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Specific Characteristics of Standard and Complex Orthodontics Treatment in Early Children with Anomalies in the Tooth-Jaw System

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Abstract Currently, the prevalence of dental jaw anomalies in orthodontic dental practice is higher than 50%, according to the World Health Organization as a whole. According to scientific research work, the rate of incidence of dental jaw abnormalities in children's age in our country is 48 - 62 %. sucks. The age related prevalence of dental-jaw abnormalities in early school age is most common among children between the ages of 3 and 6, and between the ages of 7 and 9 at school age. Among children of early school age and school age, early detection of dental jaw anomalies, study of prevalence indicators, development of effective treatment methods and implementation in practice are some of the pressing problems.

Keywords Dental-jaw abnormalities, Children of early school age and school age, Early diagnosis of dental-jawomas and complex treatment methods

1. Introduction

Effective work has been carried out among children of early school age and school age to develop methods of early diagnosis and complex treatment of dental-jawomalia, to obtain a stable aesthetic result in the treatment of orthodontic sick children, and to reduce the number of relapses. Nevertheless, existing methods of diagnosis are insufficient, creating a strong need for further methods of diagnosis and treatment. In this respect, the development of diagnostic and therapeutic measures aimed at increasing the quality indicators of orthodontic care in children of early school age and school age is becoming important in the practice of orthodontic dentistry. Today in our country, great work is being carried out on providing medical care to the population in the health system, its organization, including the radical improvement of the provision of orthodontic care in children of early school age and school age, the early diagnosis of Maxillofacial diseases in children and the Prevention of its transition to uncomplicated deformities.

The field of orthodontics began to gain significant importance in dentistry, and this trend continues today. Modern research into long-lasting efficacy in orthodontic treatment has found that many of those who undergo orthodontic treatment courses are satisfied with the results of the treatment and have seen its positive benefits. All patients, to an astonishing extent, felt dental and facial models, but almost all recognize that along with the condition of the teeth, psychological status has improved. In the last decades, many new methods and means of treatment have appeared in the field of orthodontics, which allow the orthodontist to carry out the necessary treatment and preventive measures in the early stages of the formation of the disease. However, even today, when correcting tooth-jaw disorders and deformities, while not allowing optimal results in terms of duration and quality of treatment, traditional methods have not lost their effectiveness. In assessing the effectiveness of the orthodontic treatment carried out, the following can serve as a criterion: its duration, standards of orthodontic methods and the results obtained on its stability. To carry out an effective orthodontic treatment course, it must be carefully planned. In mixed bites, orthodontic treatment is often carried out. In the case of problems of the average difficulty stage during the mixed bite period, treatment may be sufficient in eliminating all anomalies and may be carried out by a doctor-dentist in general practice. Treatment of children with serious problems is carried out in two stages: the first – during the period of mixed bites, the second – during the period of early bites on permanent teeth. Such treatment usually requires the participation of a specialist [2,4,6,8,10,12,14].

2. Results and Analyzes

If more than six months remain until the rupture of permanent premolars, it will be extremely important to maintain a place in the tooth row in the absence of the first or

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second temporary molar. Otherwise the area may remain closed until the premolars burst. The potential deficit of the place can be caused by the loss of teeth before the time, or by the passive displacement of permanent curled teeth or molars through the initial rupture of permanent molars. In children with an intermediate degree of anomaly (i.e., without skeletal changes), the Lost range can be restored by moving and changing the location of the teeth. After that, it is recommended to wear a device that will keep that intermediate place until permanent teeth crack. In the case of shortening the umuic length of the tooth row without early loss of milk teeth, a permanent cranial tooth position is observed. Aesthetics is the main advantage in the treatment of this deformity during the mixed bite period. Such treatment measures are often carried out with the desire of their parents than children. If the upper curled teeth are bent forward and the lower curled teeth do not touch each other, the protrusion of the upper curled teeth can be eliminated by slanting them using a simple device. This condition can be caused by sucking the big toe during the mixed bite period and is associated with a narrowing of the upper tooth row. Physiological adaptation in the presence of Sagittal suture is the placement of the tongue between the teeth in the process of speech and swallowing. A diastema between the teeth of the upper central cranium can present a special problem in itself. In the absence of a deep shovel tooth covering, such slits usually close on their own. However, when the upper central cranial tooth spacing is more than 2 mm, it does not close on its own. The distance maintained between the cranial teeth is related to the alveolar new tooth interval between the central cranial teeth, in which the upper lip-holding wedge is located. When correcting large-sized diastems, the retaining fibers will need to be surgically removed. In children, transverse occlusion during the period of a crossed bite occurs as a result of narrowing of the upper tooth row. If in this case the intervention of the lower jaw is observed when closing the mouth, the correction of the anomaly should be started earlier. Otherwise, treatment can be postponed for several periods, especially when there are other abnormalities that require correction at a later age. In a child with good-looking facial proportions, vertical shovel tooth dysocclusion is limited to the area of the front teeth. The main cause of this anomaly is sucking the big toe, and the main step in correcting will be the removal of a harmful habit. This requires a special changed form of the child's character and an instruction that blocks this harmful habit [1,3,5,7,9,11,13,15].

