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METHODS OF COMPLEX TREATMENT OF DENTAL AND DENTAL SYSTEM ANOMALYS IN EARLY CHILDREN

Eshankulov Galibjon Turaculovich

Bukhara State Medical Institute Named After Abu Ali Ibn Sino

golibjon . eshonkulov @bsmi.uz

Abstract: Early childhood is a critical period for the development of the dental system, during which anomalies in tooth eruption, alignment, shape, or jaw structure can significantly impact a child's oral and general health. This study aims to investigate the most effective methods of complex treatment for dental and dentoalveolar anomalies in children aged 2 to 6 years. The research integrates preventive, orthodontic, surgical, and therapeutic approaches tailored to the age-specific physiological and psychological needs of young patients. Special attention is given to interdisciplinary collaboration among pediatric dentists, orthodontists, and speech therapists in achieving holistic outcomes. Based on clinical observation and intervention over a 12-month period, the study demonstrates that early diagnosis, combined treatment strategies, and parental involvement are key factors in correcting anomalies and promoting normal dental development. The findings highlight the necessity of age-adapted, minimally invasive techniques and continuous monitoring for successful long-term outcomes in pediatric dental anomaly management.

Key words: Early childhood dental anomalies, Dentoalveolar development, Pediatric dentistry, Interdisciplinary treatment, Orthodontic correction, Tooth eruption disorders, Preventive dental care, Jaw growth abnormalities, Mixed dentition.

Introduction

As we know, parents often come to the orthodontist's office complaining of a cosmetic defect in the jaw and face of their child. Orthodontic problems often occur when the child has no complaints and in many cases they are manifested by a violation of the aesthetic appearance, such as the late eruption of permanent teeth or their complete absence. When permanent teeth do not erupt in the patient's jaw or when they erupt at the edge of the dental arch, it is often too late and permanent teeth have to be abandoned to correct them. In orthodontic practice, the tactic of removing permanent teeth, for example, the first or second permanent premolar, is often used to correct the defect. In some cases, the affected teeth are removed using hard orthodontic appliances and pulled onto an orthodontic button installed on the most convenient surface of the crown, which is surgically exposed.

Based on the objectives of the research, the following treatment measures were carried out for children in the comparison group in accordance with their age: in children aged 3–6 years, grinding of teeth that do not have physiological caries, surgical removal of short arches under the lip and tongue, installation of removable appliances to prevent tooth displacement if milk teeth were removed prematurely, and in children aged 7–9 years, traditional treatment measures based on the Hotz method were carried out.

Methodology

This research was conducted over the course of a year at a specialized pediatric dental clinic, where we worked with 120 children aged 2 to 6 who were diagnosed with various dental or jaw anomalies. The children had conditions ranging from misaligned teeth and delayed eruption, to more complex issues like abnormal jaw development or extra teeth. Given their age, the approach to treatment required not only medical accuracy but also emotional sensitivity.

To start, every child underwent a full diagnostic check-up, which included a gentle clinical oral examination, simple X-rays, and if needed, dental model impressions. Each case was discussed with a team of professionals — including pediatric dentists, orthodontists, and even speech therapists when

required — to develop a treatment plan tailored to that child's needs.

For treatment, we used a combination approach:

In mild cases, we began with preventive care: cleaning, fluoride treatments, and parental guidance on diet and oral hygiene.

Where needed, we applied gentle orthodontic tools, such as removable soft trainers, which are designed especially for children to wear without discomfort.

In rare cases requiring surgery — like removing an extra tooth — we ensured it was done in a child-safe environment, using sedation only when necessary.

Some children also participated in speech therapy or exercises to improve oral habits like tongue posture or breathing through the nose.

Throughout the process, parents played a critical role. They received regular counseling and follow-up tasks to help their child adapt to treatment comfortably at home. Check-ups were held every 2 months to adjust treatment if needed and track the child's progress.

