

Evaluation of the Results of Primary Cheiloplasty in Children with Congenital Bilateral Cleft Lip and Palate

Rajabov Amirjon Axtamovich

Assistant of the Department of Pediatric Dentistry of the Bukhara State Medical Institute

ABSTRACT

Comparative estimation of the results of primary labioplasty has been held on a new lesser clinical material; statements to usage of each method inclusive of anatomic and aesthetic results have been defined. Clinical-anatomic changes have been established after various methods of primary labioplasty which allowed proving the choice of operation method inclusive of the degree and form of rhytisma.

KEYWORDS: *Bilateral, Palate, Children.*

The problem of congenital cleft lip and palate remains quite relevant in modern dentistry. This is due to the high frequency of these malformations, the severity of anatomical disorders, the ambiguity of approaches to correction, the complexity of treatment, and the ever-increasing requirements for functional and aesthetic results of surgical intervention [1, 2, 5, and 10].

Surgical treatment of congenital bilateral clefts occupies a special place in its relevance, variety of surgical methods and many unresolved issues. Among the wide variety of methods of primary pasty 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 [3,4].

An analysis of the literature of recent years shows that today more than a hundred types of cheiloplasty have been developed and are being used. Each of these methods has its positive and negative aspects, which allows surgeons to individualize the method of the surgical approach in each specific case [7, 8].

Despite a number of studies on improving the methods of primary cheiloplasty, the issue of a comparative analysis of methods for eliminating congenital bilateral cleft lip and palate has not been given sufficient attention. The relevance of the problem posed and its insufficient coverage in the scientific literature was the main motive for the implementation of this work. [5,6,9].

Purpose of the study- conducting a comparative analysis of the long-term results of primary cheiloplasty according to the Limberg, Millard and Obukhova-Tennyson methods, to determine the indications for their use, taking into account the degree of underdevelopment of the soft tissues of the median fragment.

Material and research methods. The material for our study was the results of surgical treatment of children with congenital bilateral cleft lip and palate. Under supervision and treatment in the Department of Maxillofacial Surgery of the Bukhara Regional Hospital and in the ENT Department of the Regional Children's Hospital for the period from 2019 to 2022, there were 31 patients with congenital bilateral cleft lip and palate, aged from 6 months to 6 years. Of these, 19 boys, 12 girls. Of the total number of children with congenital cleft lip and palate, 8 children were operated on using

the Limberg method. 13 children were operated on with cleft lip and palate using the Millard method. The number of patients who underwent cheiloplasty by the Obukhova-Tennyson method was 10 children.

Using the anthropometric method, a comparative analysis of the results of primary cheiloplasty using the Limberg, Obukhova-Tennyson and Millard methods was carried out 1-2 years after the intervention. To do this, measurements were taken on the nose and upper lip, based on the methods of anthropometric research by R.D. Novoselova (1978), T.V. Sharova, L.P. Gerasimova (1991), S. Mahn (1980).

Lip measurements: A / A1 - the width of the vestibule of the nose, B / B1 - the distance from the corner of the mouth to the middle of the columella on both sides, C / C1 - the height from the lower edge of the upper lip to the entrance to the vestibule of the nose, D / D1 - the distance between the standing points Cupid's lines, E/E1 - the distance between the rising point of the Cupid's line to the lower edge of the upper lip on each side. Lip height, H / H1 - the height of the skin of the upper lip, the difference between the parameters C and E.

Nose measurements: F/F1 - length of columella on both sides, G/G1 - length of filtrum on both sides.

The results of an anthropometric study in operated patients using three methods were compared with the control average age indicators in children.

The obtained digital indicators were evaluated on a 6-point scale: 1-2 points - unsatisfactory result - the difference in the comparative assessment of any parameter between the operated patients and control healthy children exceeds 4 mm; 3-4 points - a satisfactory result - the difference in the comparative assessment of any parameter between operated patients and control healthy children is 3-4 mm; 5-6 points is a good result. The difference in comparative evaluations 1-2 mm.

Results of the study and their discussion. A photometric study showed that the width of the nasal vestibule (A) in children operated by the Obukhova-Tennyson method was 1.1 ± 0.01 cm, in the control group it was 0.71 ± 0.02 cm. 3.9 mm. According to the point system, this amounted to 3-4 points - a satisfactory result. Analyzing the data obtained during primary cheiloplasty according to Millard D.R. noted: in operated children 0.64 ± 0.01 cm, in children of the control group 0.71 ± 0.02 cm. The width of the vestibule of the nose had a difference of 0.7 mm, 5-6 points - a good result. The width of the nasal vestibule in children operated on by the Limberg method was 0.66 ± 0.02 cm, in the control group it was 0.71 ± 0.02 cm. Comparing the results obtained, we obtained an average difference of 0.5 mm. According to the point system, this amounted to 5-6 points - a good result.

Distance from the corner of the mouth to the middle of the base of the columella on both sides (B). According to this indicator, during the Obukhova-Tennyson operation, the difference in the control and operated groups was 0.6 mm., 5-6 points. This is a good result. During cheiloplasty using the Millard and Limberg methods, almost the same parameters were noted both in the control and in the operated groups. The result can be regarded as good.

Height from the lower edge of the upper lip to the entrance to the vestibule of the nose (C). According to the Obukhova-Tennyson method, this indicator was 2.61 ± 0.02 cm in operated children, and 2.2 ± 0.02 cm in children in the control group. The difference between them was 4.1 mm. - unsatisfactory result, 1-2 points.

