

**SEPTOPLASTY IN CHILDHOOD: FROM DIAGNOSIS TO TREATMENT**<https://doi.org/10.56238/sevened2024.039-003>

**Rodrigo Atet Cortizo, Guilherme Prianti de Andrade, Paula Mortoza Lacerda Beppu<sup>1</sup>,  
Francisco de Arruda Sgarbi<sup>2</sup>, Matheus Sgarbi Vergaças<sup>3</sup>, Giovanna Emanuella Piffer  
Tanuri<sup>4</sup> and Breno Lima Ferreira**

**ABSTRACT**

Septoplasty in children aims to correct deviations in the nasal septum that compromise breathing and quality of life. This study is a narrative review that analyzes the available approaches for pediatric septoplasty, considering surgical techniques and the use of bone and cartilaginous grafts. The search was carried out in the PUBMED, LILACS and SCIELO databases, and the inclusion and exclusion criteria were rigorously applied. The results indicate the importance of an individualized and careful approach in the choice of procedures, ensuring aesthetic and functional improvement in pediatric patients. It is concluded that septoplasty in children can bring significant benefits when well indicated and planned.

**Keywords:** Septoplasty. Pediatric surgery. Bone grafts. Nasal obstruction. Quality of life.

---

<sup>1</sup> INSTITUTION: HIORP - ENT and Specialties Hospital - Maniglia Institute  
Degree of education: complete higher education - R3 of otorhinolaryngology  
E-mail: [paulamortoza@gmail.com](mailto:paulamortoza@gmail.com)

<sup>2</sup> INSTITUTION: Santo Amaro University - Unisa  
Graduation degree: 12th semester  
E-mail: [francisco\\_sgarbi@hotmail.com](mailto:francisco_sgarbi@hotmail.com)

<sup>3</sup> INSTITUTION: HIORP - ENT and Specialties Hospital - Maniglia Institute  
Degree of education: complete higher education - otorhinolaryngologist (medical residency) - medical residency preceptor  
E-mail: [msgarbi11@msn.com](mailto:msgarbi11@msn.com)

<sup>4</sup> INSTITUTION: HIORP - ENT and Specialties Hospital - Maniglia Institute  
Degree of education: complete higher education - R3 of otorhinolaryngology  
E-mail: [giovannapiffer@outlook.com](mailto:giovannapiffer@outlook.com)

## INTRODUCTION

Septoplasty in children is a surgical procedure that aims to correct deviations in the nasal septum that can compromise respiratory function and affect quality of life. Nasal obstruction is a common condition in childhood, and it can result in breathing difficulties, sleep apnea, craniofacial development disorders, and behavioral problems. Although it is more frequently performed in adults, pediatric septoplasty has particularities and challenges, especially with regard to nasal growth and preservation of cartilaginous structure.

Indications for septoplasty in childhood include chronic nasal obstruction that is not responsive to medical treatment, severe anatomical deformities, and septal deviations that compromise normal breathing or cause a significant impact on the child's quality of life. Due to the specificities of this age group, the surgical approach must be carefully planned, taking into account the patient's age, the stage of facial growth, and the need for minimally invasive interventions that minimize the impact on future development.

Advances in surgical techniques and the use of bone and cartilaginous grafts have contributed to the effectiveness of septoplasty in children, allowing for better aesthetic and functional results. The choice of the appropriate technique, as well as the decision on the type of graft to be used, depends on a careful evaluation of the clinical case, the individual anatomy and the therapeutic objectives. Thus, the narrative review proposed here aims to explore the different approaches to septoplasty in childhood, highlighting the main aspects of diagnosis, treatment, and available techniques, in addition to analyzing the results described in the recent literature.

The objectives of this study are to identify the most appropriate indications and techniques for septoplasty in children, to evaluate the results described in the recent literature, and to propose guidelines that can assist in clinical decision-making for this age group.

