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Short Communication

A novel and cost-effective technique for securing the nasal septum to the anterior nasal spine in septoplasty and/or rhinoplasty surgery[☆]

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ABSTRACT

Septoplasties and septorhinoplasties are common procedures in otolaryngology, aimed at addressing septal and/or bony pyramidal deflections to improve functional and cosmetic outcomes. The nasal septum as well as regulating air flow provides structural support to the nasal tip. The attachment of the nasal septum to the anterior nasal spine must be structurally resilient to prevent saddling or tip ptosis. This can be achieved by direct attachment with absorbable suture material to the periosteum of the anterior nasal spine or a drill fitted with 0.6mm diamond tip burr (Ultrabur, Invotec International), to create channel through which the nasal spine can be secured to the anterior nasal spine. We describe a novel, and cost-effective alternative utilising a blunt fill needle and simple absorbable suture. A blunt fill needle (Sol-Millennium®, cost £0.03 per unit) is passed through to form a securing channel. The neoseptum is then secured using a figure-of-eight suture. Our novel technique enables the nasal septum to be secured to the anterior nasal spine in a cost effective and efficient manner.

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Introduction

Septoplasty and septorhinoplasty are common procedures in otorhinolaryngology, aimed at addressing structural deformities within the nose to improve functional and cosmetic outcomes. A deviated caudal nasal septum (NS) requires detailed attention, extending beyond a traditional septoplasty approach due to both the functional and aesthetic challenges posed. Severe deflections commonly necessitate reconstruction via an extra-corporeal approach, which involves an en-bloc resection of the cartilaginous and/or bony NS, modification, and subsequent re-insertion. An open approach to severe deflections provides enhanced visualisation of the surgical field for both dissection and re-implantation/ positioning. The NS as well as regulating air flow, has fundamental importance in providing structural support to the nasal tip, thus methods utilised to secure the NS to the anterior nasal spine (ANS) must be structurally resilient to prevent saddling or tip ptosis. This can be achieved by direct attachment with absorbable and non-absorbable suture material to the periosteum of the ANS.¹ Alternatively, the operator may choose to utilise a drill^{2,3} fitted with 0.6 mm diamond tip burr (Ultra-burr, by Invotec International), to create a direct channel through which the NS can be attached directly to the ANS. This method provides a reduced risk of slippage in contrast to the aforementioned technique,⁴ although this may prove time consuming and non-cost effective. We describe a novel, and cost-effective method to secure the caudal aspect of the NS to the ANS by means of utilising a blunt fill needle and simple absorbable suture.

Technical description

For the purposes of this paper, the authors have assumed an open approach is undertaken to approach the deflected NS, and the caudal aspect is mobile from the ANS. Topical decongestion is achieved through topical Co-Phenylcaine solution. Three vials of Lignospan (2% Lidocaine and 1:80,000 Adrenaline) are infiltrated within the soft tissues, and a standard approach to the mid-nasal vault is achieved using an inverted “V” trans-columellar incision, with subsequent soft tissue elevation. Bilateral mucoperichondrial flaps are elevated, with sharp dissection necessary to maintain a continuous flap through the dense decussating fibres when exposing the NS at its junction with the ANS, and an inferior osteotomy may be warranted to free the caudal septum from the ANS and maxillary crest (Figure 1). The entire osteocartilaginous framework is then evaluated and decision made regarding the approach to correct the deflected septum. Once the ANS has been well defined, a blunt fill needle (Sol-Millennium®, cost £0.03 per unit) is passed through in a perpendicular plane, using a constant oscillating rotatory motion by hand (Figure 2). A constant pressure is maintained as the needle slowly passes through the nasal spine. Once a channel has been created, the neoseptum is secured using a 5.0 Polydioxanone (PDS) figure-of-eight suture (Figures 3 and 4). Columellar, domal, marginal, quilting and skin sutures are placed to complete the procedure. Post-operative antibiotics are not routinely administered by the authors. After topical application of Friar’s Balsam, adhesive dressings are applied in combination with an adequately sized thermoplastic splint to minimise soft tissue swelling and/or camouflage graft displacement (if utilised).

Discussion

All procedures are undertaken as day cases with patients followed-up post-operatively at day seven for removal of trans-columellar sutures, adhesive dressings, and thermoplastic splint. Further re-assessment is undertaken at three, nine and 12 months, for evaluation of functional and aesthetic outcomes. In our case series of 48 procedures, we are yet to report any significant tip ptosis or saddling secondary to slippage, which advocates our method as a cost and time-effective strategy to secure the NS to the ANS. Retrospective analysis of our single surgeon, single centre data of all open septoplasties and septorhinoplasties, was undertaken over a four year period to evaluate overall outcome using our novel technique. Inclusion criteria was a minimum follow-up period of 9 months, with a mean follow-up period of 13.2 months documented. A total of 48 cases were identified, with no slippage/ saddling identified on clinical follow-up.

