

Surgical treatment of cleft lip

Tratamento operatório das fendas labiais

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A B S T R A C T

We performed a systematic review of the literature on the surgical treatment of cleft lip, emphasizing the prevalence, complications associated with the treatment and the points of disagreement between authors. We conducted a literature cross-sectional search that analyzed publications in books, articles and on the databases SciELO – Scientific Electronic Library Online, PubMed, of the National Center for Biotechnology Information. We conclude that: 1) the severity of the cleft will indicate the technique presenting more advantages; 2) the different approaches indicate that there is no consensus on the optimal technique; and 3) the surgeon experience contributes to choosing the best option.

Key words: Surgery. Cleft lip. Cleft lip/complications. Cleft palate.

INTRODUCTION

Cleft lip and palate is the most frequent congenital craniofacial deformity. It presents in various forms, causing anatomical distortions in the upper lip, nose and palate¹. It corresponds approximately to 65% of the malformations of the craniofacial region².

In 2002, Loffredo assessed the prevalence of oral clefts in newborns in Brazil between 1975 and 1994; of the 16,853 registered cases, 4,413 had isolated cleft palate³. One of the reviewed studies, conducted among students of Bauru in Sao Paulo state, obtained a prevalence of 1.54 per 1,000. Souza et al. analyzed 12,782 records in seven maternity hospitals in the state of São Paulo, one in Rio de Janeiro and one in Santa Catarina, and found the prevalence of 0.47 per 1,000 live births⁴. In Porto Alegre, the prevalence of 0.88 per 1,000 live births was found. In the city of Pelotas, congenital malformations comprised 1.37% of total births⁵. Prevalence of cleft lip and palate was 0.78 per 1,000 live births. In that study, by Cunha *et al.*, the risk factors for this deformity were low maternal education, low socioeconomic status and family history of malformation.

The International Confederation of Plastic Surgery officially adopted the classification of cleft lip and palate proposed by Kenahan and Stark. These authors considered embryological aspects to classify clefts into three groups: Group 1, anterior, primary cleft palate, involving right, left, or both lip and alveolus; Group 2, anterior and posterior clefts of the palate, primary or secondary, involving lip, alveolus and hard right, left or both palate; Group 3, fissures of the right, left or both posterior palate, hard palate and

soft palate. Some facial clefts are rare and may be oblique, transverse, of the lower lip, nose and upper lip median cleft, with or without hypoplasia⁶.

The classification for cleft lip and palate used in the Bauru Hospital for Rehabilitation of Craniofacial Anomalies, São Paulo, was established by Spina et al., encompassing morphological and embryological malformation, with reference to the incisive foramen. They are thus classified into four groups: Group 1, pre-incisive foramen fissures, when confined to the lip, with or without involvement of the alveolar ridge and nostrils; Group 2, trans-incisive foramen fissures, when they affect the lip, alveolar ridge and palate; Group 3, post-incisive foramen fissures, when involving only the palate; and Group 4, comprising the rare facial clefts⁷. Trans-incisive foramen fissures due to the complete rupture of the jaw have great restriction for growth potential, with negative aesthetic reflections. The pre-incisive foramen fissures are less restrictive and cause less adverse effects on facial aesthetics⁸.

Since 390 BC in China, when a successful closing of a cleft lip was reported, numerous techniques have emerged for the treatment of the disease⁹. Ambroise Paré described a technique in which the labial aspects, previously incised with a long needle, were transfixed and brought together with wires anchored to this needle. William Rose and James Thompson described a similar technique, now known as the Rose-Thompson, consisting of angled incisions across the labial edge parts, so that during the suturing, there is an extension of the lip to prevent the “notches” in the vermilion. Then came techniques using flaps, with the goal of lengthening the lip and preventing scar retraction,

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so common in linear scars, trying to keep the lip symmetry and "cupid's bow" more natural. Malgaigne warned about the limitations of the straight closing and complication of the notch in the vermilion. Lemesurier proposed a reconstruction with quadrangular flaps and Mirault produced a triangular flap ⁶.

Charles Tennison disclosed a method with triangular flaps and Z-plasty. Ralph Millard Jr presented the technique of advancement and rotation at the First International Congress of Plastic Surgery, in Stockholm ⁶. This technique was first published in 1957, spreading quickly due to the simplicity of its preparation and the good results ¹.

