

Improving the Treatment and Profiling of Deformities Caused by the Loss of Molars in Children

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Relevance of the study. Functional and cosmetic changes caused by the deformity of the dentition in children can accelerate depending on the age. Anomalies and deformities of the dentition can lead to eating disorders, chewing, changes in pronunciation, the development of pathological changes in the jaw-lower jaw, respiratory disorders and impaired function of swallowing food [1.3.7]. In most cases, as a result of early diagnosis and lack of treatment of dental anomalies in children, the occurrence of these defects and the prevention of complications is one of the most pressing problems of our time [2.4.6]. The age of the child at the time of premature removal of baby teeth, the timing of eruption of permanent teeth are essential for the formation of dentoalveolar deformities of varying severity; the number of missing teeth and the intensity of the carious process, as well as the functional group of destroyed or removed temporary teeth (Gayazov A. R., 2007). Early removal of temporary and permanent teeth is most often due to complicated caries (Gunaeva S. A., 2006; Gayazov A. R., 2007; Ikromova G. D., 2007) and is the main cause of the development of deformities of the dentition and bite (Kurlyandsky V. Yu., 1974; Vasilevskaya V. F., 1990; Bychkov V. A., 1994; Hansson O. A., 1996). Early removal of temporary teeth leads to a reduction in the length of the dentition. There is an intraosseous movement of the follicles of permanent teeth and a violation of their correct location in the dental arch during eruption, a lag in the growth of the alveolar processes of the jaws. With the loss of temporary molars, there may be a deepening of the occlusion, a distal displacement of the lower jaw, a change in the relationship between the elements of the temporomandibular joint, and a tendency to form a pathological bite. In addition, the lack of chewing teeth makes it difficult to chew, forces you to eat mainly soft food, and without load, the entire dental system develops poorly [6]. As a result of poor nutrition, the child lags behind in growth. The removal of the front teeth disrupts speech, appearance, and contributes to the occurrence of psychological trauma (Berlov A.V., 2005; Korchagina V. V., 2007). Various methods and orthopedic structures have been proposed for the replacement of dental defects in children and adolescents, but there are conflicting opinions about the effectiveness of their use and their effect on oral tissues. According to a number of authors, in recent years there is no tendency to reduce the occurrence of dentoalveolar deformities, but there is an increase in accordance with the age dynamics of these various pathological structures [Popova E. S., Bisharyan M. S. 2012]. It is known from a number of scientific publications that the development of dentoalveolar deformities and deformations is polyetiological in nature. In particular, common etiological factors: insufficient body weight at birth, 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 teeth and jaws as a result of bad habits, improper treatment of baby teeth, early loss of baby teeth, I., Shulkina N. M., 1992; Kamysheva L. I., Anikienko A. A., 1995; Al-Ghatani A. 2018]. Temporary and permanent crowns are used to cover the teeth when fixing removable dentures or orthopedic devices, cover the anterior group of teeth when they are injured, maintain the height of the bite when the baby teeth are destroyed by caries. Teeth in children for covering with temporary crowns are not treated, physiological separation is carried out, for covering with permanent crowns, minor preparation of hard tissues is necessary. To prevent the deformation of the dentition and save space for the eruption of permanent teeth, non-removable preventive

devices are used for early removal of the milk molar, premolar or first permanent molar. The devices consist of a fixing crown, an intermediate part that replaces the missing tooth, and a spacer with an occlusal or palatal overlay (Varava G. M., Strelkovsky K. M., 1979; Krishtab S. I., Strelkovsky K. M., Varava G. M., 1987; Zhelezny P. A., Plotnikova N. A., 1998; Karmalkova E. A., Kushner A. N., 2001; Trezubov V. N., Shcherbakov A. S., Fadeev R. A., 2001; Abolmasov N. G., Abolmasov N. N., Bychkov V. A., 2003; Sharova T. V., Rogozhnikov G. I., 2003; Daggal M. S., Curzon M. E. J., Fail S. A., 2006; Abolmasov N. G., Abolmasov N. N., 2008). The use of standard crowns allows you to perform prosthetics for a child in one visit, which provides the most comfortable treatment (Tokareva A.V., Kiselnikova L. P., 2010). The use of a stamped crown in clinical practice requires a mandatory laboratory stage, which increases the number of visits. However, thanks to this stage, it is possible to individually make a crown for each patient and to achieve the most accurate matching of the shape and size of the crown and the tooth. The absolute positive property of the stamped crown is the possibility of its correction (it is possible to reduce and increase its size) evenly from all surfaces. Unlike stamped crowns, standard crowns have a certain size and shape, which the doctor can adjust only in the cervical region.