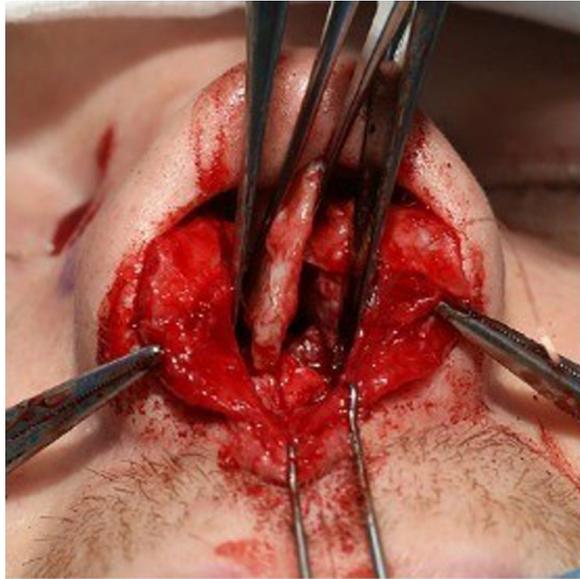


Figure 1. Septum detached from anterior nasal spine.

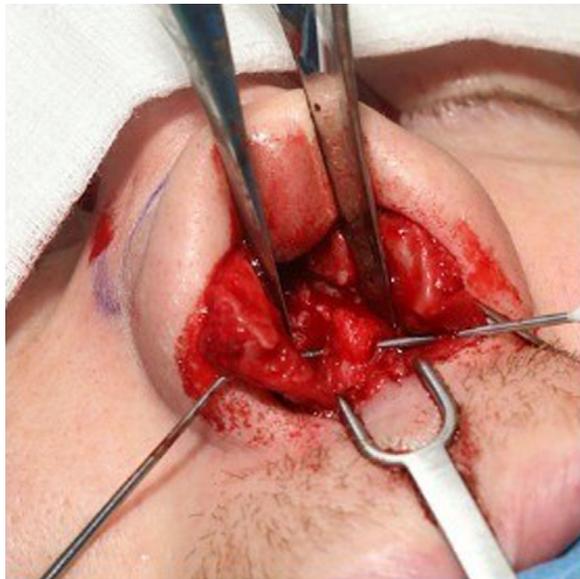


Figure 2. Channel created through anterior nasal spine using drawing needle.

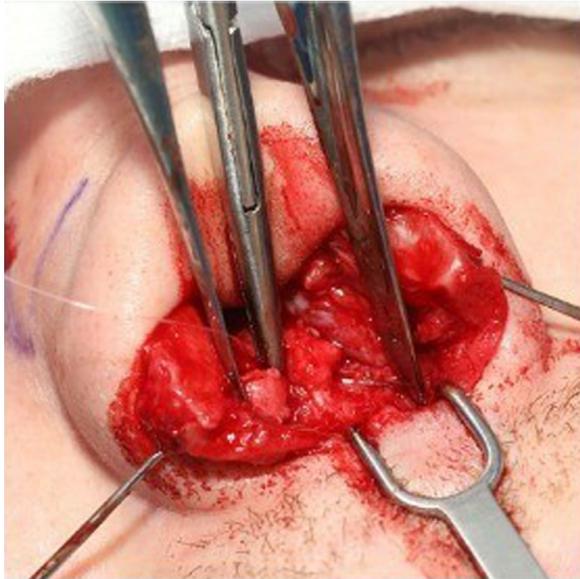


Figure 3. Figure of eight suture to secure septum to anterior nasal spine using 5.0 PDS.

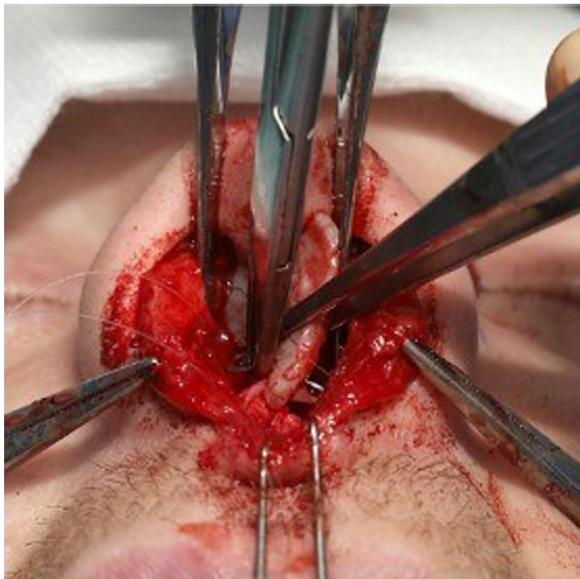


Figure 4. Figure of eight suture to secure septum to anterior nasal spine using 5.0 PDS.

Conflict of interest statement

The authors whose names are listed have no affiliation or involvement in an organisation or entity with a financial or non-financial interest in the subject matter or materials discussed in this manuscript.

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Supplementary material

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.jpra.2019.06.001](https://doi.org/10.1016/j.jpra.2019.06.001).

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