

Original Research Article

## Outcome Study of Septoplasty with Transseptal Sutures without Postoperative Nasal Packing

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### ABSTRACT

**Background:** It is part of improvement in quality and practicality of ENT surgical technique.

**Method:** Pack free nasal septoplasty, employing transseptal sutures, was performed in 24 adult patients with nasal septum deviation. Nasal obstruction symptom evaluation (NOSE) scale was used to assess postoperative outcome in relief of nasal obstruction.

**Result:** Eighty (80) % cases were relieved with over 50% reduction of NOSE score. Minor bleeds, controlled without pack, were the commonest early complication seen in 30% cases. One patient each had long term (3 month) problems of nasal synechia and flap over position.

**Conclusion:** The procedure yields highly satisfactory results, except for cases with posterior deviation of septum. Such patients would particularly suffer flap over position and not suitable for the procedure.

**Keywords:** Nasal septum deviation; Packless septoplasty; Septoplasty; Transseptal suture.

### INTRODUCTION

In order to maintain haemostasis, graft stability and support of septal flaps, nasal splints and packing have routinely been resorted to. Nasal packing, however, associates complications, as formation of nasal synechiae, septal perforation and infection.<sup>(1,2)</sup> An alternative, pack free septoplasty, employing transseptal sutures has been proposed, towards reducing the later.<sup>(3)</sup> Functional outcome of pack free septoplasty, employing transseptal sutures, in a series of 24 patients, is reported here, employing Nasal Obstruction Symptom Evaluation (NOSE) scale (Table 1).

### MATERIALS AND METHODS

It was a prospective study at Krishna hospital and research centre, Haldwani, Uttarakhand, north India, between September 2014 to August 2015, conducted with approval of local research ethics committee and with informed written consent from patients. NOSE scale has been proposed, to assess nasal obstruction by the American Academy of Otorhinolaryngology.<sup>(4,5)</sup> The same is described below and was used to measure surgical outcome in our cases.

**Table 1: Nasal Obstruction Symptom Evaluation (NOSE) scale**

S. No	Symptom	Score				
		N	M	M	M	S
1.	Nasal congestion	0	1	2	3	4
2.	Nasal Blockage	0	1	2	3	4
3.	Trouble in nose breathing	0	1	2	3	4
4.	Trouble sleeping	0	1	2	3	4
5.	Insufficiency of nasal breathing on exertion	0	1	2	3	4

Consecutive 24 patients, with complaints relating, nasal obstruction and septal deviation, comprising 15 males and 9 females, between ages from 18 year to 54 year (median 29), were enrolled for septoplasty study. Exclusion criteria were cases with nasal polyp, allergic rhinitis, major systemic diseases, history of bleeding disorder, anticoagulant medication use and history of any nasal surgery. Good outcome of septoplasty operation was taken as, 50% reduction in preoperative NOSE score.

Septoplasty procedure by Cottles method, under general anaesthesia, was performed and transseptal horizontal mattress sutures were placed, using 4/0 polyglactin 910. Three to 5 transseptal sutures were placed in the septum. No nasal pack or splint was used. Patients were administered perioperative prophylactic antibiotic, cefazolin and postoperatively, paracetamol as analgesic. Nasal lavage was started 4 hours post operation, with buffered saline and given 4 times a day. Patients were reexamined, after 2 and 5 days, for occurrence of any bleed, septal haematoma or nasal synechia. Nasal lavage continued for 2 weeks. For 3 months post operation, patients were forbidden use of any nasal decongestant or steroid. NOSE score, at 3 month after operation was elicited and compared with the preoperative score. Additionally, any complications were recorded.

## RESULTS

Nineteen of the 24 patients, attained more than 50% reduction in their preoperative NOSE score and considered recovered from nasal obstruction. Seven patients suffered minor bleeds. One patient developed nasal synechia. Another patient suffered failure of attachment of mucoperichondrium to septum (i.e. flap over position). This occurred in posterior septal area. No instances of major bleed, septal haematoma or perforation occurred.

## DISCUSSION

Merocel or Telfa nasal packing is done after septoplasty, with aim to prevent bleeding, haematoma or synechia formation. Animal experiments have, however, failed to reveal, significant difference between nasal packing and transseptal sutures, in regard to mucosal injury, cartilage thickness and attachment of the mucoperichondrium.<sup>(6)</sup> Nasal pack is found, also, to inflict increased oxidant stress.<sup>(7)</sup> Use of transseptal sutures, in this study, resulted in no instances of septal perforation, supporting the technique, as safe.

Pack free septoplasty did not result in any instance of persistent septal deviation in the case series. The rate of success was undermined by instances of nasal synechia and flap over position. In a comparative study,<sup>(4)</sup> no difference was found in prevalence of nasal synechia, crusting or granuloma formation between packed and unpacked groups. In present case series, nasal synechia developed in one patient, but no perforation at 3 month follow up. Flap over position is likely when mucoperichondrium flap is required to be raised until posterior septum. In the case, that developed flap over position, suture plus nasal packing was reapplied. Patients with posterior septal deviation are, likely, unsuitable for packless septoplasty. In this series, rate of minor bleed was much higher than reported,<sup>(8)</sup> however, they were readily controlled without need for packing.

Absorbable materials, instead of nasal packing are developed, as fibrin glue, Toscal and Merogel.<sup>(9,10)</sup> Their use in endonasal surgery should reduce morbidity. They may, particularly, suit the cases with risk of flap over position. However these agents are costly and reported to delay healing.<sup>(11)</sup> Nasal splints are very inconvenient option and cause pain, though, considered to reduce risk of complications.<sup>(12)</sup> Overall, findings of this case series, support efficiency and negligible complications of packless septoplasty, using

transseptal sutures. Wider adoption of the approach should be welcome.

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