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ORIGINAL STUDY

Comparison results of nasal septum suturing and nasal packing following septoplasty

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ABSTRACT

BACKGROUND. Septoplasty is routinely used to resolve the deviated nasal septum. To obviate postoperative complications, some surgeons pack both nasal cavities and some other use suturing techniques after septoplasty.

OBJECTIVE. To investigate the efficacy of septal suturing and packing in patients post-septoplasty.

MATERIAL AND METHODS. This study was conducted in the Department of Otorhinolaryngology, Loghman Hakim, Tehran, Iran. 146 patients aged 17 years and above were enrolled for septoplasty. Septal suture was performed in 73 patients (group A) and nasal packing in the other 73 patients (group B). The principal outcomes in terms of bleeding, pain, respiratory problems, septal hematoma, adhesion and perforation were measured over a post-operative follow-up period.

RESULTS. A total of 146 patients, 74% female and 26% male, were enrolled. There were statistically significant differences between the two groups with respect to respiratory problems and patient comfort ($p<0.001$). The patients in both groups had no septal perforation.

CONCLUSION. Septoplasty using trans-septal suturing without packing can be safe and suitable to prevent or minimize post-operative complications.

KEYWORDS: septoplasty, nasal packing, septal suturing.

INTRODUCTION

The nasal septal deviation is one of the most common causes of referred patients to otorhinolaryngology clinics. The most patients have to undertake septoplasty due to nasal airway obstruction, sleep apnea or recurrent nasal infections[1]. Septoplasty is a surgical procedure used to correct a deviated nasal septum. This surgery can induce serious complications, such as bleeding, septal perforation or nasal deformities[2]. There are multiple procedures for minimizing these complications. One of the most common procedures is postoperative packing. The nasal packing may prevent or decrease bleeding, septal hematoma, displacement of the nasal septum and then nasal deformities. Despite these possible benefits, there are potential disadvantages like mucosal damage, septal perforation, obstructive apnea during sleep, sensitivity and toxic shock syndrome[2,3]. In order to prevent these problems, some surgeons use various techniques of suturing instead of nasal packing after septoplasty, but not enough evidence was found to support this practice. We compared outcomes of septoplasty in patients with postoperative packing and trans-septal suturing.

MATERIAL AND METHODS

This study was a comparative study approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran, in 2017. The patients who referred to Loghman Hakim Hospital for septoplasty were recruited.

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Study inclusion criteria:

- Age of 17 years and above;
- Candidates for septoplasty;
- Consent to participate in the study.
- Study exclusion criteria:
- History of previous rhinoplasty;
- Systemic disease such as diabetes, hypertension and blood disorders;
- Patients on steroid or anticoagulant therapy.

Informed consent was obtained from each patient before the enrolment. Sample size was considered 128 subjects based on effect size 0.5, type I error probability 0.05, 80% power and allocation ratio 1:1 using G* power version 3.1.9.2. According to the probability of withdrawal of 10%, the study was conducted on 146 patients that were allocated simply randomly to the study groups: Group A (n=73) - Apply suturing without packing, Group B (n=73) - Use nasal packing.

All septoplasties were performed by en ENT surgical team. Patients underwent general anaesthesia and were laid supine, in reverse Trendelenburg position. A 5ml solution of 1/100,000 adrenaline and 2% lidocaine was injected in the nasal septum; then, an incision was made at the level of the anterior third of the nasal septum on the left, and the right part and the perichondrial flap of the septum was elevated, the deviated portions (cartilage, bone or both) being entirely removed. In order to prevent external nose deformation, the nasal cartilage was preserved as much as possible and, at the end, the incision was closed using 4/0 Vicryl sutures. No nasal packing as splint was used in group A, unlike group B.

One of the authors was responsible for data collecting. Postoperatively, all patients were evaluated for postoperative complications. Nasal pain, bleeding, respiratory problems and patient comfort and satisfaction were subjectively investigated by using a visual analogue scaling (visual analogue scale -VAS; a scale between 1 and 10; 1 minimal, 10 severe). The development of hematoma, perforation and adhesion were objectively checked by an otorhinolaryngology specialist in an outpatient clinic of the hospital. Time scheduled for outcomes measurement was considered 24 hours, one week and four weeks after surgery. The investigator monitored patients based on determined times; in case of absence, the patients were contacted via telephone for a free visit.

Data were collected in excel and then transported to SPSS version 18 (SPSS Inc., Chicago, IL). Qualitative data were analyzed by using the Chi-square test. Continuous data were investigated by the student t-test. Statistical significance was considered less than 0.05.

RESULTS

A total of 146 patients were 108 (73.97%) female and the rest male (26.03%). The male to female ratio was estimated to be 1:2.6 and 1:2.8 in group A and group B respectively. The mean age was 25.3±3.2 in group A and 25.2 ± 3.3 in group B. No significant differences were found between groups with respect to demographic characteristics (p>0.05). Five patients from group A and 10 from group B had severe bleeding (p>0.05). The results presented in Table 1 show that there was no statistically significant difference regarding postopera-

Table 1
Postoperative complications in the group with suturing (Group A) and the group with nasal packing (Group B).