Standard crowns are aesthetically pleasing due to the presence of a composite lining, which is their undoubted advantage over a stamped crown. Also, a negative property of the stamped crown is its high thermal conductivity, as a result of which the tooth may have increased sensitivity and painfully react to changes in temperature, especially in the cervical region. The cost of a stamped crown is lower than a standard crown with a composite lining. The technical solution of orthopedic structures is still controversial. It is more often recommended to use removable, frameless prostheses (Kalacheva I. A., Konstantinov A.M., 1990; Bjork A., 1955). T. M. Venatovskaya (2009) in her clinical practice used standard crowns with composite lining and stamped crowns to restore the anatomical shape of the crowns of destroyed teeth. The small size of the temporary tooth determines the complexity of technical tasks: it is necessary to accurately, quickly, and efficiently seal the defect, and in the conditions of the child's oral cavity, it is impossible to completely isolate the working field from saliva and it is quite difficult to restore the anatomical structure of the chewing surface with the help of filling materials. The crown has already formed anatomical features of the tooth and helps to solve this problem. In addition, it becomes possible to ensure the preservation of the temporary tooth until the physiological change, the correct formation of occlusal relationships, the normal development of the temporomandibular joint (Duggal M. S., Curzon M. E. J., Fail S. A., 2006). In some situations, odontological preparation when installing crowns on temporary teeth may not be carried out. The absence of the preparation process has a beneficial effect on the child, since this is the most unpleasant stage of prosthetics. In addition, the tooth enamel is preserved. The opinion of experts on the use of monolithic bridges in childhood to eliminate defects in the dentition in the absence of the first permanent molars deserves attention (Shilova G. B., 1980; Gerlach H. G., 1968). The use of bridges in the period of milk bite is also suggested. It would be a mistake to think that this concept has no negative opponents. Until now, there is an opinion that bridges in the frontal part are used starting from the age of 18, and in the lateral part-from the age of 20, i.e. after the completion of jaw growth (Kalacheva I. A., Konstantinov A.M., 1990; Bjork A., 1955; Sorokoumova G. V., 1993). Nevertheless, the question of the use of fixed bridge-like structures remains open to this day. Some experts believe that prosthetics with fixed structures have their advantages and can be used in cases where it is necessary to stabilize the results of orthodontic treatment.

At the same time, they describe "self-removal of the prosthesis" when eruption of permanent teeth under the intermediate part, considering that this prevents the negative effects of rigid fixation of the supporting teeth relative to each other. Other authors believe that the use of such structures is unacceptable, since they delay the growth of the jaws (Trezubov V. N., Shcherbakov A. S., Fadeev R. A., 2001). Sliding bridges are used in the absence of 2 to 4 incisors for children aged 10 to 16 years. The supporting part of the prosthesis is metal and combined crowns, the intermediate part is facets. The frame of the prosthesis is divided in the center into two equal parts, which are then connected by means of a pin that slides freely in the sleeve.

The aim of the study is to identify early deformities caused by the loss of molars in children, and to improve the treatment and prevention work with orthopedic prostheses, depending on the age of the child.

Research objectives:

1. Identify the causes of permanent loss of molars in children.
2. To study the age structure and prevalence of permanent molar loss in children.
3. Assessment of morphofunctional changes caused by the loss of molars in children
4. Assessment of the immunological and microbiological status of the oral cavity in children with deformities caused by the loss of molars in children
4. Development of an algorithm for complex treatment of deformities caused by the loss of molars in children
5. Early diagnosis of deformities caused by the loss of molars in children, and the development of preventive measures.

Object of research

The study examined 125 children aged 6 to 18 years, living in the Bukhara region, with deformities caused by the loss of permanent molars. 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) clinical and dental examination methods
- b) anthropometric
- C) X-ray image
- d) immunological and microbiological

Expected scientific novelty from the research work. For the first time in the course of scientific research, the epidemiology of deformities caused by the loss of permanent molars of teeth, the risk factors leading to their formation are studied, and the role of risk factors in the occurrence of dental anomalies is subsequently evaluated. During the scientific examination, an algorithm of measures for the treatment of deformities caused by the loss of permanent molars in children with orthopedic removable dentures is developed in accordance with the age of the child, and the effectiveness of treatment is increased. In children, preventive measures are developed that deform the teeth, which are caused by the loss of permanent molars.