Tennison, Randall and Skoog should be highlighted as icons in the evolution of the treatment of cleft lip, as well as the Brazilian surgeons Vitor Lemos and Perseus Spina, referenced in the Journal of the Brazilian Society of Plastic Surgery by Jaime Anger ¹⁰. In 2002, Figueiredo pointed out that the biggest challenge, according to Cronin, is the surgical correction of bilateral clefts, due to the absence of tissue, the prominent prolabium and the lack of columella ¹¹. After some changes made by Millard himself, among which the procedure on the nasal cartilages during the same operative time as the primary labiaplasty, correcting nostrils asymmetries with excellent results. This technique has spread rapidly and is now held in various centers of the world ¹².

Harold McComb and Kenneth Salyer observed no change in the growth and development of the nasal cartilages when rhinoplasty is performed during the primary operation of the lip (labiorrhinoplastia), coming to justify the enthusiasm of many surgeons with regard to this procedure. In Brazil, Perseus Castro de Lemos suggested in 1956 the Z-plasty for unilateral clefts, and Victor Spina made reference to lip repair with plastic in Z in lectures and scientific articles ¹⁰.

The authors aimed to review the scientific literature regarding the surgical treatment of cleft lip, incidence, complications associated with the treatment and the points of disagreement between authors.

METHODS

We conducted a literature transversal search through publications in books, articles and electronic media from the following databases: SciELO (Scientific Electronic Library Online) and PubMed (National Center for Biotechnology Information). The mesh terms were: Surgery, Cleft lip, Cleft lip / surgery.

LITERATURE REVIEW

General principles of fissures operative treatment

In 2002, Capelozza said that modern surgery respect certain principles for successful lip repair: minimal resection of the labial tissue sections; preservation of existing anatomical characters in cleft lip, as philtral crest, cupid's bow and the median tubercle; and reconstruction of the lip on three levels, mucosal, muscular and cutaneous ⁸. Some universal principles must be applied to improve results, address the deficiencies arising from cleft lip, restore static and dynamic anatomy, reducing the asymmetry of the nasal slit and leave a natural scar, mimicking the contours of the philtrum ¹³.

In 2002, Figueiredo described surgical techniques for treatment of cleft lip and systematized the requirements of an ideal technique: leave the lip symmetrical with all its structures - vermilion flawless, cupid's bow, philtrum; reconstruct the functional and anatomical musculature; simplicity; well localized scars; not change the shape of the lip with growth; rebuild and symmetrize the nose ⁶.

The ideal surgical technique for cleft palate remains controversial. The techniques used to occlude the complete fissures of the palate vary with the surgeon and also from one patient to another, according to the characteristics of the fissure and the general state of the patient, which together dictate the complexity of the case. While there are many techniques for repair of the complete cleft palate, there is no consensus on the ideal method. There should be considered: the type and extent of the fissure, the surgical technique, the repair time and the experience of the professional, as well as functional and individual factors such as the patient's general health and velopharyngeal occlusion ¹¹.

The embryogenesis that was interrupted during fetal development is a criterion to be considered in planning fissures repair. The balance between the aesthetic and the normal function depends on the implementation of the operation and positioning of the flaps. According to Millard, Veau found that productive operative methods for treating fissures are those that approached normal development ¹². Lip repair plays an important role immediate of reconstruction of facial morphology, changed in all the fissures involving the lip ⁸.

Goals of operative treatment

The specific goals of treatment include the standardized aesthetic appearance of the lip and nose; primary and secondary palate closure; normalized language, speech and hearing; airway patency; class I occlusion and normal masticatory function; healthy teeth and periodontium; normal psychosocial development ¹⁴. As for the repair of the unilateral cleft lip, Campbell *et al.* ¹⁴ added the creation of the upper lip with appropriate vertical length and symmetry, repair of underlying structures with normal muscle function and primary treatment of associated nasal deformities. Currently, Koh considers more appropriate question "What is the principle that you follow?" instead of "What is the technique you use?" ¹⁵. Since the initial

work of Malgaine and Mirault in the nineteenth century, the techniques and surgical maneuvers for rehabilitation of fissures were developed to provide a better functional and aesthetic repair, but there is no consensus on the ideal method¹⁶.

Operative techniques

Buzzo reported his experience with the labiaplasty technique developed in the city of Göteborg, Sweden, and concluded that the technique was easy to apply and had good results, especially when performed at the recommended age¹. The SOBRAPAR – Brazilian Society for Research and Care for Craniofacial Rehabilitation – standardized the surgical technique in the protocol for the treatment of unilateral cleft lip and started to call it Göteborg technique.

