Volume 2, Issue 11, November 2024 ISSN (E): 2938-3765

SURGICAL TREATMENT OF CHILDREN WITH BILATERAL CLEFT LIP AND PALATE

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Abstract

Congenital cleft lip and palate (CCLP) is a severe malformation of the dental system, which is characterized by pronounced structural and functional disorders. In this paper, the issue of surgical treatment in children with bilateral cleft lip was studied by analyzing the sources of domestic and foreign literature. It has been established that most often in patients operated on for congenital bilateral clefts of the upper lip, the following deformations of the middle third of the face, expressed in varying degrees, are encountered. It has been established that most often in patients operated on for congenital bilateral cleft lip, the following deformations of the middle third of the face, expressed in varying degrees, are encountered: discontinuity of the orbicular muscle of the mouth, as evidenced by the low mobility of the central fragment of the lip, flattening of the wings and tip of the nose, upper lips, small vestibule of the mouth in the area of the upper incisors, violation of the shape of Cupid's bow, decrease in the height of the red border, varying degrees of shortening of the columella Particularly severe secondary deformities of the maxillofacial region were observed after the use of atypical variants of cheiloplasty, as well as when using vomer osteotomy and resection of the premaxillary bone.

Keywords: bilateral congenital cleft lip and palate, columella, secondary deformities of the maxillofacial area.

Introduction

It has been proved that congenital cleft lip and palate is a severe malformation of the maxillary system, which is characterized by pronounced structural and functional disorders. Perhaps there is no other congenital deformity that significantly changes the shape of the face and leads to such

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significant anatomical and functional disorders [1,2,5,6,7,8,9,10]. Surgical treatment of congenital bilateral clefts occupies a special place in its relevance, variety of surgical methods and a variety of unresolved issues. Among the wide variety of methods of primary plastic surgery of congenital cleft lip and palate, there is currently no preference for some technique. Using new methods of surgical treatment is not always rational and does not make it possible to fully rehabilitate a child with this pathology [3,4]. An analysis of the literature of recent years shows that today more than a hundred types of cheiloplasty have been developed and applied. Each of these methods has its own positive and negative sides, which allows surgeons to individualize the methodology of the surgical approach in each case. Insufficient attention is paid in the domestic and foreign literature to the issue of primary cheiloplasty with the choice of the most optimal methods, taking into account the degree of underdevelopment of the soft tissues of the median fragment [10,11,12,13]. Despite a number of studies on improving the methods of primary cheiloplasty, the issue of comparative analysis of methods for eliminating congenital bilateral cleft of the upper lip and palate has not been given enough due attention. The relevance of the problem posed and its insufficient coverage in the scientific literature was the main motive for carrying out this work.

The Aim

To study the issue of surgical treatment in children with bilateral cleft of the upper lip by analyzing the sources of domestic and foreign literature.

Materials and methods of research: According to the literature data of foreign scientists, to evaluate the results of primary cheiloplasty in children with bilateral cleft of the upper lip, to determine the advantages and disadvantages of each operative tactic in the treatment of congenital bilateral cleft.

Results

It was found that the following deformities of the middle third of the face, expressed to varying degrees, occur most often in patients operated for congenital bilateral cleft of the upper lip: violation of the continuity of the circular muscle of the mouth, as evidenced by the low mobility of the central fragment of the lip, flattening of the wings and tip of the nose, upper lip, small vestibule of the mouth in the upper incisors, violation of the shape of the Cupid's bow, a decrease in the height of the red border, a different degree of shortening of the columella. Particularly severe secondary deformities of the maxillofacial region were observed after the use of atypical variants of cheiloplasty, as well as with the use of coulter osteotomy and resection of the jawbone [1,2,3,5,7,10,11]

