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Medical and Psychological Approach in the Early Diagnosis and Treatment of Cutaneous Bite in Children

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Relevance of the study. Among dental diseases, dental caries and periodontal diseases occupy the third place in the frequency of occurrence and prevalence of dental disorders after [Sisolyatin P. G., E From the Province.A., Dergilev A. P., 2001; Azgan N., Sarikaya B., Erkarkmaz U., et al., 2010]. It is known from a number of scientific publications that the development of dentoalveolar deformities and deformations is polyethological in nature. In particular, common etiological factors: insufficient birth weight, pregnancy and birth defects, delayed fetal development, nervous system disorders, infancy with various diseases, dietary disorders, mental stress: local etiological factors - negative changes in the activity of the dental jaw as a result of bad habits, improper treatment of baby teeth, early loss of baby teeth, 2018]. Dentoalveolar and dentoalveolar deformities occupy the second place among children in terms of the prevalence of dental diseases. Their diagnosis and treatment are considered one of the urgent tasks in orthodontics, since they affect the chewing functions, lead to speech disorders, aesthetic defects and significantly reduce the quality of life, leading to a restriction of the manifestation of human potential [Korenev , Kadukova Yu.V. 2009].

In the case of a unilateral form of an intersecting tooth, electromyographic examination of the muscles and observation of an imbalance of muscle activity were found in children.Very prolonged use of chewing on the normal side will lead to changes in the muscles of the maxillofacial joint, which in turn will lead to the formation of a tooth cut. He studied the state of the musculoskeletal system in children with unilateral incisors using electromyography. The study showed that there is a discrepancy in the activity of the masticatory muscles of the dentoalveolar joint. This imbalance was present even in the normal position of the lower jaw, even after temporarily using an occlusal splint. According to the authors, the cause of hypertrophy of the unilateral masticatory muscles is neuromuscular damage caused by occlusal barriers. [Do. H. 2016].In an intersecting tooth, the upper and lower jaw rows intersect with each other as a result of the pull of the lower jaw to the side. This pathological condition is caused by a violation of the cosmetic condition, a violation of chewing food, as well as various pathological changes in the jaw-lower jaw. With pathological dental caries in adolescents, changes are also observed in their general psychoemotional state. In the treatment processes, the living conditions of children and adolescents are studied by the family environment, the effect of medical and psychological approaches is high.

Epidemiological studies, including repeated ones after a certain time period in the same regions, the prevalence of dentoalveolar anomalies (DFA) is increasing at the present stage [1.3]. Despite the fact that not all children receive the necessary orthodontic treatment, the number of people seeking orthodontic care in Uzbekistan is increasing [2.6]. Currently, treatment with an orthodontist is usually associated with the presence of a formed dentoalveolar pathology; preventive orthodontic measures are not used enough in case of premature loss of temporary teeth. Coverage of children with HFA with orthodontic treatment during the period of early replacement bite is insufficient due to late detection, although some methods of treatment of HFA in this period are included in the mandatory health insurance program [4.5]. In addition, in modern orthodontics, the effectiveness of orthodontic treatment of children during the period of replacement bite is ambiguously

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evaluated. Opponents of two-phase treatment argue that early treatment has few benefits, since most growing patients can be successfully treated in a late replacement bite, going through only one phase of treatment; in addition, children at an early age often have limited ability to cooperate with a doctor [5.7.9].Mixed bite is the period of development from the moment of eruption of the first permanent molars and incisors to the moment of change of temporary teeth. However, the chronology of the changeable bite is determined differently by different authors. A.D. Osadchy in his works will distinguish two periods in the changeable bite: early changeable bite (from 6 to 8 years) and late changeable bite (from 9 to 12 years). I. L. Zlotnik defined the same periods, but with different age criteria, in the classification, the early replacement bite corresponded to the age of 6-9 years, and the late one-10-12 years. Khoroshilkina determined the beginning of an early replacement bite by eruption in the dentition of the first permanent molar and four permanent incisors on each jaw. Late replacement bite-from the moment of eruption of premolars and permanent canines. Since by the age of 9 years, the growth rate of the jaws decreases and there is an active vertical growth of the alveolar process associated with the eruption of premolars and permanent canines. this division allows us to take into account both the rate of growth and development of the jaws and their alveolar part [7.8]. Due to the active growth and development of the dentoalveolar system during the period of replacement bite, orthodontic treatment at this stage can be divided into two main groups: correction of developing or already existing skeletal inconsistencies; correction of dental alveolar and muscular disorders. In recent years, both domestic and foreign literature has described many new methods and devices that allow for the prevention and treatment of dental anomalies in different periods of bite formation [8]. The analysis of the literature sources shows that one of the most debatable issues today is the issue of single-phase or two-phase treatment (the first phase-treatment is carried out during the period of replacement bite, the second phase – the final treatment during the period of late replacement or permanent bite using a bracket system) . Proponents of biphasic orthodontic treatment claim that treatment during the period of a replacement bite gives the doctor more opportunities to correct dental anomalies [5.9].A controlled randomized study of children aged 8-10 years with bite pathology of class II 1 of the Engl subclass showed higher self-esteem among the examined patients undergoing functional orthodontic treatment in comparison with their peers without treatment [10.11.13].So a randomized clinical trial of a teenager with severe class II occlusion disorders and a sagittal fissure greater than 7 mm did not reveal statistically significant results in the self-assessment of the examined patients at the end of the second phase of treatment. In addition, two-phase treatment did not reduce the duration of wearing non-removable equipment and did not reduce the complexity of subsequent treatment. [11.12].