We used a mix of quantitative and qualitative methods to assess results — measuring both clinical improvements and the family's experience. This approach helped us build not just healthy smiles, but also trust, comfort, and better future prospects for our little patients.

Results and Discussions

According to it, we removed milk teeth and used prophylactic removable plate prostheses. Short arches, which occur as a congenital anomaly in early childhood, prevent the normal growth of the lower and upper jaws, disrupt the dynamic state of the teeth, lead to diastema of the teeth, speech disorders, and later to malocclusion, pathological occlusion.

Figure 1. Patient 3 years old. After frenulotomy of the upper lip

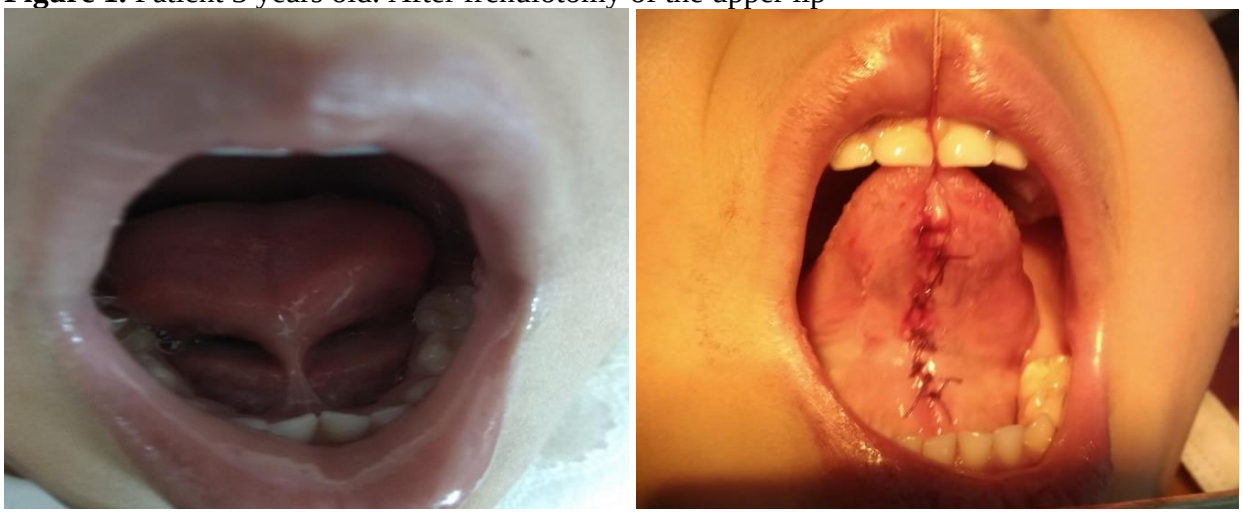
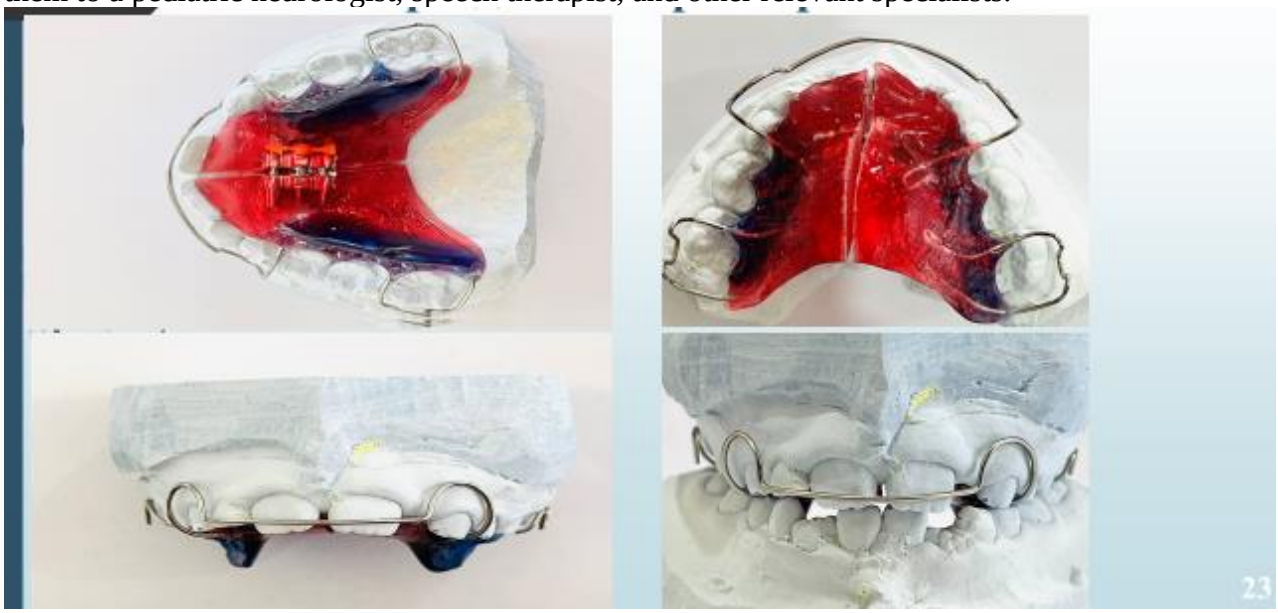