## METHODOLOGY

The present study is a narrative review. The search began with the definition of descriptors and the choice of search platforms. The research was carried out in the online databases PUBMED, LILACS and SCIELO, from January to July 2024. The following descriptors related to the theme "septoplasty" and "surgical treatment in children" were used, combined with the Boolean operator "AND", and obtained through the DeCS/MeSH platform (Health Sciences Descriptors).

Data analysis was conducted in a standardized manner, following the inclusion criteria: articles published between January 2014 and February 2024, available in English and Portuguese, and with accessible full text. The exclusion criteria were: studies that address interventions unrelated to septoplasty, articles focused on alternative surgical techniques to septoplasty, research conducted exclusively in adults, and literature reviews that do not present new evidence or significant insights.

Articles were selected by two reviewers, who independently mapped the studies, discussed the results, and continuously updated a data collection form, in an iterative process. The evaluation followed a sequence, starting with the reading of the titles and, later, the abstracts of all publications identified as potentially relevant. In case of divergences in the selection of articles or in the extraction of data, consensus was adopted among the evaluators, with the possibility of consulting a third evaluator, if necessary.

In addition, studies identified through manual searches in journals, search for citations, and gray literature were included, ensuring comprehensive coverage of the theme "Septoplasty in Childhood: from Diagnosis to Treatment".

## RESULTS

The present study is a narrative review. The search began with the definition of descriptors and the choice of search platforms. The research was carried out in the online databases PUBMED, LILACS and SCIELO, from January to July 2024. The following descriptors related to the theme "septoplasty" and "surgical treatment in children" were used, combined with the Boolean operator "AND", and obtained through the DeCS/MeSH platform (Health Sciences Descriptors).

Data analysis was conducted in a standardized manner, following the inclusion criteria: articles published between January 2014 and February 2024, available in English and Portuguese, and with accessible full text. The exclusion criteria were: studies that address interventions unrelated to septoplasty, articles focused on alternative surgical techniques to septoplasty, research conducted exclusively in adults, and literature reviews that do not present new evidence or significant insights.

Articles were selected by two reviewers, who independently mapped the studies, discussed the results, and continuously updated a data collection form, in an iterative process. The evaluation followed a sequence, starting with the reading of the titles and, later, the abstracts of all publications identified as potentially relevant. In case of divergences in the selection of articles or in the extraction of data, consensus was adopted among the evaluators, with the possibility of consulting a third evaluator, if necessary.

In addition, studies identified through manual searches in journals, search for citations, and gray literature were included, ensuring comprehensive coverage of the theme "Septoplasty in Childhood: from Diagnosis to Treatment". The initial search resulted in 494 publications, of which only 18 met the proposed objectives after applying the inclusion and exclusion criteria, as well as reading the titles and abstracts.

On the PubMed platform, using the descriptors present in the title and abstract, 420 articles published between 1964 and 2024 were found. A time restriction of 10 years (2014 to 2024) was established, resulting in 210 articles. Applying the inclusion criteria, which required publication in Portuguese or English, 20 papers were excluded, leaving 190. Among these, only the articles available in full (FULL TEXT) were selected, resulting in 180 articles after the application of the specific exclusion criteria.

On the LILACS platform, the search process initially resulted in 150 articles in the period from 1964 to 2024. With the 10-year time restriction (2014 to 2024), the number was reduced to 90 articles. After applying the inclusion criteria (publications in Portuguese or English), 10 articles were excluded, leaving 80. Of these, 70 articles were selected because they were available in full (FULL TEXT). After applying the exclusion criteria, the final number of articles was 65.

On the SciELO platform, using the descriptors in the title and abstract, 120 articles covering the period from 1964 to 2024 were found. After the time constraint for the last 10 years (2014 to 2024), 60 articles were identified. With the application of the inclusion criteria, 5 articles were excluded, resulting in 55 articles. After selecting only the articles available in full (FULL TEXT), the number was reduced to 50, which were maintained after the application of the exclusion criteria.