A study conducted in 2003 in the UK evaluated the effectiveness of using the twin-block device for the correction of distal occlusion. Patients were monitored until the end of the second phase of treatment. The data obtained showed no difference in the 28 skeletal type of growth between children receiving single-phase or two-phase treatment. Improvements in the ratio of molars, as well as a decrease in the sagittal fissure, were obtained mainly due to dental alveolar compensation. Thus, there were no advantages in conducting two-phase treatment over single-phase treatment [10.12]. Thus, despite the conflicting views of orthodontists on early treatment, there are many different devices for correcting dental disorders at this age [13]. J. J. Mc Namara [11.13] showed that the etiology of class II occlusion is most often associated with lower retrognathia, and much less often with a violation of the position of the upper jaw. The cause of the class III anomaly can be both excessive growth of the lower jaw and underdevelopment of the upper jaw, for this reason,

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both devices for inhibiting the growth of the lower jaw and activators of the growth of the upper jaw can be used to correct this pathology.

Purpose of the study: To substantiate the principles of an integrated approach to the early diagnosis and treatment of transverse bite in children.

Research objectives:

1. To study the structure and prevalence of transverse dental caries in children with persistent caries.

2. Assessment of the medical-social and medical-psychological status of children with clubfoot.

3. Development of an algorithm for complex treatment of transverse tooth extraction in children

4. Early diagnosis of cross-caries in children and development of preventive measures.

Object of research

The study will examine 110 cross-sectional children aged 14 to 18 years living in the Bukhara region. Clinical and laboratory confirmations serve as the main criteria for selecting patients in the study group.

Research methods.

The examination program consists of traditional and specialized methods of clinical examination, as well as methods of dental examination at all stages.a) клинико-стоматологическиеметодыобследования

b) anthropometric data

C) X-ray image

d) socio-psychological

Expected scientific novelty from the research work.

For the first time in the course of scientific research, the epidemiology of cross-dental caries in children during the period of permanent caries, the risk factors leading to their formation, and the role of risk factors in the occurrence of dental anomalies were studied. During the scientific examination, the medical and psychological approach to the treatment of intersecting dental caries in children is strengthened, the effectiveness of treatment in adolescence is taken into account the sociological and psychological state. In the course of short-term and long-term observations aimed at the treatment of intersecting caries complex in children, an algorithm of measures was developed that gave a sufficient effect.The introduction of new diagnostic methods in clinical practice makes it possible to conduct a number of screening studies in the Republic of Uzbekistan, as well as to prevent early detection of the disease that leads to the removal of a crossed tooth. Early diagnosis of incisive 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.Diagnosis and prevention of cross-caries in children and treatment algorithms are developed based on the study of their mechanism.