The purpose of the study is to detect the spread of dental-jaw anomalies in children's age, as well as to improve effective treatment on a par with early age-related diagnosis. Object of study. The scientific work was based on the results of research carried out during 2019-2021 in 1,066 sick children under the supervision of a dentist-orthodontist in Bukhara region Karakul, Olot, Gijduvan districts and Bukhara city children's dental clinics. The subject of the study was: Anamnesis data collected from patients and their parents who have dental –jaw abnormalities of early school age and school age. Research methods. The study used clinical, dental, anthropometric, radiological, orthopantomogram, functional and statistical analysis. As we know, parents often complain to the orthodontist reception of a cosmetic defect on the face of the child's jaw. In orthodontic problems, there are often cases when the child does not have complaints, and after it manifests itself in many cases with a violation of aesthetic appearance, there are cases when permanent teeth do not come out in time, or do not come out at all. The patient often has time to avoid permanent tooth dislocation in the jaw or when the tooth comes out of the arc row at the edge and has to give up permanent teeth to correct it. In orthodontic practice, the tactic of removing permanent teeth, such as the first or second permanent premolar, is heavily used to correct the defect. In some cases, the affected teeth are removed using rigid orthodontic tools and pulled into an orthodontic knob mounted on the most convenient surface of the crown, which is surgically open.

Figure 1. Laboratory-fabricated removable orthodontic appliances and their fitting on plaster models, designed to manage space deficiency and guide the eruption of permanent teeth