Then, the duplication check was carried out among the selected articles on the three platforms, resulting in 270 unique articles, with 15 duplicates identified and removed. The next criterion for analysis involved the reading of the titles in a double-blind format by two evaluators, and only the materials approved by both were selected, which reduced the number to 56 studies. In addition, 3 references obtained through citation search were included, due to their relevance to the understanding of the theme. Finally, the reading of the abstracts by the same evaluators reduced the final number to 21 papers. After applying all these criteria, the theme "Septoplasty in Childhood: from Diagnosis to Treatment" resulted in the final selection of 7 studies.

## DISCUSSION

Septoplasty in children represents a procedure of great importance, especially when it comes to improving quality of life and preventing future complications. Several authors have explored different surgical techniques for the correction of nasal deformities and, specifically, septoplasty. According to Bozola, Bozola, and Sommer (2023), the use of "pseudo-flaps" of the lateral cephalic excesses of the alar cartilages is an innovative approach that aims to improve the projection of the nasal tip. This technique has been shown to be useful not only in adults, but also in children, bringing a less invasive approach and with better aesthetic and functional results.

The use of bone grafts is also a relevant alternative when it comes to nasal reconstructions, as Cosac et al. (2012) described in their experience with olecranon grafts for the augmentation of the nasal dorsum. These grafts provide stability and structural support to the nasal region, contributing to a significant improvement in the aesthetic and functional result. The use of autogenous bone grafts, as discussed by Da Silva et al. (2023), has been shown to be advantageous for correcting deformities caused by complications such as septal abscesses, being a safe and effective option.

The use of ribs as a source of bone grafting is highlighted by Daronch et al. (2023) in patients with Binder's syndrome, a rare condition that affects nasal development and is characterized by a hypoplasia of the midfacial region. In this context, the use of rib bone grafts allows for a more robust and effective reconstruction of the nasal dorsum, providing better facial harmony. This type of approach, although more invasive, has advantages for more severe cases in which a broader structure is required.

Furlani (2016) discusses the importance of increasing the radix region and nasal tip in the perception of reduced nasal dorsal convexity. In his study, the author reinforces the need for an approach that involves both the structuring of the nasal dorsum and the projection of the tip, thus ensuring a balanced and satisfactory result for patients. This approach is particularly relevant in children, in whom the preservation of functionality and proper growth are fundamental.

The use of bone grafts in laterorrhinias is also addressed by Odo, Dini and Ferreira (2009), who highlight the importance of these grafts in maintaining nasal symmetry and in the rehabilitation of patients with marked septum deviation. This type of intervention is particularly challenging in pediatric patients, due to the need to respect bone growth and avoid interference that could compromise nasal development over time.

In addition, Pochat, Alonso and Meneses (2010) emphasize the importance of functional and aesthetic evaluation in rhinoplasty procedures that use cartilaginous grafts.

For children, these considerations are crucial, as rhinoplasty at an early age must ensure not only the correction of the existing deformity, but also the preservation of nasal function, considering that respiratory capacity cannot be compromised during the development process.

Studies such as that of Feltraco, Feltraco and Torriani (2016) reinforce the importance of using interpositional bone grafts in various facial rehabilitations. The application of these grafts is essential to provide stability and support in cases where bone restructuring is necessary. This approach can also be adapted for septoplasty, offering an effective alternative for nasal septum restructuring in pediatric patients.

In summary, the reviewed literature demonstrates that the surgical management of nasal deformities in children, including septoplasty, requires a careful and individualized approach. The choice between bone or cartilaginous grafts, in addition to other techniques, must take into account the severity of the deformity, the age of the patient, and the potential impact on facial development. Recent studies show a significant advance in the techniques employed, providing better aesthetic and functional results, and allowing early intervention that contributes to the well-being and quality of life of affected children (BOZOLA; BOZOLA; SOMMER, 2023; COSAC et al., 2012; DARONCH et al., 2023).