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The most common cause of transversal anomalies is narrowing of the upper jaw or upper dentition, so the correction is aimed at one of these factors. To expand the dentition, removable plates with a screw are often used. Various screw designs are used: skelegirovannye (large and small sizes), screws with a closed body, shock-absorbing springs, tubular [11]. There are two possible types of maxillary dilation: fast and slow. With rapid expansion, the opening of the palatine suture is carried out in 2 weeks, for this purpose, the device is activated daily, after which a retention period of 3 to 4 months occurs. With slow expansion, the opening of the palatal suture is carried out in 2.5 months, and the retention period is reduced to 2 months [9]. Keeping a place in the dentition in the event of premature loss of temporary teeth is an important task during the period of replacement bite. Mesial passive displacement of the permanent first molar after the early loss of the second temporary molar can significantly contribute to the development of crowding in the lateral part of the dentition. [11]. In case of premature tooth loss, the most commonly used are: a ring with a loop to hold the place, a partial removable prosthesis to hold the place, a retainer with a distal spike, a lingual arch [10]. The need to correct crowding during the replacement bite largely depends on its degree. A slight degree of crowding in the frontal region (up to 2 mm) does not need treatment, since it is corrected spontaneously during the transition from a temporary to a mixed bite. In the case of severe crowding, approximate reduction of enamel or early removal of temporary canines in combination with separation of temporary molars is used. In the case of an extremely pronounced degree of crowding (more than 4 mm), it is possible to expand the dentition with the help of expanders or utiliti-arches. Despite the fact that this method was popular in the 90s and there was an opinion that the expansion of the dentition is more effective in the period of early mixed bite, there is no data supporting this theory. [7.8.9]. To correct the extremely severe degree of crowding during the replacement bite, the method of "sequential tooth extraction" can be used: before the eruption of permanent canines and second premolars, temporary molars are removed, and permanent first premolars are removed [7].

The main indications for the correction of diastema in a patient with a replaceable bite: violation of the general aesthetics, the position of the central incisors that slow down the eruption of the lateral incisors. Usually, for the correction of diastema during this period, a removable plate with handle-like springs or non-removable equipment is used. Diastema of up to 2 mm on the upper dentition is usually the norm and does not need orthodontic treatment, since in the absence of a deep incisor overlap, it spontaneously settles. In the case of more pronounced diastema, before starting the correction, it is necessary to check for the presence of an extra-complete tooth, a median soft tissue or intraosseous defect.The treatment of bad habits requires the joint work of both an orthodontist for the correction of malocclusion, and a psychologist for the correction of neuropsychiatric disorders. There are a large number of different devices for eliminating bad habits, a common feature of all of them is an attempt to mechanically stop the patient from sucking his finger. 32 Thus, from the above analysis, it is obvious that there is a high degree of prevalence of dentoalveolar anomalies, as well as a wide variety of orthodontic devices and treatment tactics during the period of replacement bite. All this justifies the need for a targeted epidemiological study, as well as to identify the effectiveness of various methods of treating dental anomalies and deformities at the stages of temporary, replaceable and permanent bite, which will determine not only the need for orthodontic treatment, but also create standards for its implementation for various age groups in order to introduce them into the practice of an orthodontist.

Further, the calculation of the labor intensity and cost of early orthodontic treatment, as well as treatment on the bracket system after the completion of the bite formation, was carried out. For this purpose, the analysis of the duration and frequency of visits depending

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on the type and severity of the pathology was carried out, as well as accounting for depreciation of equipment and tools of the orthodontist and dental technician, depreciation of the workplace of the orthodontist and dental technician, the cost of consumables, a set of medical products for single use at a clinical appointment, hourly wages of the orthodontist, nurse, dental technician and support staff, indirect costs per workplace. After calculating the cost of a single pathology in each of the studied age periods, the cost of treatment was analyzed in accordance with the obtained prevalence of dental anomalies, which showed the cost-effectiveness of early orthodontic treatment.

Combining clinical and economic efficiency,it can be stated that it is most rational to start treatment during the period of replacement bite crowding, displacement of teeth and cross bite. From the point of view of labor costs, the most rational choice will be in favor of non-ligature braces, while the maximum time savings occur in increasing the complexity of the anomaly. At the same time, on the cost side, the use of a ligature bracket system is somewhat cheaper, but the difference in becomes minimal with a greater severity of violations. In summary, we can note the favorable clinical impact of early treatment on the overall dental status of children, but it is more cost-effective to conduct preventive examinations by a dentist in order to identify and correct diseases. Biphasic treatment can be recommended in cases of detection of crowding, displacement of teeth and cross bite. In other pathologies, the decision on the need for treatment should be made on the basis of functional and psychological data, taking into account the fact that it may not be economically justified.

Due to the high need of children 14-18 years

1. Due to the clinical effectiveness proven in the study, early orthodontic treatment is indicated in the presence of crowding ofteeth, displacement of teeth and cross bite in children. Treatment of other types ofdentoalveolar anomalies in children with a changeable bite is justified whenthe influence of dental anomalies on psychological and functionalindicators.

2. When planning the workload of orthodontists and justifying thecost of orthodontic treatment, it is recommended to usethe calculations of its labor intensity and cost given in the study.

3. When choosing a single-phase or two-phase orthodontictreatment, it is advisable to take into account the indicators ofeconomic efficiency of the treatment of dental anomalies presented in the study.

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