Variable	Group A(n=73)	Group B(n=73)	P-value
Age (Mean±SD)	25.3 ± 3.2	25.2 ± 3.3	NS
Sex (male:female)	1:2.6	1:2.8	NS
Severe Bleeding (n, %)	5 (6.8)	10 (13.7)	NS
Septal Hematoma (n, %)	0 (0.0)	5 (6.8)	NS
Severe Pain (n, %)	15 (20.5)	10 (13.7)	NS
Postoperative Adhesion (n, %)	0 (0.0)	3 (4.1)	NS
Patient's Satisfaction (n, %)	68 (93.2)	62 (84.9)	NS
Respiratory Problems	1 (1.4)	9 (12.3)	<0.001
Patient's Comfort (Mean±SD)	7.9± 0.9	6.0±1.3	<0.001

NS: Not significant (p>0.05)

tive nasal pain and septal hematoma. No septal perforation was detected in the two groups. In group A, besides of absence of septal hematoma, postoperative adhesion was not found.

Statistically significant results in terms of respiratory problems and patient's comfort were found between groups ($p<0.001$). However, the majority of the patients in each group had satisfaction from the procedures.

DISCUSSIONS

The majority of our patients were young females, which is opposite to the studies performed by Said et al. and Ansari et al[4,5] . Considering this, one may consider the intervention cosmetic surgery, which was not.

Postoperative bleeding and septal hematoma are two of the common morbidities of septoplasty. There are surgeons who believe that nasal packing can minimize these problems[6,7]. Our study, similar to some other studies, revealed no significant difference in bleeding between the two groups[4,8,9]; we found only 5 cases with nasal septum hematoma in the nasal packing group.

According to multiple evidences, postoperative pain is more common in septoplasty with nasal packing, but our finding was inconsistent and pain was slightly more in the suturing group[3,4,8,10]. Packing of both nostrils can restrict nasal respiration leading to hypoxia and/or sleep disorders. In such cases, the patients may have discomfort[10,11]. Patients in the suturing group had significantly less respiratory problems and a higher comfort score in comparison with the nasal packing group.

Postoperative adhesion was seen only in 3 patients from the nasal packing group four weeks after surgery and they needed reconstructive surgery. This finding was similar to the study of Awan[8]. There are also some studies which reported an incidence of adhesion in the non-packing cases[6,8,12,13].

We think suturing without packing can be a suitable technique instead of packing after nasal septum surgery. Since, in our study, there were no statistically significant differences between the study groups in what the postoperative complications are concerned, the results should be interpreted with caution.

CONCLUSIONS

Septoplasty using septal suturing without nasal packing can contribute to reducing surgical complications, like nasal bleeding, nasal septum hematoma, intranasal adhesion and respiratory problems. It seems this procedure can be safe and comfortable for the patients.

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REFERENCES

1. Ferguson BJ. Surgical Correction of Nasal Obstruction. In: Myers EN, editor. Operative otolaryngology: Head and neck surgery, Volume 2. 2nd ed. Philadelphia: Elsevier Saunders; 2008, p.17-26.
2. Rettinger G, Kirsche H. Complications in septoplasty. Facial Plast Surg. 2006;22(4):289-97.
3. Mane RS, Patil B, Mohite A. Comparison of septoplasty with and without nasal packing and review of literature. Indian J Otolaryngol Head Neck Surg. 2013;65(Suppl 2):406-8. DOI: 10.1007/s12070-013-0626-x.
4. Said SM, Abdulrazzaq AF. Effect of trans-septal suture technique versus nasal packing after septoplasty. IJTRA. 2015;3(4):33-40.
5. Ansari MA, Islam U, Hirani I, Khayani IAM, Kashmiri ZA. Trans-septal suturing technique without intra-nasal packing in nasal septal surgery. Pak J Surg. 2013;29(2):123-6.
6. Naghibzadeh B, Peyvandi AA, Naghibzadeh G. Does post septoplasty nasal packing reduce complications? Acta Med Iran. 2011;49(1):9-12.
7. von Schoenberg M, Robinson P, Ryan R. Nasal packing after routine nasal surgery–is it justified? J Laryngol Otol. 1993;107(10):902-5.
8. Awan MS, Iqbal M. Nasal packing after septoplasty: a randomized comparison of packing versus no packing in 88 patients. Ear Nose Throat J. 2008;87(11):624-7.
9. Dubin MR, Pletcher SD. Postoperative packing after septoplasty: is it necessary? Otolaryngol Clin North Am. 2009;42(2):279-85, viii-ix. DOI: 10.1016/j.otc.2009.01.015.
10. Cukurova I, Cetinkaya EA, Mercan GC, Demirhan E, Gumussoy M. Retrospective analysis of 697 septoplasty surgery cases: packing versus transseptal suturing method. Acta Otorhinolaryngol Ital. 2012;32(2):111-4.
11. Yiğit O, Cinar U, Uslu B, Akgul G, Topuz E, Dadas B. The effect of nasal packing with or without an airway on arterial blood gases during sleep. Kulak Burun Bogaz Ihtis Derg. 2002;9(5):347-50.
12. Kula M, Yuce I, Unlu Y, Tutus A, Cagli S, Ketenci I. Effect of nasal packing and haemostatic septal suture on mucociliary activity after septoplasty: an assessment by rhinoscintigraphy. Eur Arch Otorhinolaryngol. 2010;267(4):541-6. DOI: 10.1007/s00405-009-1119-0. Epub 2009 Oct 13.
13. Ardehali MM, Bastaninejad S. Use of nasal packs and intranasal septal splints following septoplasty. Int J Oral Maxillofac Surg. 2009;38(10):1022-4. DOI: 10.1016/j.ijom.2009.05.012. Epub 2009 Jul 4.