teeth and jaw as a result of harmful habits, improper treatment of milk teeth, early loss of milk teeth [22.23.24].

Tooth-jaw and dental deformation is the second largest among children in terms of the prevalence of dental diseases. Their diagnosis and treatment are considered one of the urgent tasks in orthodontics, as long as they affect chewing functions, leading to speech disorders, aesthetic defects and significantly reducing the quality of life, leading to the restriction of the manifestation of human potential [Кореньев, Кадукова Ю.В. 2009].

In the one-sided form of the intersecting tooth in children, an electromiographic examination of the muscles, the observation of imbalances in muscle activity, was found. A very long use of chewing with the usual side will lead to a change in the muscles of the face-jaw joint, which in turn will lead to the formation of a cut tooth. He studied the state of the musculoskeletal system in children with unilateral incisors using electromyography. The study showed that there was a discrepancy in the activity of the chewing muscles of the tooth-jaw joint. This imbalance was present even in the usual position of the lower jaw, even after the temporarily used occlusion tire. According to the authors, the cause of hypertrophy of one-sided chewing muscles is nerve-muscle injuries caused by occlusion barriers. [20.21].

In the intersecting tooth, the upper and lower jaw rows are observed to intersect with each other, as a result of the thrust of the lower jaw towards the side. This pathological condition is caused by a violation of the cosmetic condition, a violation of food chewing, as well as various pathological changes in the jaw-lower jaw. When pathological tooth decay is observed in adolescents, changes are also observed in their general psycho-emotional state. In the treatment processes, the living conditions of children and adolescents are studied by the family environment, the effect of medical psychological approaches is high.

**Purpose of the study** - To develop an effective method of early diagnosis and treatment of transversal occlusion in children.

#### **Research objectives.**

1. To study the prevalence of intersecting tooth decay in children during the period of exchange and constant tooth decay.
2. Assessment of the clinical-functional state of the oral cavity in children with intersected toothbrushes;
3. Development of early diagnosis and treatment measures for intersecting tooth decay in children.

### Object of research

During the study, orthodontic patients who applied to children's dentistry in Bukhara region will be studied. Among the patients, the causes of the origin of the prikus, prevalence and treatment methods are studied. The examination is carried out by 6 children with teeth at an intersection of 13 to 68 years of age.

### Research methods.

The examination program consists of traditional and specialized clinical examination methods and dental examination methods at all stages.

- ✓ clinical-dental examination methods
- ✓ anthropometric
- ✓ X-ray (TRG, CT, OPG)

The examined children and adolescents found that the developed forms of violation of the ratio of dentition mainly represent a combined deformation of the dental system in two and three planes. The nature of the emerging combinations and the frequency of clinical variants of the anomaly of occlusion of the dentition in two and three planes are determined. The role of the violation of the size of the jaw bones in the formation of certain variants of the combined anomaly of occlusion of the dentition has been established. The scheme for the analysis of complaints of patients and their parents is proposed, which makes it possible to highlight the special significance of emotional and social problems that form in the family of a patient with a combined form of an anomaly of occlusion of the dentition. For the first time, the degree of decrease in chewing efficiency in children and adolescents with various variants of combined anomaly of occlusion of dentition is presented. For the first time, the frequency and nature of the violation of sound reproduction in children and adolescents with a violation of the ratio of dentition were established and the peculiarity of the development of speech defects in various variants of pathological occlusion was determined[27.28.29].

The effectiveness of the rehabilitation program for children and adolescents with a combined form of the anomaly of occlusion of the dentition has been developed, tested and confirmed, including the elimination of the causative factors of the development of deformity, caries preventive measures, orthodontic hardware correction and surgical reconstruction of structural disorders of the dental system. The duration of the treatment and retention periods in the rehabilitation process is determined. Practical significance of the research results. The results of the study emphasize the need to determine the size and shape of the jaw bones, as well as their position in the skull during a comprehensive examination of patients with an anomaly of occlusion of the dentition. Orthodontic hardware correction in various variants of the combined anomaly of occlusion of the dentition, which provides for correction at the initial stage of structural disorders in the horizontal plane (cross occlusion of the dentition), then elimination of deformation in the sagittal plane (disto - or mesio-occlusion) and at the final stage restoration of the occlusal ratio of the dentition in the vertical plane (elimination of deep incisive occlusion or vertical disocclusion). The need for surgical treatment in the comprehensive rehabilitation of children and adolescents with a combined anomaly of occlusion of the dentition has been established[28.29.30].

Indications for tooth extraction, compacto - steotomy, bone reconstructive surgery on the upper and lower jaws in the treatment of children and adolescents with a combined anomaly of occlusion of the dentition. The effectiveness of the developed methods of bone grafting of the lower jaw based on planar osteotomy in the angle and branch area in eliminating deformation of the jaw bones in patients with a combined anomaly of occlusion of the dentition has been confirmed[29.30].

The introduction of new diagnostic methods into clinical practice makes it possible to conduct a series of screening tests in the Republic of Uzbekistan, as well as to prevent early detection of the disease leading to the removal of a crossed tooth. Early diagnosis of acute caries not only allows the patient to fully recover and avoid complications, but also provides a basis for rethinking the low effectiveness of traditional methods of treatment.

To improve the hygienic condition of children based on the results of the examination of the immunological and microbiological condition of the oral cavity.

Diagnosis and prevention of cross-caries in children and treatment algorithms have been developed based on the study of their mexanization.

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