Demke *et al.* analyzed the evolution of the operation of the unilateral cleft lip by rotation and advancement flaps, and different methods of stretching of the medial lip¹⁷. Though the straight line repair techniques are less used, they allow rotation and stretching of the lip. The incisions in the medial and lateral elements of the cleft lip does not necessarily begin as straight incisions. Only the short medial lip is turned down vertically and approximated. The technique of Millard proved revolutionary in unilateral repair, establishing incisions that allowed rotation with minimal injury to aesthetics, while many surgeons before Millard used two elements of rotation and advancement in their techniques. Figueiredo *et al.* emphasized the simplicity of the technique of Rose-Thompson, the good acceptance of Lemesurier, the promotion lip stretching of Tension, the conservation of tissue in the Petit technique, the simplification of the zeta-plasty advocated by Perseus Lemos and Spina, and the most used, the Millard technique⁶ (Table 1).

The nasal deformity associated with unilateral cleft lip is characterized by a prominent asymmetry resulting from distorted and displaced structures, causing a depression in the side of the fissure and wing tightening. The nasal septum and back are diverted to the other non-fissured side along with the premaxilla due to muscle imbalances. These nasal deformities are exacerbated by poor positioning of the bone base at the cleft side. Gosla-Reddy *et al.* studied the nasal symmetry in the correction of complete unilateral cleft lip by the primary septoplasty technique of Afroze and stated the advantages of primary septoplasty, since the cleft side nostril showed better symmetry in the group treated

with septoplasty¹⁸. They also stressed the importance of new long-term studies to assess the final outcome of nasal deformity.

Four surgical techniques were compared in order to evaluate the nasal symmetry in patients with cleft lip¹⁹. The study found that the nasoalveolar molding with primary rhinoplasty and overcorrection achieved the best results when compared with primary rhinoplasty, the nasoalveolar modeling and nasoalveolar modeling with primary rhinoplasty.

Okawachi *et al.* reviewed the treatment of secondary nasal deformity in patients with unilateral cleft lip and palate, using clinical parameters and three-dimensional images obtained by laser scanning²⁰. They concluded that the lower position of the lateral cartilage of the cleft side is not abnormal, and improvements in the technique to reposition and shape the nasal cartilage at both sides will be required when the nose tip is significantly depressed. Although there are numerous surgical procedures for nasal correction in patients with unilateral cleft lip, the results are not always satisfactory. The evaluation of the nasal shape by mirroring technique does not always allow a good analysis, but the method employed in the cited study²⁰ allows to assess the symmetry of the nose alar shape from quantitative measurements of width, height and extent of curvature of the alar groove arc. Wakami *et al.* analyzed the effects of the suspension of the nostril and adhesion of cleft lip in the nasal deformity by a qualitative assessment score. They concluded that the combination of nasal suspension with lip adhesion can correct the nasal deformity. According to these authors²¹, the labial adhesion allows the narrowing of a wide cleft lip, improvement of abnormal muscle ligaments and of the narrowing of the nasal floor, although it increases operative time and does not enable adequate alveolar alignment alone. Approximately 46% of American surgeons used the Millard technique of rotation and advancement without modifications to the unilateral lip closure, and approximately 38% carried out the technique with various modifications, which demonstrates that the success of this technique consists of less visible incisions¹⁷.

A retrospective study¹⁶ conducted in Minas Gerais on surgical techniques for repair of cleft lip and palate showed the predominance of the Millard technique for unilateral lip repair and of the technique of Spina and Millard for bilateral ones¹⁶. The most used technique for repair of cleft palate is the one of Veau, who has two disadvantages,

Table 1 - Surgical techniques for reconstruction of unilateral cleft lip.

Author	Technique
Rose (1879) - Thompson (1912), Ladd, Braun and Veau (1938)	Excision in arched lines
LeMesurier (1945), May and Trauner	Quadrangular flaps
Tension (1951), Randall, Lemos and Spina (1963)	Triangular flaps
Millard (1955)	Rotation and advancement of flaps

the use of metallic wire, not recommended for the delicate tissues in the region, and the knot in the midline, in the center of a fresh scar¹¹. The techniques of Spina and Millard were the most used in the Hospital for Rehabilitation of Craniofacial Anomalies, University of São Paulo, Bauru, São Paulo⁸. The review of the operative protocols of Brazilian services showed that the technique preferably adopted for unilateral lip repair was Millard's, and for bilateral lip repair, of Spina and Millard²².

