Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2014; 2(4D):1376-1380 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com **DOI:** 10.36347/sjams.2014.v02i04.046

Research Article

Septoplasty: Postoperative Alternative for Control of Haemorrhage and Discomfort

Rakesh Saboo[1]*, Amit Modwal[2]
[1]Assistant Professor, Department of Otorhinolaryngology, NIMS Medical College & Hospital, Jaipur, Rajasthan, India
[2]Professor,Department of Otorhinolaryngology, NIMS Medical College & Hospital, Jaipur, Rajasthan, India

***Corresponding author**
Rakesh Saboo
Email: saboo.rakesh@yahoo.com

Abstract: Deviated nasal septum is a common condition in Rhinology. Septoplasty is routinely performed for symptomatic deviated nasal septum. The most unpleasant part of this procedure is the pain during removal of conventional ribbon gauze packing. It is most commonly used for post-operative hemostasis. Post-operative hemostasis can be achieved by newer technique of quilt suturing, nasal septal splints and merocele nasal packing are employed. The objective of this study was to compare the result of septoplasty with or without post-operative nasal packing and there by asses the necessity of nasal packing. The study was carried out in ENT department of NIMS medical college, Jaipur. Seventy two patients between age group 18-45 years, having symptomatic DNS were selected. Out of which 24 patients underwent septoplasty with ribbon gauze ointment packing in group A, 24 patients underwent septoplasty with merocele packing in group B and in group C include 24 patients septoplasty without nasal packing or quilting suture taken on septum. The cases were observed for 6 weeks and 3 month postoperatively for discomfort, haemorrahage, infection, hematoma, synaechiae, crusting, ulceration residual obstruction and hospital stay. It was concluded that merocele packing is better than conventional ribbon gauze packing. Quilt suturing is tedious and more time consuming then merocele packing .Quilt suturing also useful for closing any inadvertent tears of septal mucosa also providing additional support for cartilage pieces retained in septoplasty.
Keywords: Septoplasty, Merocele nasalpacking, Quilting suture

INTRODUCTION

Deviated nasal septum is one of the common conditions encountered in the clinical practice of Rhinology. The incidence of DNS reported by Grey [1] is 27% in infants and 37% in adults. Hassan*et al*.[2] found DNS in64% cases.

Symptomatic DNS cause dysfunction of nasal respiration or suffer from recurrent sinusitis, epistaxies, crusting, hypoxia or are not cosmetically acceptable require surgical correction.

Septoplasty is routinely performed for symptomatic DNS. The unpleasant part of this procedure is postoperative nasal packing discomfort and pain during removal of the nasal packs. The purpose of nasal packing is to prevent post-operativehaemorrhage and septal hematoma. It is also though to stabilize the remaining cartilaginous septum and minimize persistence or recurrence of septal deviation. But the studies done did not have large sample size to support their results and conclusions.

The disadvantage of conventional nasal packing are discomfort to patient, compromised nasal breathing, dryness of mouth, nasal pain, vestibulitis, crusting, synaechiae, headache, watering from eyes, ear blocking, irritation of throat, difficulty in swallowing, hypoxia and secondary infection . It also increases hospital stay.

It order to prevent these complications, newer methods have been employed. These are nasal splinting, quilt stitching [3, 4] and merocele nasal packing. Intranasal splints were described by Salinger and Cohen [6].The splints were initially fashioned from any material such as strips of X-ray film or polythene tops of coffee-cans [7]. The magnetic nasal splints were originally described by Seltzer in 1971 [8]. Quilt stitching was first introduced by Sessions in 1984 [9], Walter [4] and Saharia[5] also followed the same technique. Reiter *et al*.[10] challenged the need for a pack and advocated the use of quilt stitching instead of packing after septoplasty.

REVIEW OF LITERATURE

History of nasal packing after nasal surgery falls back to 1847in the time of Gustay Killian of Germany and

Otto Tiger Freer of USA. Systemic sub mucosal resection (SMR) and nasal packing was started by Ephrain in Chicago and Peterson in Germany [11]. Different type of nasal packing have been used like Ribbon gauge soaked in bismuth iodoformparaffin paste, liquid paraffin, antibiotic ointment and others. Agents like polyvinyl acetate sponge (merocele), Nasopore(bioresorbable dressing) &various balloon tamponadenasal packing devices are also available [12].

Laing MR *et al*. had shown that nasal packing after septoplasty apply direct pressure to the septal flaps and to blood vessels located in the nasal septum preventingpost-operative bleeding and hematoma formation [12].

Von Schoenberg *et al*. reported that pain was significantly higher in the patients that were packed after surgery.Removal of packing was the most painful event in the postoperative period. Higher rate of complication (including heamorrhage, vestibulitis, septal perforation) in packed group [13].

Some studies have reported that nasal packing is not necessary after septoplasty as it causes discomfort during removal [13-15]. Some procedures such as wrapping the pack with gel foam, blocking the sphenopalatine ganglion using topical anesthesia for removal, keeping the pack for a shorter duration have been suggested in order to reduce pain [16-19]. Different techniques in order to reduce complications have been reported to approximate the mucosal flaps after surgery [20-22].

Walter[4] and Saharia[5] followed the quilt stitching technique. A similar technique using a curved needle was described by Lee and Vukovik [21]. Reiter *et al*.[10] challenged the need for pack and advocated the use of quilt stitching instead of packing after surgery.