In the studies of A. R. Gayazov (2007), almost every third child aged 3 to 6 years had defects in the dentition as a result of the removal of temporary teeth due to complicated caries. From 6 to 16 years, there was an increase in the prevalence of carious lesions from one to four of the first permanent molars to complete destruction of the crowns of the teeth from 2.45% of cases at the beginning of the change of teeth to 20.85% by 16 years. With age, the rate of removal of the first permanent molars increased from 3.71% in 6-7 years to 6.98% in 9-12 years and 9.87% in 12-16 years. The contradictory opinions about the indications for prosthetics of dentition defects in children are largely reflected in the indicators of the need for therapeutic and preventive prosthetics, which vary from 5.7% to 68.7% (Dmitrienko C. B., 1990; Sorokoumova G. V., 1993). A significant variation in the figures reflects the lack of consensus among experts on the criteria of need both in our country and abroad. In particular, this applies to the defects of the dentition in the period of replacement bite, when specialists are guided by the average age of teething, without taking into account the individual characteristics of the body and the state of the maxillofacial region as a whole (Kalacheva I. A., Konstantinov A.M., 1990; Bjork A., 1955). According to E. E. Pichuev (2004), every tenth child from the number of examined children ($10.32 \pm 0.62\%$) needs orthopedic treatment of a defect in the dentition and normalization of the shape and size of the dental arches and bite. Currently, the number of preschool children with defects in the dentition as a result of premature removal of temporary molars has increased, and therefore the need for dental prosthetics in children under the age of 6 years has increased from 14.7% to 45.4% (Sysolyatin P. G., 1989; Didenko N. M., 1997; Bulanova T. V., 2003; Borisova I. V., 2007; Bader J. D., 1995). The need to provide therapeutic and prophylactic prosthetics for children with premature loss of temporary and permanent teeth is justified by most researchers (Kipkaeva JI. B., 2000; Shkavro T. K., 2000; Tulunoglu O. et al., 2005). Various methods and orthopedic structures for the replacement of dental defects in children and adolescents have been proposed, but there are conflicting opinions about the effectiveness of their use and their effect on oral tissues. Currently, various structures can be used to restore the anatomical shape of the crowns of destroyed teeth and prosthetics of dental row defects in children (Varava G. M., Strelkovsky K. M., 1979; Krishtab S. I., Strelkovsky K. M., Varava G. M., 1987; Zhelezny P. A., Plotnikova N. A., 1998; Karmalkova E. A., Kushner A. N., 2001; Trezubov V. N., Shcherbakov A. S., Fadeev R. A., 2001; Sharova T. V., Rogozhnikov G. I., 2003; Alimova M. Ya., Alimova A.V., 2007; Tokareva A.V., Kiselnikova L. P., 2010; Kiselnikova L. P., Sedoykin A. G., Drobotko L. N., Popova I. V., Fedotov K. I., 2014; Randall R. C., 2002; Ram D., Fuks A. B., Eidelman E., 2003): temporary crowns; permanent crowns (metal, plastic, combined); non-removable preventive devices; sliding bridge prostheses; conditionally removable bridge prostheses; removable plate prostheses; prosthetic devices. The main requirements applied to such structures: materials for their manufacture must be safe and hygienic, prostheses must restore the inter-occlusal ratio of the dentition, the function of chewing and speech, the aesthetics of the face, prevent possible complications and, first of all, do not restrain the growth of the jaw bones (Varava G. M., Strelkovsky K. M., 1979; Zhelezny P. A., Plotnikova N. A., 1998; Zolotareva L. A., Zabolotskikh V. Yu., 2000; Galonsky V. G., Radkevich A. A., 2009). The most common method of children's dental prosthetics is the production of removable plate prostheses from acrylic plastics due to the availability and ease of manufacture (Alimova M. Ya., 1999; Tagvimi F., 2001; Kipkaeva JI. B., Terekhova T. N., 2002; Gayazov A. R., 2007). However, it is known that structures made of acrylic plastics of hot and cold polymerization can cause inflammatory and allergic changes in the oral organs due to the impossibility of complete polymerization of the monomer, which is a highly toxic substance and an allergen. The function of allergens in plastic can also be performed by dyes, opacifiers, plasticizers and catalysts, which are washed out by saliva or enter the oral cavity as a result of erasing the plastic during the chewing

function (Lepilin A.V., Ulyanov S. S., Suetenkov D. E., Ryzhova A.V., 2004). Which leads to deformity caused by the loss of permanent molars in children, makes it possible to prevent the disease by early detection. In children, early detection of deformities caused by the loss of permanent molars, and its preventive measures, the identification of dental anomalies and the achievement of economic thrift. The improvement of the hygienic condition is based on the results of the examination of the immunological and microbiological state of the oral cavity in deformities caused by the loss of permanent molars in children.

Based on their study, diagnostics and prevention of deformities caused by irreversible loss of molars in children, as well as treatment algorithms, have been developed.

Literature

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