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Is Postoperative Nasal Stenting Necessary After Primary Cleft Lip and Nose Repair?

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BACKGROUND

There is variability in surgeon's preferences for how the cleft lip nasal deformity is treated as part of the primary cleft repair (cheilorhinoplasty), which includes no universally accepted protocol for nostril retainer stents. Some surgeons perform a primary rhinoplasty at the time of cleft lip repair, with little consensus in using open versus endonasal approaches, early septal repositioning, and degree of overcorrection in lower lateral cartilages repositioning.¹

Following primary cleft lip and nose repair, some relapse of the cleft nasal deformity is common due to cartilage memory and contraction. Surgeons who advocate for postoperative nasal stenting argue that the soft tissues can be conformed to the desired shape. Ideally, long-lasting aesthetic and functional cleft lip and nasal outcomes could be achieved with codified surgical choices with or without nasal stenting.

Due to the variance in the types of nasal stents (Fig. 1), duration of use, and surgical technique, there is an opportunity to outline the indications for nasal stents following primary lip and nose repair.

LITERATURE REVIEW

Numerous studies report generally favorable outcomes with the use of nostril stents following primary cleft lip and nose repair; however, nearly all reports are based on empiric assessments of nasal anatomy and

symmetry. Despite a paucity of evidence-based studies, two retrospective reports demonstrate favorable nasal outcomes based on objective measurements in comparison with a control group.

Yeow et al. compared two groups of 3-month-old infants ($n = 30$) who were either treated with nasal stents for 6 months or no stenting after repair of a unilateral complete cleft lip with primary rhinoplasty.² NAM was not used. Photographs were graded at 5–8 years of age, demonstrating improved nasal appearance, symmetry, alar cartilage slump, alar base level, and columella tilt in the nostril stent group compared with controls.

In a more recent 2022 comparative retrospective study, Al-Qatami et al. divided 50 infants undergoing unilateral cleft lip repair into a stenting and no stenting group.³ In contrast to the study by Yeow et al., all individuals also completed preoperative NAM, followed by primary lip repair and rhinoplasty at 3 months of age. Cephalometric measurements were compared on nasal casts created during the palatoplasty. Most of the specific nasal measurements and nasal symmetry were improved in the nasal stenting group.

A systematic review of the literature on the role of postoperative nasal stents following cleft rhinoplasty was published in 2023 by Nguyen et al.⁴ Nine studies included 269 patients with nasal stent use following primary cleft rhinoplasty. Unfortunately, none of the included studies were of high-level evidence. There was heterogeneity among the materials used for stent fabrication, with some repurposing durable medical equipment (e.g. nasal oxygen cannulas), but the majority utilized prefabricated, commercially produced nasal stents. Regarding the stent duration recommended, most studies report at least 6 months of use. The aggregate of data presented in this review suggests that nasal stenting is safe with a low rate of minor complications and a likelihood of favorably preserving nasal shape and symmetry.

As cleft surgeons, we recognize the burden that the parents face in keeping nasal stents in for weeks or months. To address this concern of parental quality of life, a survey study by Hennocq et al. asked parents ($n = 72$) to recall their preoperative understanding of the

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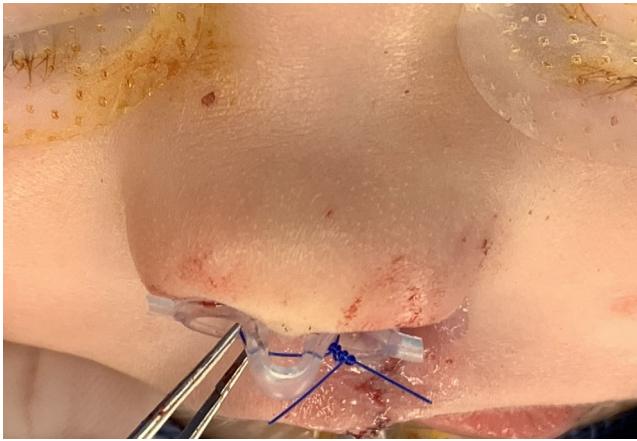


Fig. 1. Intraoperative photograph of infant's nose after cleft lip and nose repair with nasal conformers held by forceps and positioned by temporary suture fixation. [Color figure can be viewed in the online issue, which is available at www.laryngoscope.com.]

stents and the infant's tolerance of the nasal stents after surgery.⁵ The survey results did not find any negative effect on quality of life, yet in practice, the ability of the caregiver to commit to the stent placement is imperative and should be considered.

BEST PRACTICE SUMMARY

The evidence suggests that postoperative nasal stents are beneficial if used for 3–6 months by a hypothesized mechanism of hindering the contraction and regression of the surgically repositioned lower lateral

cartilages. The advantages of stents must also be contrasted with the potential for parental stress in caring for the nasal stents, feeding difficulties with obstructed stents and a small risk of complications, such as pressure-related skin injury. Although the duration of nasal stent use after primary cleft rhinoplasty was between 3 and 6 months in the above studies, partial benefit is likely gained from shorter stent durations, which the surgeon can consider in the context of the cleft lip nasal deformity severity, use of preoperative NAM, and nasal overcorrection performed with primary rhinoplasty techniques.

LEVEL OF EVIDENCE

Nguyen et al. is a level 2 study. Murali et al., Yeow et al., Al-Qatami et al., and Hennocq et al. are level 3 studies.

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