

Case report

From Cleft to Contour: Post-operative Nasal Molding

Using The PSU Nasal Clip in a Patient with Cleft lip and Alveolus

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Introduction

Cleft lip and palate are commonly associated with nasolabial and maxillary dentoalveolar deformities, including a separated upper lip, asymmetrical widening of the nasal base, and a palatal gap between the segments.

Management requires a multidisciplinary approach. Early dental and surgical treatment aims to restore function and achieve acceptable esthetic outcomes, reducing psychosocial challenges and improving the quality of life for both patients and their parents.

PSU Nasal Clip

PSU Nasal Clip is a modified appliance based on conventional nasoalveolar molding (NAM). Its small hollow acrylic component allows clear breathing while supporting the nasal cartilage and soft tissue in a position close to that immediately after surgery. Each set includes six different acrylic sizes in two colors. The connecting wire can be tightened or loosened to fit the patient's nostrils (Figure 3).

The appliance is recommended for continuous use for 6-9 months after lip repair, with gradual replacement by larger sizes as the patient grows (Figure 4).



Figure 1: Pre-surgical phase
1a. without obturator and surgical strap
1b. with obturator and surgical strap

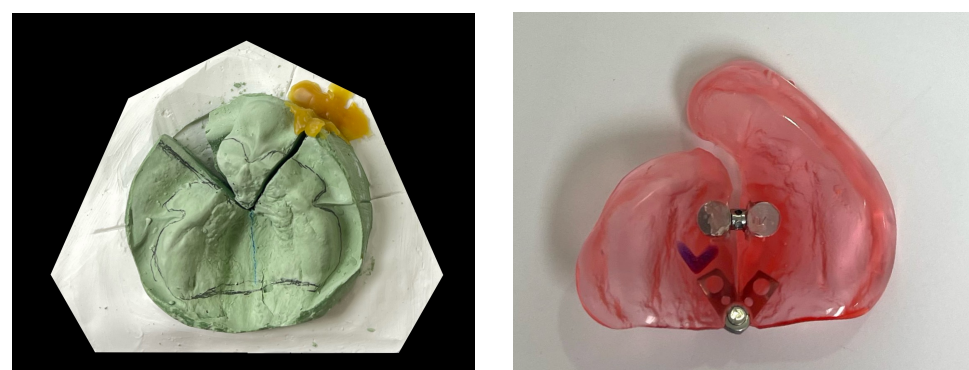


Figure 2: Maxillary model and obturator



Figure 3: PSU-Nasal clip



Figure 4: Post-surgical phase
4a-4b. 1-month follow up with and without nasal clip
4c-4d. 3-months follow up with and without nasal clip

Case Report

A 1-month-old female with right complete cleft lip and alveolus and left incomplete cleft lip was referred to the center and surgical strap was used to stabilize the segments of upper lip. Due to deviation and collapse of the nasal bridge toward the complete cleft side, the patient experienced breathing discomfort and difficulty breastfeeding (Figure 1).

At the age of 10 months, the premaxilla of the working model was repositioned approximately 2 mm palatally and posteriorly. An obturator with a fan-type screw was used to create adequate space for anterior segment alignment and was activated twice daily. During the wearing time, an extra-oral surgical strap was used to stabilize the soft tissue of upper lip and a small amount of denture adhesive paste was applied to hold the obturator in place and guide the anterior part of the greater segment to the desired position (Figure 2).

After 6 months of molding, the alveolar ridge achieved near-normal alignment, and the patient was referred for cheiloplasty. To prevent relapse of nostril asymmetry caused by scar tissue tension, a PSU Nasal Clip was applied one week after surgery, once the upper lip and nasal structures had healed. The clip provided postoperative nasal support and helped maintain the patient's nostril morphology.

Discussion and Conclusion

Dental treatment planning depends on the severity of the cleft and nasal asymmetry. The main goals are to restore feeding function and improve facial esthetics.

Scar contraction after cheiloplasty may cause relapse of the repaired nostrils, making postoperative nasal support essential for maintaining surgical correction. The PSU Nasal Clip was designed as a compact appliance consisting of two small acrylic components with airway lumens connected by an adjustable bridge. It is placed separately from the intraoral obturator, making it less visible and easier to clean in daily use.

In this patient, the PSU Nasal Clip provided post-operative nostril support and helped maintain the postoperative nasal shape during the early stage.

References

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