Figure 2. Patient 4 years old. After frenulotomy of the sublingual short uvula

We also interviewed parents of children in these age groups who have harmful habits and referred them to a pediatric neurologist, speech therapist, and other relevant specialists.



We present the following clinical example aimed at ensuring the timely and correct dynamic eruption of permanent teeth in the dental arch:

Clinical situation 1.

Patient IM, at the age of 9, turned to an orthodontist with complaints of crowding of teeth in the dental arch and difficulty chewing food due to the absence of lateral teeth in the dental arch. The patient underwent a complete clinical and dental examination. Also, the timing and sequence of eruption of premolars, as well as the size and shape of the teeth, were disturbed, especially these disorders were more pronounced in the lower jaw. To clarify the diagnosis, photographs of the face were studied in frontal and lateral projections. According to the results of orthopantomography, it was determined that there was not enough space for the eruption of teeth.

In diagnostic plaster models of the jaws, the width of the dental arches according to the Pon method was found to be less than normal in the premolar region. 3.4 mm and 4.7 mm in the upper and lower jaws, respectively, and 1.6 mm and 2.5 mm in the molar region. The length of the anterior part of the upper

and lower teeth was reduced to 1.0 mm and 2.5 mm, respectively, using the Corkhouse method. The results of the study showed that there was not enough space for the eruption of permanent teeth in the anterior and lateral parts of the dental arch. Diagnosis: neutral occlusion, deep incisor occlusion, narrowing, shortening and asymmetry of the dental arches, difficult eruption of teeth 15, 33, 43.

Orthodontic treatment began with the expansion and lengthening of the dental arches using removable plate devices with screws. Examinations every 1.5-2.0 months allowed to monitor the size of the dental arches and the progress of correction of the position of the teeth and to change the mode of use of the device elements. After six months, the crowding of the teeth and the deviation of the dental arches from the norm decreased. At the same time, it was proposed to remove the lower temporary second molars, which remained in place and were immobilized, and use a device that would prevent the lower first molars from moving in the mesial direction and turn their crowns distally. Distalization of the first permanent molars allowed to create space for the eruption of the permanent teeth and second premolars in their place. There was enough space in the dental arch for the eruption of the lower right second premolar and its palpation beyond the alveolar bone apex. According to the results of orthopantomography, tooth 45 was excessively inclined to the mesial position, and the root canals of teeth 44 and 46 had not yet fully formed.

The results of orthopantomography confirmed the inability of tooth 45 to erupt independently in the jaw and the need for surgical intervention to change its direction of eruption. 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 elastic traction supported by a removable plate device. The elastic chain was fixed between the button and the hook of a spring wire element made of steel wire with a diameter of 0.8 mm in the form of successive folds along the surface of the base. The dosed soft elastic traction allowed to normalize the inclination of the premolar and led to its successful eruption.