As for this parameter according to Millard D.R., in operated children it was 1.9 ± 0.02 cm, in the control group - 2.2 ± 0.02 cm. The difference between them was 3 mm, a satisfactory result. With the Limberg method, this indicator in operated children was 1.85 ± 0.02 cm, in healthy children - 2.2 ± 0.02 cm. The difference was 3.5 mm, 5-6 points, a satisfactory result.

The distance between the rising points of Cupid's line (D). The data obtained in both operated and healthy children with all three methods did not reveal any differences. According to the Obukhova-Tennison method, this indicator was 0.66 ± 0.01 cm both in the control and after cheiloplasty. With cheiloplasty according to the Millard D.R. and Limberg, this distance was $0.66\pm 0.01^*$ cm in the control, 0.65 ± 0.01 cm after the operation, the difference was 0.1 mm, 5-6 points a good result.

The height of the red border in raised points (E). With cheiloplasty according to Obukhova - Tennison, this indicator in operated children was 0.63 ± 0.02 cm, in control children - 0.65 ± 0.04 cm. The difference was up to 1 mm, 5-6 points, a good result. With cheiloplasty according to Millard D.R. this distance was 1.03 ± 0.02 cm, in the control - 0.65 ± 0.04 cm. The difference was 3.8 mm, 3-4 points - a satisfactory result. With the Limberg method, this indicator in operated children was 0.95 ± 0.03 cm and 0.65 ± 0.02 cm in healthy children. The difference was 0.3 mm, 5-6 points - a good result.

The height of the skin part of the nasal septum (F). Significant differences were found after cheiloplasty using the Obukhova-Tennison method. The data were 0.31 ± 0.01 cm in operated children and 0.53 ± 0.01 cm in control children. The difference was 2.2 mm. According to the Millard D.R. 0.44 ± 0.01 cm in operated children and 0.53 ± 0.01 cm in healthy children, 5-6 points, a good result. According to the Limberg method, this distance was 0.46 ± 0.02 cm in the operated group, 0.53 ± 0.01 cm in the control, 5-6 points, a good result.

Retraction of the base of the wing of the nose, (G). According to the Obukhova-Tennison method, this indicator in operated children was 0.68 ± 0.01 cm, in the control group - 0.42 ± 0.02 cm. The difference was 2.6 mm, 3-4 points - a satisfactory result. With cheiloplasty according to the Millard D.R. this distance was 0.40 ± 0.01 cm and 0.42 ± 0.02 cm in control children. The difference was up to 1mm., A good result. During the Limberg operation, this indicator was 0.41 ± 0.01 cm and 0.42 ± 0.01 cm in the control. A difference of 0.1 mm is a good result.

The height of the skin of the upper lip (H). According to this indicator, during the Obukhova-Tennison operation, the difference in the control and operated groups was 2.6 mm, 3-4 points. It can be regarded as a satisfactory result. With cheiloplasty by the Millard method, this indicator in the operated children was 0.87 ± 0.01 cm, in the control 1.45 ± 0.02 cm. The difference was 5.8 mm, the result was unsatisfactory. With the Limberg method, this distance in the operated children was 0.91 ± 0.02 cm, in the control 1.45 ± 0.02 cm. The difference was 5.4 mm. The result can be regarded as unsatisfactory.

The results of a subjective survey of parents: after surgical treatment using the Millard method: the scar is not noticeable - in 10 (76.9%) patients, the scar is noticeable - in 3 (23.1%), the red border is continuous - in 9 (69.2%), the red border is discontinuous - in 4 (30.8%), the height of the upper lip is restored - in 8 (61.5%), the height of the upper lip is not restored - in 5 (38.5%), the height of the upper lip is symmetrical on both sides - in 6 (46.1%), the height of the upper lip is not symmetrical on both sides - in 7 (53.9%), there is no flattening of the ala of the nose - in 11 (84.6%), the ala of the nose is flattened - in 2 (15.4%).

After surgical treatment according to the Tennison-Obukhova method: the scar is not noticeable - in 3 (30.0%) patients, the scar is noticeable - in 7 (70.0%), the red border is continuous - in 8 (80.0%), the red border discontinuous - in 2 (20.0%), the height of the upper lip was restored - in 9 (90.0%), the height of the upper lip was not restored - in 1 (10.0%), the height of the upper lip was symmetrical on both sides - in 6 (60.0%), the height of the upper lip is not symmetrical on both sides - in 4 (40.0%), there is no flattening of the ala of the nose - in 2 (20.0%), the ala of the nose is flattened - in 8 (80.0%).

After surgery according to the Limberg method: the scar is not noticeable - in 5 (62.5%) patients, the scar is noticeable - in 3 (37.5%), the red border is continuous - in 5 (62.5%); the red border is discontinuous - in 3 (37.5%), the height of the upper lip is restored - in 4 (50.0%), the height of the upper lip is not restored - in 4 (50.0%), the height of the upper lip is symmetrical on both sides - in 3 (37.5%), the height of the upper lip is not symmetrical on both sides - in 5 (62.5%), there is no flattening of the ala of the nose - in 6 (75.0%), the ala of the nose is flattened - in 2 (25, 0%).

Conclusions: the linear methods of Millard and Limberg and the Obukhova-Tennyson technique used in primary cheiloplasty, with the right choice of indications for their implementation, can successfully restore the anatomical and functional integrity of the defect zone. To select the technique of bilateral primary cheiloplasty, the determining factor is the degree of underdevelopment of the soft tissues of the median fragment.

With underdevelopment of the soft tissues of the median fragment by 2/3 of its height, the most acceptable method is to move the triangular flap according to Obukhova-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 orbicular muscle of the mouth.

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

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