Treatment of patients with congenital bilateral cleft of the upper lip and palate begins from the first days of life and continues for many years. The treatment of such patients requires the active participation of many specialists: maxillofacial surgeon, orthodontist, therapist, speech therapist, otorhinolaryngologist (Kislykh F.I., 2007; Lavrikov V.G., 2007; Subkhanov S.S., 2010; Dai L., 2010; Ness A.R. et al., 2015). G.V. Gonchakov (2002) believes that the treatment of children with congenital clefts of the upper lip and palate is one of the most difficult tasks of reconstructive surgery of childhood, the solution of which is not limited to the elimination of a cosmetic defect

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and reconstruction of facial proportions close to normal. The priority in the surgical treatment of cleft lip and palate is to restore the correct relationship of anatomical structures, which contributes to a more perfect normalization of speech and hearing. (Davydov B.N., 1999, Medvedeva M.A., 2007; Mammadov Ad.A., 1995-2012). According to the statement of Ad.A. Mammadova (1995-2012) in recent years, special attention has been paid to the full restoration of not only anatomical structures, but also functions with minimal traumatic effect of surgical manipulations on the subsequent growth of the facial skeleton. According to the opinion of the majority of specialists in primary cheiloplasty, the surgeon should:

•Ensure the symmetry of Cupid's bow.

• Restore the integrity of the circular muscle of the mouth.

• Create the same height of the skin of the lip and the red border.

•Restore filtrum columns.

• Achieve the same perimeter of the nostrils.

• Create a sufficient depth of the vestibule of the oral cavity.

It is also necessary to ensure that the upper lip looks natural both at rest and in motion. Therefore, in primary cheiloplasty, it is very important, as far as possible, to ensure the physiological location of the fibers of the circular muscle of the mouth (V.G. Lavrikov, 1975; L.E. Frolova, 1986; I.A. Kozin, 1996; K.W. Butow, 1998; D.R. Millard, 1990; T.A. Cook, R.E. Davis, 1993).

Surgical treatment of congenital bilateral clefts occupies a special place in its relevance, variety of surgical methods and a variety of unresolved issues. Among the wide variety of methods of primary plastic surgery of congenital cleft lip and palate, there is currently no preference for any one technique. The use of new methods of surgical treatment is not always rational and does not make it possible to fully rehabilitate a child with this pathology (Kozin I. A., 1996; Ad.A. Mammadov, 2012) Currently, there is a clear trend towards early plastic surgery of the upper lip. This approach reduces the period of maladaptation of the child, reduces or eliminates the "burden" of disability, creates equal conditions in all areas of the child's later life, which is very important. Any variant of upper lip plastic surgery refers to the most complex reconstructive and reconstructive operations that require special training of the surgeon, provision of appropriate anesthetic aids and postoperative care. It is advisable to perform these operations only in the conditions of specialized children's maxillofacial hospitals. There is also an opinion about carrying out early, sparing operations in the volume of primary heylorinoplasty (B.N. Davydov, 2000), periostoplasty (L.V. Ageeva, 1999). According to these authors, the number of children in need of secondary rhinocheiloplasty is significantly reduced in the future. Consequently, the trend of the present time can be defined as the expansion of the scope of surgical intervention, its implementation in a gentle way and at an early age. Any variant of reconstructive surgery on the upper lip with any variant of cleft can be carried out from the birth of a child, but the intervention must be justified by social indications. Starting from 3-6 months and until the end of the first year of life, cheiloplasty should be performed in full. Many authors consider the age of 5-6 months to be optimal. All types of lip plasty are performed in one stage. There is a point of view of L.K. Gubina (2000), that lip adhesion should precede cheiloplasty, which positively affects the location of the split alveolar part of the upper jaw, creates better conditions for feeding a child. Lip adhesion is performed in the first month of life, and the main operation is also performed after 3-6 months

