

## Analysis of the Evolution of Techniques and Review in Cleft Surgery

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**Abstract :** Introduction: Cleft lip and/or palate are the most frequent forms of congenital craniofacial anomalies, affecting mainly the middle third of the face and manifesting by functional and aesthetic changes. Bilateral cleft lip represents a reconstructive surgical challenge, not only for the labial component but also for the associated nasal deformation. Recently, the paradigm of the approach to this pathology has changed, placing the focus on muscle reconstruction and anatomical repositioning of the nasal cartilages in order to obtain the best aesthetic and functional results. The aim of this study is to carry out a systematic review of the surgical approach to bilateral cleft lip, retrospectively analyzing the case series of Plastic Surgery Service at Hospital Santa Maria (Lisbon, Portugal) regarding this pathology, the global assessment of the characteristics of the operated patients and the study of the different surgical approaches and their complications in the last 20 years. Methods: The present work demonstrates a retrospective and descriptive study of patients who underwent at least one reconstructive surgery for cleft lip and/or palate, in the CPRE service of the HSM, in the period between January 1 of 1997 and December 31 of 2017, in which the data relating to 361 individuals were analyzed who, after applying the exclusion criteria, constituted a sample of 212 participants. The variables analyzed were the year of the first surgery, gender, age, type of orofacial cleft, surgical approach, and its complications. Results: There was a higher overall prevalence in males, with cleft lip and cleft palate occurring in greater proportion in males, with the cleft palate being more common in females. The most frequently recorded malformation was cleft lip and palate, which is complete in most cases. Regarding laterality, alterations with a unilateral labial component were the most commonly observed, with the left lip being described as the most affected. It was found that the vast majority of patients underwent primary intervention up to 12 months of age. The surgical techniques used in the approach to this pathology showed an important chronological variation over the years. Discussion: Cleft lip and/or palate is a medical condition associated with high aesthetic and functional morbidity, which requires early treatment in order to optimize the long-term outcome. The existence of a nasolabial component and its respective surgical correction plays a central role in the treatment of this pathology. The high rates of post-surgical complications and unconvincing aesthetic results have motivated an evolution of the surgical technique, increasingly evident in recent years, allowing today to achieve satisfactory aesthetic results, even in bilateral cleft lip with high deformation complexity. The introduction of techniques that favor nasolabial reconstruction based on anatomical principles has been producing increasingly convincing results. The analyzed sample shows that most of the results obtained in this study are, in general, compatible with the results published in the literature. Conclusion: This work showed that the existence of small variations in the surgical technique can bring significant improvements in the functional and aesthetic results in the treatment of bilateral cleft lip.

**Keywords :** cleft lip, palate lip, congenital abnormalities, cranofacial malformations

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