Discrepancies of surgical protocols

The Dallas operative protocol recommends: at three months of age, primary unilateral cleft lip and nose; six to nine months, palatoplasty in single stage; At five years of age, lower secondary cleft lip and nose; from seven to nine, cancellous bone graft from the iliac to the alveolar cleft; after full growth, orthognathic surgery; from 12 to 18, soft tissue surgery, rhinoplasty or other²³.

In developing countries there is a significant risk of abandonment of palatoplasty after lip repair in patients seeking care later. Agrawal et al. established a new operative protocol designed for patients with cleft lip and palate in this situation: a cleft palate is the first to be repaired at 6-9 months of age, or when the patient seeks treatment. A cleft lip is repaired three to six months after the first operation²⁴.

The all-in-one (AIO) closing is the repair of the lip, hard and soft palate in a single stage. De Mey et al. conducted a non-randomized prospective study to compare the craniofacial morphology of patients at ten years of age 25 after all-in-one closing and concluded that the AIO surgical protocol offers important advantages, such as a single anesthesia and hospitalization, less interference in growth, lower amount of scar tissue, no secondary operations, being an ideal alternative for countries that do not have a health system able to afford the costs of a multistage, multidisciplinary treatment²⁵. These authors also strengthened the common concept among the surgical teams that repair of the hard palate, soft palate and lip in an early stage adversely affects the maxillofacial development; however, this finding has not been proven in clinical long-term studies. The operative schedule plays an important role in the prognosis of patients with cleft lip and palate, so that the timing of the primary palate closure can influence the indication for orthognathic surgery. According to Broome et al., Children who had conventional repair of primary cleft palate during the first year of life need orthognathic surgery more than those who underwent repair of the soft palate at three months of age, and hard palate at six²⁶. Moreover, when orthognathic surgery was indicated, the procedure was simplified in patients who had early repair.

Manna *et al.* highlighted their preference for performing palatoplasty and alveoloplasty around the 39th month of life, when the eruption of molars has already occurred, avoiding interference with the growth of the jaw

¹³. The palate closure should be performed between one and 1.5 years old, the age of language acquisition, when the anatomical structures are better identified and muscles of the palate are more developed, making the operation more feasible; the earlier the intervention, the better the results achieved¹¹. Surgical treatment of primary palate is performed between seven and 15 months of age, to balance the growth and development of speech. The growth of the maxilla may be affected in the horizontal, vertical and transverse directions; repercussions in the dental arch and occlusion may occur. In an attempt to decrease the interference on growth, many centers have chosen to extend the closure of the bony palate and obtained conflicting results. Many variables are involved in this process and further studies are needed to substantiate a protocol¹⁴.

Galárraga stressed that performing lip repair under tension can cause the collapse of the maxillary arch and deformities that alter the contour of the lips²⁷. Changes in facial development may be related to excessive removal of soft tissues during repair of the cleft lip and inhibition of sagittal growth of the the middle region of the face. Thus, Galárraga conducted a study at the University of Guadalajara, Mexico, to determine the importance of the use of botulinum toxin in the lip repair to reduce tension on the wound and enhance the development of the middle region of the face. Electromyography showed a decrease in the orbicularis oris muscle activity after the drug application, the intraoperative administration being more appropriate than the preoperative one, because often children have infections of the respiratory tract, which can delay surgical planning.

The sagittal deficiency in the midface, in particular the concave facial profile, is an important characteristic of adults with complete unilateral cleft lip and palate according to Silva Filho et al. After assessing the restrictive effect of the operative procedure on growth of the maxilla based on studies comparing the growth of operated and non-operated patients with cleft lip and palate, they concluded that the repair of cleft lip in childhood is detrimental to the growth of the midface when the cleft lip and palate is unilateral²⁸.

To ensure the proper development of speech, the Protocol of Marburg (Germany) establishes the closure of the soft palate at six months of age and hard palate not before 13 years of age. Likewise, the Malek operating protocol anticipates the closure of the soft palate to allow speech without compensatory mechanisms and delays the closure of the hard palate to minimize iatrogenic effects in the face. The measurements provided confirm that there is not any restriction on growth and mandibular morphology²⁸. Manna *et al.* highlighted the importance of the involvement of multiple specialists to individualize the operative program to reduce the number of interventions that may restrict the diameter of the maxilla and interference with bone growth caused by aggressive operations¹³. After analyzing the development of the maxilla and the

morphology of the palate by means of lateral cephalometric radiographs of 36 patients between 37 and 48 months of age, who had undergone repair of lip and nose at six months and of the soft palate at ten, they highlighted the importance of the recovery of nasal breathing in the first operation and recommended the correction of secondary defects after completion of the individual's growth.

