Superiorly-based chondromucosal septal flap: A novel technique in the transseptal sublabial approach to the sphenoid sinus

Christian P. Hasney, MD1; Akash G. Anand, MD1; R. Brent Butcher, MD2

1Tulane University School of Medicine, Department of Otolaryngology, New Orleans, LA
2Ochsner Medical Center, Department of Otolaryngology, New Orleans, LA

ABSTRACT

The transseptal sublabial approach to the sphenoid sinus is a time-honored technique in pituitary surgery. The standard surgical procedure provides excellent surgical exposure and carries minimal morbidity. This technique typically involves raising bilateral mucoperichondrial septal flaps and, occasionally, resection of a portion of the quadrangular cartilage. While generally well-tolerated, this procedure presents a small but significant risk of septal perforation. Revision procedures, especially those following primary surgery involving resection of the quadrangular cartilage, bear an increased risk of septal perforation. Theoretically, the risk of septal perforation could be minimized by maintaining the integrity of the chondromucosal septum. In this report, we describe a transseptal sublabial approach to the sphenoid sinus in which the cartilage and mucosa are left intact.

INTRODUCTION

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SURGICAL TECHNIQUE

The patient is prepped and draped in the standard fashion for transseptal/sublabial pituitary surgery. The nose is packed with cotton balls soaked in topical decongestant solution. The nasal septum, nasal floor, and upper gingivobuccal sulcus are injected with local anesthetic solution with epinephrine.

After adequate time has elapsed to allow for vasoconstriction, a hemitransfixion is made and carried inferiorly to the lateral-most aspect of the nasal floor. A subperiosteal tunnel is elevated over the nasal floor and extending to the choana. The most lateral aspect of the mucoperiosteum of the nasal floor is then sharply incised. Finally, an incision is made beginning at the superior-most aspect of the sphenoid rostrum and connecting with the incision along the nasal floor.

At this time the superiorly-based flap is complete (see figure at right). Next, the flap is dissected over the maxillary crest and displaced into the contralateral nasal cavity. Finally the intraoral incision is carried out and joined with the intranasal portion of the dissection via the pyriform aperture. A self-retaining speculum is placed and the neurosurgical portion of the procedure is performed.

After resection of the pituitary tumor, the sublabial incision is closed with absorbable sutures. The cartilaginous portion of the chondromucosal flap may be secured to the remaining nasal spine. The superiorly-based flap is replaced and the hemitransfixion incision is closed in the standard fashion. Septal splints and nasal packing are placed. Packing is generally removed 48 hours after surgery and splints on post-operative day 7-10.

DISCUSSION

Sublabial transseptal approaches to the sella offer an excellent, low-morbidity means of exposing pituitary tumors. Common otolaryngologic complications include sinusitis, nasal obstruction, upper lip hypesthesia, and septal perforation. Septal perforation has been reported to occur in up to 9% of cases. It has been postulated that septal perforations occur in part, due to excessive spreading of the septal leaflets by the self-retaining speculum. One distinct advantage of our technique is the avoidance of creation of traditional septal leaflets. Our flap is elevated and retracted laterally in a monobloc fashion, creating a hearty, multi-layered entity which is resistant to septal perforation.

Another advantage of our technique is the limited closure required at the conclusion of the case. The flap is simply reaproximated in the midline with closure of the hemitransfixion incision with or without reattachment of the septum to the maxillary crest. This minimal closure reduces operating time an, in many cases, avoids manipulation of tissue compromised by prior operations.

REFERENCES


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