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of the first year of the child's life. In congenital bilateral cleft, anatomical disorders are characterized by deeper changes due to the presence of three fragments of the lip, splitting of the alveolar part also into three fragments and unstable displacement anteriorly and downwards of the middle fragment (the interdigital bone). The choice of the cheiloplasty method, its implementation in one or two stages depends on the depth of anatomical changes. Without denying the possibility of one-stage treatment, including the technique of primary rhinocheiloplasty (Shcheglova A.P., 1997; Davydov B.N., 2006), it is believed that the grounds for two-stage treatment are the presence of a wide cleft on each side, underdevelopment of the middle fragment of the lip (filtrum) and a significant displacement anteriorly and downwards of the interdigital bone. Full social adaptation is possible only if adequate surgical treatment is carried out early enough. With bilateral cleft lip and palate, pronounced protrusion of the jawbone and medial displacement of the lateral fragments of the alveolar process are most often noted, which creates unfavorable conditions for the healing of the surgical wound after simultaneous cheiloplasty. Healing under conditions of pronounced tissue tension is accompanied by local hypoxia, which is fraught with divergence of the postoperative wound with subsequent pathological scarring of the skin and especially muscle tissue. It is possible to solve these problems only with timely, early orthopedic treatment, which consists in eliminating the protrusion of the jawbone and the expansion of the lateral fragments of the alveolar process of the upper jaw. Elimination of deformation of the alveolar process of the upper jaw with bilateral cleft is currently one of the most difficult tasks for an orthodontist (Dolgopolova G.V., 2001; Murtazaev S.M., 2010; Graber X., 2008). Bilateral incomplete and complete cleft of the upper lip anatomically divide the lip into three parts, accompanied by shortening of the septum, flattening and outward displacement of the wings of the nose. Lip restoration is performed taking into account the height of the middle part of the lip, the degree of displacement of the interdigital bone, deformation of the cartilaginous skeleton of the nose. In cases where the middle part is sufficient in height and the jawbone is slightly displaced, plastic surgery is performed simultaneously. With insufficient height of the middle part of the lip and its attachment sometimes almost at the tip of the nose, a significant displacement of the interdigital bone anteriorly, wide lateral slit defects, the operation is performed in two stages (Kozin I.A., 1996; Mammadov Ad.A., 1995-2012). There are many methods of cheiloplasty of both unilateral and bilateral non-junctions (p. Tennyson, S. Hagedorn, A. Le Mesurier, A.A. Limberg, L.M. Obukhova, D. Millard, K. Kobus, L.V. Kharkov-L.N. Yakovenko, etc.), most of them are only of historical interest. They are divided depending on the cutting of fabrics into Z-shaped, linear, rectangular. But they all pursue one goal - to restore the anatomical integrity of the elements of the lip (red border, columns, nasal passage, muscles, vestibule of the oral cavity) and its functional consistency.

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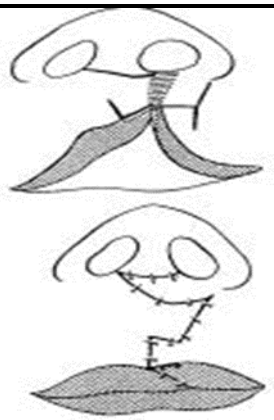

Fig. 1. The method of primary cheiloplasty according to Millard and Lemesurier.