Chetpakdeechit *et al* demonstrated the influence of bilateral cleft lip and palate in facial and dental development, noting that the surgical and orthodontic treatment can improve results²⁹. A good symmetry and an average straight line between the maxilla and the mandible after treatment were found in 60% of young adults participating in the study.

Complications

A rare complication of rhinoplasty performed in cleft lip and nose is the formation of inclusion cysts, which can be classified into epidermoid or mucous cysts, according to the type of epithelium. There are theories to explain the formation of these cysts, but they are not yet fully understood. Pausch *et al.* postulate that the meticulous preparation before the lateral osteotomies, the proper closure of intranasal incisions, the complete removal of cartilage grafts adhered to epithelial fragments, and the insertion of nasal dressings without pressure can help prevent the formation of nasal cysts, warning that it is surprising that mucosal cysts have not previously been reported, considering the significant number of operations worldwide³⁰.

The repair of bilateral cleft lip and palate has achieved unsatisfactory results, leaving stigmas that require multiple revisions throughout childhood. Despite the preoperative alignment of the jaw have facilitated the correction by decreasing tension, some patients remain with a deformity in the central portion of the upper lip. Thus, secondary deformities associated with bilateral fissure are listed, including: the lack of redness in the midline, with relative excess laterally (whistle deformity); incompatibility of the lip vermilion color when compared with the hypoplastic prolabium vermilion; enlargement and absence of depression in the philtrum; straight lateral columns; absence or deformation of the cupid's bow and philtrum landmarks³¹.

The Abbe flap is a surgical method for the treatment of secondary deformity associated with bilateral clefts. The initial phase of the procedure is the review of bilateral cleft lip and palate and rotation of a pedicle flap of the lower lip in a defect created in the center of the upper lip. The pedicle should remain in place for two to three weeks to neovascularization and posterior section with safety. To ensure proper extension, this procedure should be performed with the premaxilla in the correct position. The cases in which the premaxilla is deficient should undergo Le Fort I surgery before the Abbe flap. In the Texas Children's Hospital, Koshy concluded that this flap is

effective for replacing structural components and functional defects of the total thickness of the upper and lower lips resulting from the resection of cancer, birth defects or traumatic amputation³¹.

Vertical excess of the premaxilla has been a challenge for orthodontists and surgeons according to Meazzini *et al.*, constituting a serious cosmetic problem that does not improve spontaneously with growth³². Though not providing clear guidelines for this treatment, the literature advises not to perform osteotomy of the premaxilla during the initial growth, before nine and 11 years of age. This author presented a protocol of surgical treatment that takes into account the age and severity of dental vertical excess of the premaxilla (Table 2).

The technique of the orthopedic intrusion of Liou is important in the management of cleft lip and palate due to the possibility of correcting a serious aesthetic problem without harming growth. It is an effective non-surgical method, which should be indicated instead of surgery in many cases. Orthodontic intrusion during the growth phase offers advantages such as the use of low-intensity forces, improves the relationship between the front teeth and upper lip due to control of the premaxilla, and allows further growth of the impaired maxilla in patients with bilateral cleft. In severe cases, such as 7-8 mm superior bulge, orthodontics alone is not enough to achieve the intended objectives and should not be indicated because of the risk of root resorption and, considering the expected mandibular growth, the good positioning of the premaxilla is important³².

The two most common abnormalities after primary lip repair according to Koh are the loss of the philtrum setting and the obliteration of the cupid's bow¹⁵. Although considered the most widely used surgical technique for repair of unilateral cleft lip, Millard's rotation and advancement results in scarring that often obliquely crosses the philtrum column and impairs the natural appearance of the lip. The philtrum undulation is a dense subcutaneous tissue located in the center, surrounded by a loose subcutaneous tissue, producing the philtrum column laterally. In unilateral cleft lip, subcutaneous tissue similar to the column is found in the medial and lateral segments of the cleft along the border. Thus, Koh *et al.* consider ideal to rearrange the skin flaps of the non cleft side in the proper position based on anatomical structures and aesthetics¹⁵. To obtain a more natural looking philtrum, they changed the skin incision along the philtrum column in a curved shape, approximating similar skin structures along the edge of the fissure.

