

Complications of Post Septoplasty Nasal Packing and Trans-septal Suturing

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ABSTRACT

Objective To find out complications of nasal packing and trans-septal suturing during septoplasty procedure for deviated nasal septum (D.N.S.).

Study design Descriptive case series.

Place & Duration of study Department of E.N.T. and Head & Neck Surgery, Liaquat University Hospital Jamshoro / Hyderabad, from June 2014 to May 2016.

Methodology Patients of either gender of 17 year or more of age with symptomatic deviated nasal septum and needing septoplasty, were included in the study. They were randomly divided into groups A and B representing the nasal packing group and trans-septal suturing group respectively. Complications were noted in both the groups following surgery.

Results A total of 316 patients were included in the study. There were 207 (65.5%) males and 109 (34.5%) females. The age range was from 17 year to 52 year with the mean age of 27.83 year. In this study most common complications noted were nasal pain, headache, postnasal dribbling, sleep disturbance and epiphora. All these complications were more commonly observed in nasal packing group.

Conclusion Trans-septal suturing addressed the purpose of nasal packing effectively and safely with fewer postoperative complications.

Key words Septoplasty, Nasal packing, Trans-septal suturing.

INTRODUCTION:

Deviated nasal septum is the nasal structural defect which affects more than three fourth of general population worldwide.¹The right option to relieve a symptomatic D.N.S. is septoplasty operation which is believed to be one of the most favored surgical procedures in otolaryngology clinics globally. Traditionally, nasal packing in both the nasal cavities has been an essential component of septoplasty to prevent postoperative bleeding and hematoma formation. Additional purposes include

better approximation of mucoperichondrial flaps, stabilization of the repositioned fragments of cartilage and bones and prevention of adhesion formation between lateral wall of nose and the septum.² For packing, different materials including ribbon gauze, glove fingers, gel foam, surgicel and polyvinyl alcohol sponge packs impregnated with lubricant and antibiotic ointment are available.^{3,4} Insertion of nasal packing, its retention in nasal cavities for 24-48 hours and its removal has remained the most frightening nightmare for the patients undergoing septoplasty operation. This fear has been the most important reason of patients avoiding and lingering on the needed surgery. Nasal packing is associated with many complications.^{1,5,6}

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In seeking alternative suturing of the nasal septum following septoplasty to approximate the mucosal flaps is suggested.⁷ For this purpose many suturing techniques have been described.^{2,8} Some surgeons

also use endoscope for suturing the septum with precision.⁹ This study was conducted to find out the frequency and severity of postoperative complications after septoplasty operation with nasal packing and trans-septal suturing so as to find out which was more effective in septoplasty operation.

METHODOLOGY:

It was a descriptive study conducted at the Department of E.N.T. and Head and Neck surgery Liaquat university hospital Jamshoro / Hyderabad from June 2014 to May 2016. A total of 316 consecutive patients of either gender above 17 year of age with symptomatic D.N.S. and needing septoplasty were included. All the patients having rhino sinusitis and those who had previous nasal surgery, bleeding and clotting disorders, uncontrolled systemic diseases like diabetes mellitus and hypertension etc, and patients on anti-coagulant therapy, were excluded from the study.

All the operations were done under general anesthesia. After surgery, as per consecutive queue, nasal packing or septal suturing was done. Those having nasal packing were assigned group A while those in whom septal suturing was done assigned group B. A total of 158 patients were registered in each group. Nasal packing was done with ribbon gauze impregnated in liquid paraffin and polymyxin-B antibiotic ointment. Septal suturing was done with 4/0 polyglycolic acid rapide suture. Different surgeons performed trans-septal suturing in different patterns ensuring the coverage of sufficient area of nasal septum to avoid the nasal bleeding and septal hematoma. Xylometazoline nasal drops were used in group B patients in immediate postoperative period prophylactically as well as when required. Data were

entered into SPSS version 16. Descriptive statistics were used to present data.

RESULTS:

A total of 316 patients underwent septoplasty procedure. There were 207 (65.5%) male and 109 (34.5%) female patients. Age ranged from 17 year to 52 year with the mean age of 27.83 year. Most of the patients (n=58 - 18.4%) were 20 year of age. Most (n=123 - 38.9%) of the patients belonged to 11-20 year of age group. Complications are given in table I most important of which are nasal pain (n=140 in group A and n=21 in group B), headache (n=144 in group A and 18 in group B). All complications were more commonly noted in group A patients with nasal packing.

DISCUSSION:

To correct the nasal septal deviation, the most favored and recommended surgical procedure globally is septoplasty.¹⁰ One of the innovations in septoplasty is the use of trans-septal suturing with absorbable sutures of suitable thinness in place of nasal packing. Many complications are reported with the use of nasal packing of which nasal pain is most common. The pain may result from the pressure exerted by the pack, surgical trauma to the nasal mucosa and the tension of stitches applied to the nasal septum. Most of the studies measured and compared nasal pain by visual analogue scoring and showed significantly more score in packing group versus suturing group.^{11,12,13} Same were the observations in the current study.