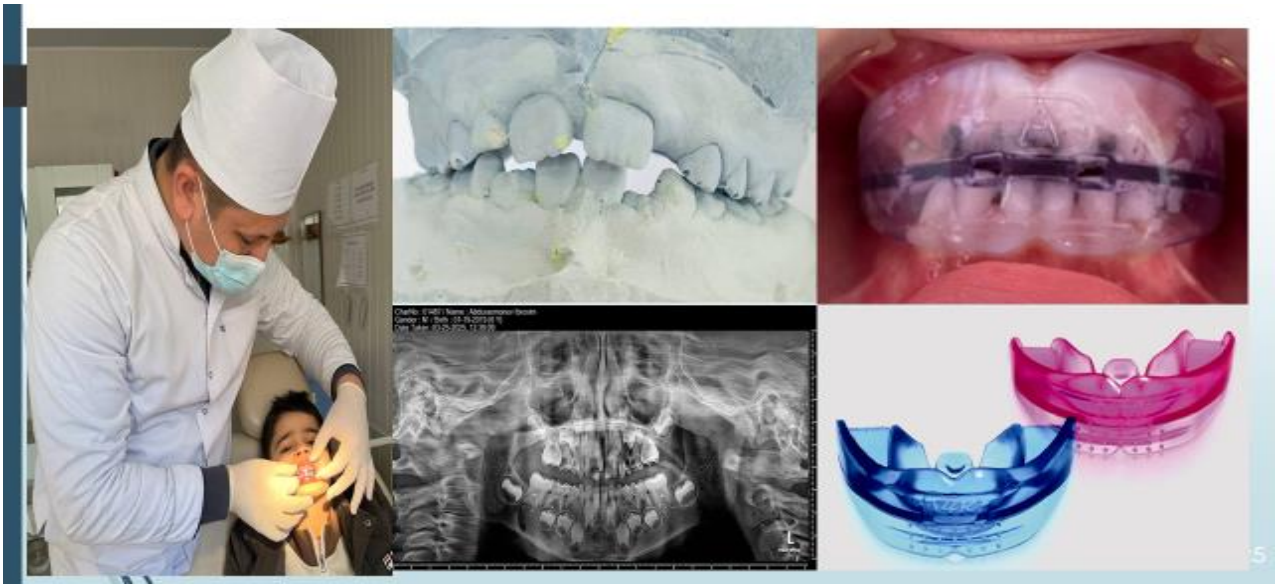

Figure 2. Clinical, radiographic, and laboratory findings in a patient with insufficient arch space during mixed dentition, including intraoral examination, plaster diagnostic models, panoramic radiograph, and removable orthodontic appliances

Figure 3. Clinical application and laboratory fabrication stages of the orthodontic appliance used to modify the direction of tooth eruption and extraction in children during the mixed dentition period

Based on the tasks of the research work, age – related treatment measures for children in comparative groups were carried out as follows: sharpening teeth without physiological suction in children 3-6 years old, jarring existing short arches under the lip and tongue, installing removable devices to prevent tooth displacement if milk teeth were removed earlier than the deadline, and traditional treatment measures based on the According to him, we applied the prostheses with a plate to take milk teeth and prophylactically remove. Short grooves, which occur as a congenital anomaly in early children, interfere with the normal growth of the lower and upper jaw, disrupting the dynamic position of the teeth, leading to dental diastema, speech disorders and subsequent bite Disorders, pathological biting. Also, in these young gurukhs, conversations were held with the parents of children with harmful habits, we sent to the children's neurologist, speech therapist and other relevant specialists.

We give the following clinical example, aimed at ensuring the timely and correct dynamic arrangement of permanent teeth in the tooth – arch series: He turned to orthodontist with complaints that the teeth were clenched in the tooth – arch row and had difficulty chewing food due to the lack of side teeth in the tooth arch. The patient underwent a full clinical-dental examination. It was also notable for violations of the timing and sequence of the exit of the premolars, the degeneration of the teeth and their shape, in particular, these disorders were more pronounced in the lower jaw. To clarify the diagnosis, photos of the face were studied in frontal and lateral projections. According to the results of orthopantomography, 15, 33, 43 teeth were found to lack space for ejection.

In diagnostic plaster models of the jaws, the width of the tooth Arches according to the pon method turned out to be less than usual in the premolar area. 3.4 mm and 4.7 mm in the upper and lower jaws, respectively, 1.6 mm and 2.5 mm

in the area of the molars. The length of the front of the upper and lower teeth was reduced by 1.0 mm and 2.5 mm, respectively, using the Korkhouse method. The results of the study showed that the anterior and lateral parts of the tooth arch do not have enough space for permanent teeth to come out. Diagnosis: neutral occlusion, deep incisors occlusion, narrowing, contraction and asymmetry of dental arches, difficult tooth eruption 15, 33, 43. Orthodontic treatment work began with the extension and extension of the dental arches using plate devices that were removable with screws. An examination every 1.5-2.0 months made it possible to monitor the dimensions of the tooth arches and the process of correcting the condition of the teeth and change the mode of use of device elements. After six months, the tightness of the teeth and the deviation of the dental arches from the norm decreased. At the same time, it was proposed that the lower temporal secondary molars remain stationary and become immobile, removing them and using a device that prevents the lower primary molars from sliding in the mesial direction and tilting their crowns distally. The distalization of the first permanent molars made it possible to create space for permanent teeth and the second premolars to come out in place. The tooth Arch had enough space for the lower right Second Premolar to protrude and palpate away from the alveolar bone crest. According to the results of orthopantomography, the 45th tooth was excessively prone to mesial error, and the roots of the 44th and 46th teeth had not fully formed.