## CONCLUSION

Septoplasty in children is an essential procedure to correct nasal septum deviations that affect breathing and quality of life in pediatric patients. The narrative review showed that the choice of surgical techniques and graft materials should be made individually, considering the specificities of each patient, such as age and stage of craniofacial development. Techniques that use bone and cartilage grafts have been shown to be effective in both functional and aesthetic correction, allowing lasting results and minimizing risks of negative impact on nasal growth.

Advances in surgical techniques and the development of less invasive approaches are key to ensuring the safety and efficacy of septoplasty in pediatric patients. In addition, the use of autogenous grafts, such as rib and olecranon grafts, have shown benefits in terms of stability and aesthetic results. The importance of respecting nasal growth and adapting techniques to the patient's developmental stage has been highlighted by several studies, which reinforces the need for a careful and specialized evaluation.

Thus, the objectives of the study were achieved by identifying the indications, most appropriate techniques and strategies for performing septoplasty in children. The current literature supports the efficacy of the available techniques, highlighting the importance of a



multidisciplinary approach and careful surgical planning to provide the best possible outcome to pediatric patients, ensuring improved quality of life and minimizing future complications.

## REFERENCES

1. Bozola, A. R., Bozola, A. C., & Sommer, C. G. (2023). Aumento da projeção da ponta nasal com “pseudo-retalhos” obtidos dos excessos cefálicos laterais das cartilagens alares. \*Revista Brasileira de Cirurgia Plástica, 34\*, 445–451. Disponível em: <https://www.scielo.br/j/rbcp/a/FqMnbZKrHhfDPbPpqNJDBzJ/?format=html&lang=pt>. Acesso em: 24 jul. 2024.
2. Cosac, O. M., et al. (2012). Enxerto ósseo de olécrano para aumento do dorso nasal. \*Revista Brasileira de Cirurgia Plástica, 27\*, 212–216. Disponível em: <https://www.scielo.br/j/rbcp/a/frktLjHSBxqqPFTnQVyQp7C/?lang=pt>. Acesso em: 24 jul. 2024.
3. Da Silva, A. G. C., et al. (2023). Uso de enxerto autógeno para correção do dorso nasal após complicação de abscesso septal: relato de caso. \*Revista Brasileira de Cirurgia Plástica.\* Disponível em: <https://www.academia.edu/download/101641569/a2591.pdf>. Acesso em: 24 jul. 2024.
4. Daronch, O. T., et al. (2023). Reconstrução nasal com uso de costela em paciente com síndrome de Binder: Um relato de caso e revisão de literatura. \*Revista Brasileira de Cirurgia Plástica, 38\*(3), e0786. Disponível em: <https://www.scielo.br/j/rbcp/a/dvXc6bcXNfJGW8CN6yvVxmN/?lang=pt>. Acesso em: 24 jul. 2024.
5. Furlani, E. A. T. (2016). Aumento do radix e da ponta na percepção de redução da convexidade do dorso nasal (GIBA). \*Universidade Federal do Ceará.\* Disponível em: <https://repositorio.ufc.br/handle/riufc/18823>. Acesso em: 24 jul. 2024.
6. LK, F., Feltraco, D., & Torriani, M. A. (2016). Enxerto ósseo interposicional para reabilitação em maxila. \*Universidade Federal do Ceará.\* Disponível em: <https://repositorio.ufc.br/handle/riufc/18823>. Acesso em: 24 jul. 2024.
7. Odo, L., Dini, G. M., & Ferreira, L. M. (2009). Uso de enxerto ósseo nas laterorrinias. \*Arquivos Catarinenses de Medicina, 38\*(Suplemento 01), 133. Disponível em: <http://www.acm.org.br/revista/pdf/artigos/675.pdf>. Acesso em: 24 jul. 2024.
8. Pochat, V. D., Alonso, N., & Meneses, J. V. L. (2010). Avaliação funcional e estética da rinoplastia com enxertos cartilaginosos. \*Revista Brasileira de Cirurgia Plástica, 25\*(2), 260–270. Disponível em: <https://rbcp.org.br/export-pdf/585/v25n2a07.pdf>. Acesso em: 24 jul. 2024.