Patients with cleft lip and palate are at increased risk for chronic middle ear disease, hearing loss, hypochromic anemia and hypoproteinemia¹², particularly individuals from lower social classes. Patients undergoing Millard lip repair are at increased risk for development of cholesteatoma and tympanic membrane perforation. However, the type of palatoplasty and age did not influence the otologic and audiological indicators of children of 5-6 years with unilateral cleft³³.

Table 2 - Treatment protocol of the vertical excess of the premaxilla in patients with bilateral cleft lip and palate based on dental age, severity of vertical excess and type of surgical treatment.

Dental age and severity of the vertical excess	Operative Treatment
Deciduous teeth (also after this interval) or mixed dentition (without bone graft or interval)	Othopedic intrusion (Liou's technique)
Mixed dentition (after bone graft or interval) with vertical excess <7-8 mm	Orthodontic intrusion
Mixed dentition (after bone graft or interval) or permanent dentition with vertical excess > 7 8 mm	Surgical intrusion

Solutions for remote locations

The needs of patients with cleft lip include a pre- and postoperative multidisciplinary approach, essential to treatment outcome. This team includes plastic surgeon, maxillo-facial surgeon, specialist in dental prosthetics and speech therapist. Various regions of the world do not have this service structure. The development of global wireless data networks have allowed Internet access, enabling the postoperative functional therapy to be offered to underserved populations in developing nations³⁴.

Campbell et al. emphasize that few studies have rigorous criteria for level I evidence, and most publications deals with the experience of a single surgeon, retrospective cohort studies and case series¹⁴. Lack of comparison and control groups in these studies provide little evidence to support decision making. The difficulty in standardizing the groups of patients with cleft lip and palate is due to heterogeneity, which affects the comparative validity of the data and results, a factor that hinders the coordination and development of multicenter studies. Likewise, it was observed that the lack of standardization is due to multiple factors, including the difficulty of conducting longitudinal studies that prove the effectiveness of the surgical techniques used in the treatment of different clinical forms¹⁶.

Methods of evaluation and other diagnostic resources

One can not make an objective assessment of cleft lip and palate with a scoring system. In a multicenter study involving six centers of care for patients with fissures and seven surgeons who used different techniques for repair of unilateral cleft lip, it was concluded that a simple evaluation method can be used for indication of operation and analysis of results, besides serving to audit of care services³⁵.

The high-resolution ultrasonography offers several advantages for the evaluation of patients with cleft lip due to the real-time capture of noninvasive imaging, visualization of muscles at rest and in function, without using ionizing radiation. Sonographic images show different anatomic patterns of the orbicularis oris muscle at the site of lip repair in all patients with a lateral bulge, morphological changes that may influence the final aesthetic of the lip during movement. This method may facilitate preoperative planning and postoperative evaluation after repair of secondary cleft lip deformities³⁶.

FINAL CONSIDERATIONS

This study allowed us to understand the general principles, specific objectives and protocols used in the surgical treatment of cleft lip, assessing its prevalence, most used techniques and major complications. The repair priority is the cleft lip according to the protocol of Dallas, the cleft palate according to the protocols of Agrawal and Malburg, and all-in-one closure of lip, hard and soft palate in the protocol of Mey. The techniques that utilize the principle excision in arched lines are the Rose-Thompson, Ladd, Braun and Veau. The flaps are quadrangular in Lemesurier, May and Trauner techniques, triangular in Tension, Randall, Lemos and Spina, and of rotation and advancement in Millard's. The straight-line repair is present in the techniques of Pfeifer, Delaire, Chait and Nakajima. The severity of the cleft will suggest the technique presenting more advantages and the different approaches indicate that there is no consensus on the optimal technique and surgeon experience contributes to choosing the best option.

R E S U M O

Os autores realizaram uma revisão sistematizada da literatura sobre o tratamento operatório de fendas labiais enfatizando a prevalência, as complicações associadas ao tratamento e os pontos de divergência entre autores. Foi realizada pesquisa bibliográfica e transversal, que analisou publicações em livros, artigos e bases de dados SciELO - Scientific Electronic Library Online, PubMed do National Center for Biotechnology Information. Os autores concluem que a gravidade da fissura vai sugerir a técnica que apresenta mais vantagens e as diferentes condutas indicam que não há consenso sobre a técnica ideal e a experiência do cirurgião contribui para a escolha da melhor opção.

Descritores: Cirurgia. Fenda labial. Fenda labial/complicações. Fissura palatina.

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