The results of the orthopantomography confirmed that the 45th tooth could not come out independently in the jaw and that intervention was necessary to change the direction of its exit. In this regard, the crown of the problematic tooth was surgically opened and an orthodontic button was installed on it, which allows the application of an elastic pull supported by a removable plate device. The elastic chain is fastened between the button and the hook of the Spring Wire element, made of steel wire with a diameter of 0.8 mm, in the form of folds located in series along the surface of the foundation. The dosed soft elastic pull made it possible to normalize the inclination of the premolar and led to its successful release. A number of patients with difficulty extracting anterior and lateral permanent teeth received the same treatment. The devices we use are simple, relatively inexpensive, manufactured in a dental laboratory, atraumatic for use, allowing to change the direction of tooth extraction during the period of mixed bites and increase the effectiveness of orthodontic treatment in children with impaired dynamic dental conditions.

The results from the treatment work show that in age-related cases, this tactic is highly effective, and the delay in the release of permanent teeth makes it possible to carry out complex rehabilitation in children with a violation of the yok release condition, and it is advisable to use such a treatment exactly during the early mixed bite period. This leads to the formation of a physiological occlusion with small deviations from the norm of the teeth and jaw. We note that it is advisable to determine deviations in the shape and size of tooth arches in comparison with the Individual norm. The study analyzed the results of rehabilitation of 42 children in our group aged 7-9 years who applied for treatment with a complaint of misalignment of the teeth in the dental arch row. All patients selected for orthodontic treatment had gum – jaw disorders along with aesthetic and functional disorders. The configuration of the face, the proportionality of the middle and lower parts and the type of profile in most cases (86%) coincided with the type of occlusion. All patients were examined using a complex of basic (clinical) and additional (special, instrumental) research methods. The information obtained was entered into the medical card of the dental patient and supplemented with an application that describes in detail the orthodontic condition of the child. In total, 40 photographs of the face, 45 pairs of diagnostic models and 25 orthopantomograms were studied in frontal and lateral projections. The condition of temporary and permanent dental murmurs was assessed separately in each case, taking into account clinical manifestations. In 23% of children, deviations from age norms in the time and sequence of the exit of permanent teeth (V.K. Leontiev, L.P. Kiselnikova, 2010). We have identified cases of uneven resorption of the roots of temporary teeth treated in most children with temporary dental fillings after treatment for pulpitis and or periodontitis in patients and unusual standing of permanent dental murtans. Based on the results obtained, all patients were subjected to oral counting, children were trained in oral hygiene. According to indications, incurable temporary teeth were removed and practices of upper lip and or tongue frenulotomy were performed. In the process of orthodontic treatment, all year-old patients in the main group remained in our preventive examination control 3-4 times a year. The effectiveness of the use of clinical examination principles was demonstrated by a good level of oral hygiene (gi – Green -Vermillion) and a decrease in the low intensity of caries and its complications (index KPU + KP). These indicators confirmed the high level of complex therapeutic-preventive dental care provided to children.

GIS averages for Green-Vermillion and karies intensity rates for index (KPU+KP) were slightly worse than similar rates for subgroup 1A at the time of orthodontic treatment measures. However, by the end of the year of complex rehabilitation, the dental status of children in the 2A subgroup has improved. From this it can be concluded that in a child attending an orthodontic reception, it will be possible to improve the hygienic condition of the oral cavity at the same time. Or it will be convenient to take control of the condition. All patients in the group obtained for the study had dental – jaw abnormalities regardless of their location, and almost half of those who applied were with occlusion anomalies (40%). Occlusion anomalies came with anomalies in the shape and size of dental arches, anomalies in the position and development of individual teeth. At the same time, the frequency of percent detection of dental anomalies, occlusion anomalies, and combined anomalies was significantly higher ($R < 0.05$) than that of Primary Group 1 children.

By the end of the 1st year, dental anomalies in all children were practically eliminated when complex orthodontic

treatment measures were carried out in children of the two main age groups. The number of fused tooth – jaw fractures decreased. However, occlusion anomalies in some patients remained in low percentages.

3. Conclusions

The results obtained after complex orthodontic treatment showed that all children who were in the early mixed bite period, that is, who applied in the early period of age 7-9 years, and received comprehensive therapeutic and preventive dental care for a year, showed a decrease in initial gross violations in the gums.

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