In case of bilateral clefts of the upper lip with a sufficient height of the middle part and a slight displacement of the jawbone, the method of primary cheiloplasty proposed by A. A. Limberg (1926) is an appropriate method of plastic surgery. Limberg performed cheiloplasty simultaneously with bilateral non-junctions of the lip, observing all the details of unilateral cheiloplasty on each side. At the same time, the "proboscis" was used to create the middle part of the lip. On the side fragments, he cut out the same flaps (Miro and Limberg), as with unilateral non-fusion, and connected them with the median one according to the same calculations. To form the central tubercle of the lip, I used the fabric of a Miro flap on both sides. With bilateral symmetrical clefts of the upper lip, for simultaneous elongation of the shortened middle part, a number of authors use triangular flaps on the Obukhovaya, quadrangular flaps from the lateral parts of the lip according to the Mesurier type. However, these techniques often lead to excessive lip height and are not accompanied by correction of shortening of the nasal septum and flattening of the cartilage of the nasal wing. During cheiloplasty by the Limberg method in the modification of Shinbirev (1964), the median fragment of the lip is cut along the Limberg. On the side fragments of the lip, the flaps of the Limberg are cut out at the top and a section of the lip is excised. At the bottom, quadrangular flaps of the Miro type are formed through the entire thickness of the lip. These patches, sewn along the middle line, better restore the length of the lip. Davydov B. N., Novoselov R. D. (1977) developed a method of primary bilateral rhinocheiloplasty for bilateral symmetrical incomplete and complete cleft of the upper lip without significant displacement of the jawbone and with small defects of the alveolar process. Bilateral cheiloplasty by the Millard method (1976) is performed in three stages. On the first two, with an interval of one month, the lip defect is eliminated by the Vo method. At the third stage, by using a fork-shaped flap from the lip along the Millard, the nasal septum is lengthened. Frolova L.E. (1962) points out that the scars from the moving counter triangles located in the upper part of the filtrum are less noticeable, but in this place a shortage of tissues and suture tension can be created. Jeanty M. (1964) believes that the Millard method should be used for partial, incomplete cleft of the upper lip and palate. In the case of wide unilateral crevices, the Tennison method is recommended.

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Conclusion

Thus, the linear Millard and Limberg methods used in primary cheiloplasty and the Obukhova-Tennyson technique, with the right choice of indications for their implementation, can successfully restore the anatomical and functional integrity of the defect zone. To choose the technique of bilateral primary cheiloplasty, the determining factor is the degree of underdevelopment of soft tissues the middle fragment. When the soft tissues of the median fragment are underdeveloped by 2/3 of its height, the most acceptable method of moving the triangular flap along the Obukhovaya-Tennyson, which gives the best results, taking into account the restoration of the correct Cupid's bow and the anatomical integrity of the upper lip with normalization of the mobility of the circular muscle of the mouth.

In children with congenital bilateral cleft of the upper lip and palate with underdevelopment of the soft tissues of the median fragment by 1/3 or 1/2 of its height, it is advisable to use linear Millard methods and Limberg. At the same time, less noticeable scars are observed and the tissues of the upper lip are preserved as much as possible, which is the key to the successful completion of the final reconstructive operation in adult patients.

In recent years, orthodontic devices of various designs have been used in Uzbekistan to correct dental anomalies and deformities in congenital pathology in early childhood

Therefore, when performing primary lip surgery, the surgeon faces the task of choosing the right cheiloplasty method, on which the growth and development of the middle zone of the face, the formation of the human appearance and the effectiveness of the final cheilorinoplasty in adults and adolescents largely depend. At the same time, in our opinion, such important points should be taken into account, which will dictate the choice of the method of primary cheiloplasty, the stage of operations as the state of the central fragment of the upper lip of the prolabium, the degree of protrusion of the jawbone, the distance between the lateral fragments of the upper lip and the jawbone. [1,3,4,5,8,9]

Conclusions:

1. An anthropometric study of models of the upper jaw in patients with bilateral cleft of the upper lip and palate showed that when using simultaneous cheiloplasty by Kozlyuk, patients have a retraction position of the interjawbone, an expansion of the jaw width in distal and normalization at the level of mesial groups of teeth; in patients operated by two-stage Limberg cheiloplasty, both in the near and in the long term, there is a protrusion position of the interdigital bone, a lag in growth in other parameters in the sagittal plane, an expansion of the jaw width at the distal level and a narrowing in the mesial groups of teeth; after two-stage Millard cheiloplasty, normalization of the position is observed in the near term after surgery the jawbone sagittally, the expansion of the jaw in the area of the distal groups of teeth.

2. With bilateral through-cleft upper lip and palate with hypoplasized prolabium, the Millard two-stage cheiloplasty method is the most justified and anatomically justified due to more effective restoration of the integrity of the circular muscle of the mouth, the growth of the prolabium, which positively affects the position of the jawbone and lateral fragments.

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