Septal hematoma is believed to be an outcome of bleeding and clotting disturbance coupled with improper hemostasis. In current study 4.43%

Table I: Postoperative Complications

Postoperative Complications	Group A (Nasal Packing) n=158	Group B (Trans Septal Suturing) n=158
Nasal Pain	140 (88.60%)	21 (13.29%)
Headache	144 (91.13%)	18 (11.39%)
Postnasal Dribbling	139 (87.94%)	34 (21.51%)
Sleep Disturbance	145 (91.77%)	27 (17.08%)
Epiphora	149 (94.30%)	19 (12.02%)
Septal Hematoma	07 (4.43%)	00 (0%)
Septal Perforation	03 (1.89%)	00 (0%)
Nasal Bleeding	08 (5.06%)	03 (1.89%)
Excessive Crusting	07 (4.43%)	02 (1.26%)
Synechiae Formation	10 (6.32%)	01 (0.63%)

developed septal hematoma. All these were in nasal packing group patients. No such event was seen in trans-septal suturing group. Other studies have reported similar observations.^{5,13,14}

The main causes of septal perforation include careless surgery, pressure necrosis by bulky nasal pack or by the use of needle and suture of unusual thickness. In the current study, only 1.89% patients developed septal perforation in nasal packing group compared with no such event in trans-septal suture group. Cukurova et al encountered 3.2% septal perforations in packing group versus 2.2% in non-packing suture group in their study.⁵

Sleep disturbance is believed to be due to airway obstruction and pain caused by the nasal pack. It may also occur due to surgical trauma to the tissues with resultant edema. The current study noted significant sleep disturbance on first postoperative day in 91.77% and 17.08% in packing and non-packing suture groups respectively. Similar results were found in other studies and ranged from 51% to 82 % in packing group compared with 14% to 16% in non-packing suture group.^{12,14,15}

Postoperative headache usually occurs due to blockage of sinus ostia with vacuum creation in the sinuses as a result of impaired ventilation. This may transform into pressure pain due to stasis of secretion. These events develop due to edema caused by surgical trauma in the operative field as well as by the packing in the nasal cavities. In the current study, the event of postoperative headache was 91.13% in packing group compared with 11.39% in trans-septal suturing group. This observation matches well with other studies endorsing significant postoperative headache in nasal packing group versus non-packing suture group.^{12,16,17}

Post nasal dribbling may be attributed to the reaction of nasal mucosa by production of increased secretion in response to the presence of nasal pack or suture material acting as a foreign body. This was observed more in group A. Similar were the observations in other series.

CONCLUSION:

Trans-septal suturing was effective in serving all the purposes of nasal packing effectively without increasing the frequency of complications.

REFERENCES:

1. Said SM, Abdulrazzaq AF. Effect of trans-septal suture technique versus nasal packing after septoplasty. *Int J Tech Resarch App.*

2015;3:33-40.

2. Lemmens W, Lemkens P. Septal suturing following nasal septoplasty. A valid alternative for nasal packing? *Acta Otorhinolaryngol Belg.* 2001;55:215-21.

3. Shah S, Kumari S, Pradha B, Thapa N. Outcomes of endoscopic quilting of nasal septum versus nasal packing following septoplasty. *Internet J Otorhinolaryngology.* 2010;13:1-5.

4. Daneshrad P, Chin Gregory Y, Rice Dale H. Fibrin glue prevents complications of septal surgery: findings in a series of 100 patients. *Ear Nose Throat J* 2003;82:196-8.

5. Cukurova I, Cetinkaya EA, Merecan GC, Demirhan E, Gumussoy M. Retrospective analysis of 697 septoplasty surgery cases: Packing versus trans-septal suturing method. *Acta Otorhinolaryngologica Italica.* 2012;32:111-4.

6. Cetral V, Silva H, Santos T, Correia A, Carvalho C. Trans-septal suturing technique in septoplasty: a systemic review and meta-analysis. *Rhinology.* 2012;50:236-45.

7. Session RB. Membrane approximation by continuous mattress sutures following septoplasty. *Laryngoscope.* 1984;94:702-3.

8. Lee IN, Vukovic L. Hemostatic suture for septoplasty: How we do it. *J Otolaryngol.* 1988;17:54-6.

9. Hari C, Marnane C, Wormaid PG. Guilting sutures for nasal septum. *J Laryngol Otol.* 2008;122:522-3.

10. Sedwick JD, Lopez AB, Gajerwski BJ, Simons RL. Caudal septoplasty for treatment of septal deviation: aesthetic and functional correction of the nasal base. *Arch Facial Plast Surg.* 2005;7:158-62.

11. Ardehali MM, Bastaninejad S. Use of nasal packs and intra nasal septal splints following septoplasty. *Int J Oral Maxillofacial Surg.* 2009;38:1022-4.

12. Awan MS, Iqbal M. Nasal packing after septoplasty: A randomized comparison of packing versus no packing in 88 patients.

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- Ear Nose Throat J. 2008;87:624-7.
13. Gunaydin RO, Aygene E, Karakullukeu S, Fidan F, Celikkanat S. Nasal packing and transseptal suturing techniques: Surgical and anesthetic perspectives. *Eur Arch otorhinolaryngol.* 2011;268:115-6.
14. Al-Shehri AMS. Aseessment of complications of nasal packing after Septoplasty. *Med J Cairo Univ.* 2011;79: 111-3.
15. Devi PS, Bhutia TJ, Lyngdoh N , Kumar S, Bhutia NN, Babu P. A comparative study of septoplasty with and without nasal packing. *Nat J Otorhinolaryngol Head Neck Surg.* 2014;2:15-7.
16. Walikar BN, Rashinkar SM, Watwe MV, Fathima A, Kakkeri A. A comparative study of septoplasty with or without nasal packing. *Ind J Otolaryngol Head Neck Surg.*2011;63:247-8.
17. Korkut AY, Teker AM, Eren SB, Gedekli O, Askiner O. A randomized prospective trial of transseptal suturing using a novel device versus nasal packing for septoplasty. *Rhinology.* 2010;48;179-82.

Author's Contributions:

Muhammad Shafi: Designed the study protocol, collected, analyzed the data and wrote the manuscript.

Conflict of Interest:

The authors declare that they have no conflict of interest.

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