

Septal Cartilage Island: A Novel Technique to Address Septal Deviation and Protect the Septum During Endoscopic Skull Base Surgery

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INTRODUCTION

Endoscopic endonasal approaches to the skull base require frequent instrumentation through the nasal corridor, and both visualization and access can be inhibited by septal deviation. Standard septoplasty techniques involve resection of deviated cartilage, which increases the risk of damage to bilateral mucosa (or in cases of a nasoseptal flap, unilateral mucosa) during repeated insertion of instruments, potentially increasing the likelihood of perforation. Reported septal perforation rates after cases involving nasoseptal flap (NSF) harvest are as low as 1.3–2% in some series,^{1,2} but another series of 121 patients listed a complications rate of 27%, many of which were perforations.³ This suggests possible underestimation, particularly of more posterior or asymptomatic perforations. While devices such as SPYWAY endonasal access guides may reduce mucosal trauma, they add procedural cost.

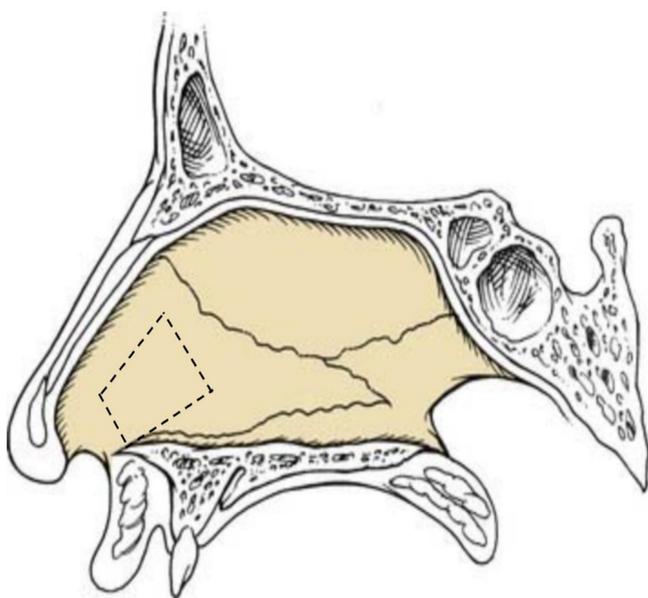
PURPOSE

We describe a novel “septal cartilage island” technique designed to relieve obstructive septal deviation while preserving most of the septal integrity and minimizing mucosal injury and full-thickness septal lacerations during skull base procedures.

METHOD

Using a standard septoplasty approach, a unilateral mucoperichondrial flap is elevated. Rather than cutting and resecting the deviated anterior cartilage, a high-speed drill is used to outline and drill a border around the deviated segment, carrying this down to the contralateral mucoperichondrium. This maneuver leaves a freely mobile “island” of cartilage still attached to the contralateral mucoperichondrium. The island can be mobilized to no longer obstruct the nasal passage on either side of the septum, while simultaneously acting as a protective buffer against mucosal trauma from repeated instrumentation.

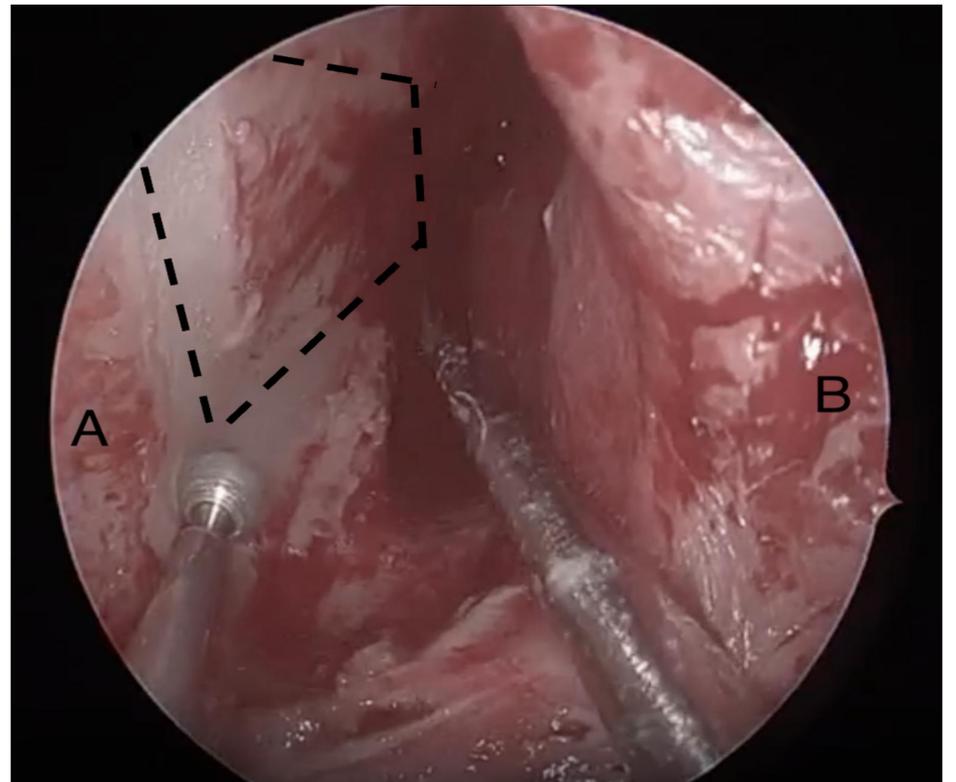
FIGURE 2



Sagittal view of nasal septum

Dashed line indicates the borders along the quadrangular cartilage that are drilled down to contralateral mucoperichondrium to create a mobile segment of cartilage

FIGURE 2



Endoscopic View, Left Nasal Cavity

A: caudal septum. B: nasal ala. Dashed Line: borders of the the deviated septum being drilled down to contralateral mucoperichondrium.

RESULTS

The septal cartilage island technique appears to be a feasible approach that preserves the majority of the nasal septal cartilage and avoids cartilage resection in cases of deviated septum. This may help avoid extensive full-thickness lacerations during surgery. By avoiding septoplasty, this technique also prevents the fusion of one mucoperichondrial layer with the contralateral side, which can make future harvest of a NSF more challenging.

CONCLUSION

The septal cartilage island represents a simple, reproducible modification of septoplasty that facilitates skull base access while preserving most of the septal integrity and prevents the healing of one mucoperichondrial layer with the contralateral side. By reducing mucosal trauma and mitigating the risk of perforation, this technique may serve as an effective alternative to both cartilage resection and costly stent-based strategies. Further prospective evaluation is warranted to validate its role in routine endoscopic skull base practice.

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