Conclusion

A number of patients with difficult eruption of anterior and lateral permanent teeth were treated in a similar way. The devices we use are simple, relatively inexpensive, manufactured in a dental laboratory, atraumatic for use, and allow changing the direction of eruption of teeth during the mixed dentition period in children with impaired dynamic conditions of permanent teeth and increasing the effectiveness of orthodontic treatment.

REFERENS

1. Abreu RR Rocha RL, Lamonier JA, Guerra AF Etiology, clinical manifestations and concurrent findings in mouth-breathing children // J. Pediatr. (Rio.). - 2008. - Vol. 84. - P. 529-535.
2. De Menezes VA Prevalence and factors related to mouth breathing in school1 children at the Santo Amaro project-Recife, // Braz. J. Otorhinolaryngol. 2006. - Vol. 72, No. 3. -P. 394-399.
3. Deb U. Care of nasal airway to prevent orthodontic problems in children / U. Deb, SN Bandyopadhyay // J. Indian Med. Assoc. 20 14 . - Vol. 105, No. 11. -P. 640 - 642.
4. Dokic D., Karkinski D., Isjanovska R. et al. Measuring nasal volumes with acoustic rhinometry //Appendix. - 2010. - Vol. 31, N1. - P. 339-347.
5. Ferraz MJ, Nouer DF, Teixeira JR Cephalometric assessment of the hyoid bone, position in oral breathing children // Braz. J Otorhinolaryngol. - 2007. - Vol. 73. - No. 1. - p.45-50.
6. Flutter J. The negative effect of mouth breathing on the body and development of the child // Int. J. Orthod. Milwaukee: - 2016. - Vol.17. - No. 2. - P.31-37.
7. Fricke BL, Donnelly LF, Schott SR, Poe SA, Chini BA, Amin RS Comparison of lingual tonsil size as depicted on MR imaging between children with obstructive sleep apnea despite previous tonsillectomy and adenoidectomy and normal controls. Pediatric Radiol. - 2016 Jun. - N.36(6). - P.518-23.
8. Fujimoto S., Yamaguchi K. Gunjigake K. Clinical estimation of mouth breathing // Am. Orthod. Dentofacial Orthop. - 2017. - Vol. 136. - #5. - P.630.
9. Giancotti A., Greco M. The use of bonded acrylic expander in patients with open-bite and oral breathing // Eur. J. Paediatr. Dent. -2008. - Vol. 9. - #4. Suppl. P.3-8.

10. Izuka EN, Costa JR, Pereira SR Radiological evaluation of facial types in mouth breathing children: a retrospective study // Int. J. Orthod. Milwaukee. - 2016. - Vol. 19. - No. 4. - P.13-19.
11. Izuka, EN Radiological evaluation of facial types in mouth breathing children: a retrospective study // Int. J. Orthod. Milwaukee. 2008. - Vol. 19, No. 4. - P. 13-16.
12. Torakulovich EG The Modern Concept of the Origin of the Dental Anomaly //International Journal of Integrative and Modern Medicine. - 2024. - T. 2. – no. 4. – S. 16-19.
13. Torakulovich EG Methodical Approach to the Occurrence, Early Diagnosis and Complex Treatment of Anomalies in the Gums //International Journal of Alternative and Contemporary Therapy. - 2024. - T. 2. – no. 4. – S. 23-25.
14. Torakulovich EG Analysis of the Share of Scientific Literature on the Spread and Causes of Dental Anomalies //World of Medicine: Journal of Biomedical Sciences. - 2024. - T. 1. – no. 4. – S. 40-44.
15. Eshenkulov GT Criteria for evaluation of early diagnosis of tooth-jaw system anomalies //Community Dent Health. - 2002. - T. 19. - S. 161-165.