METHODOLOGY

A prospective, randomized comparative study was carried out in patients with symptomatic DNS who underwent septoplasty in ENT department, NIMS medical college, Jaipur from January 2013 to March 2014. 72 patients between ages of 18 – 45 years of both sexes with symptomatic DNS were included in our study**.**

Our exclusion criteria were

- Patients suffering from medical problems like DM, hyper tension and blood dyscrasia.
- History of nasal polyposis.
- History of overt nasal allergy
- patients is using hemodiluting drugs
- patients with history of previous septal and nasal turbinate surgery.

Patients were randomly selected for nasal packing with ribbon gauze,. Nasal packing with merocele and quilting suture without nasal packing and were divided in three groups. Informed written consent was taken. Preoperative both the nasal cavities were packed with ribbon gauge /soft roll soaked in 4% xylocaine with 4 amp. Adrenaline in 30 ml.

The nose was prepared with topical decongestant and 2% lignocaine with 1:100000 adrenaline infiltration. Either killian or hemitransfixation incision were used as per surgeons preference or requirement of specific case.

The 24 patients in group A underwent septoplasty with Ant. Nasal packing. Soframycin soaked ribbon gauge was used for packing group. Pack was removed after 48 hours. 24 patients were in group B, septoplasty with nasal packing. Merocele was used for packing. Pack was removed after 24 hours. 24 patients were in group C, septoplasty without nasal packing. Quilting sutures are placed through the septum to hold the flaps together and to prevent hematoma formation. A 3/0 vicryl on a curved cutting needle is used. A knot is made at the end of suture and needle is passed through the septum from one nasal cavity to other, starting from anterior end of the middle turbinate to the vestibule where the knot was tied. Patients were discharged after 12 hours. Alkaline nasal wash and liquid paraffine or topical decongestant advised for 2 weeks, oral antibiotic and antihistaminic was given for 10 days. Post operatively patients were following up at 2,4 and 12 weeks.

RESULTS

Out of total 72 patients participated in the trial, 55 were male and 17 were female.

All selected patients have symptomatic DNS. Most common symptom was nasal obstruction, recurrent rhino sinusitis, epistaxies and snoring. All patients were divided in three groups randomly irrespective of age and sex. In group A, including septoplasty with nasal packing using soframycin ribbon gauze in 24 patients. In group B, septoplasty with nasal packing using merocele in 24 patients.In group C septoplasty without nasal packing using quilting suture in remaining 24 patients.

Table 1 show that all 48 patients in whom anterior nasal packing was done suffering from discomfort but severe discomfort was reported in 24 patients in whom soframycin ribbon gauze used and mild discomfort in merocele using group. I/M analgesia required in group A 24 patients and oral analgesia required in only 12 patients in group B. They also suffered from watering of eyes, dryness of mouth, headache and profuse rhinorrhoea. Ear discomfort was not reported any patients. In group C there was no discomfort.

In group A all patient was discomfort on removal of packing. 12 patients (50%) in group A, bleeding on

removal of packing but bleeding were mild and did not require repacking. In group B no discomfort and no bleeding on removal of pack merocele.

In group C, 2 patients were reported bleeding in post-operative periodand it was controlled by Otrivin nasal drops, ice application and local haemocoagulant. Post-operativeseptal swelling / hematoma occurred in 2 patients of group C, they required intervention.

Moderated grade fever was noted in 2 patients of group A, but there was no rash formation, hypotension, vomiting and diarrhea.

10 patients in group A had crusts formation after one week.in group B & C had no crust.

12 (50%) patients in group A had ulceration on nasal mucosa while no patients in group B & C after one week. After 4 weeks only 2 patients in group a showed nasal synaechiae which was released. In group B & C no nasal synaechiae was reported. Two patients in group C had residual nasal obstruction due to septalhematoma while no such complain in group A & B.

Post-operative hospital stay required in patients of group A is 48 hours in 20 patients, 4 patient's required longer stay of 72 hours due to bleeding on removal of pack. In group B in whom merocele nasal pack use is required 24 hours after surgery till nasal pack removed. In group C quilt stitching had to stay for just 12 hours or even less after surgery but in 4 patients hospital stay was 48 -72 hours due to septal hematoma and heamorrhage.

All patients were satisfied with operation and postoperative follow up 3 month later.

Table 1: Shows postoperativecomplications with group A, B & C

Sl. No.	Complications	GroupA	Group B	Group C
1	Discomfort	24 (100%)	24 (100%)	0
2	Heamorrhage	12 (50%)	0	2(21%)
3	Septal swelling	0	0	2(21%)
4	Infections	2(8%)	0	0
5	Crust	10 (42%)	2(21%)	0
6	Ulcer	12 (50%)	0	0
7	Residual obstructions	0	0	2(21%)
8	Nasal synaechiae	5 (21%)	0	0
9	Pain during removal of packing	24 (100%)	0	0
10	Postoperative Hospital stay	48-72 hrs	24-48 hrs	12 hrs

N. B.: Group A-septoplasty with ribbon gauze nasal packing, Group B- septoplasty with merocele nasal packing, Group C – septoplasty without nasal packing (quilting suture).

DISCUSSION

In our study, majority of patients were in range of 18-45 years age. The chief complain of all patients was nasal obstruction. Recurrent rhinitis was next common complain followed by headache and sneezing.

The result of our trial showed significant difference between septoplasty with or without nasal packing, but using nasal pack material also showed significant changes. As in group A discomfort post operatively is severe in which soframycin shocked ribbon gauze using as nasal pack and removal of packing also painful. In group B in which merocele using as nasal packing was minimum discomfort and removal of pack was painless. In group C there was no packing, so no discomfort or no pack. Our result correlates with the study permormed byBalaji *et al*. [19].

Naghibzadeh *et al*.had shown that the rate of complication and morbidity between group A & C were same and the difference were not valuable except the pain and discomfort postoperatively and the time of pack removal [23].

Suturing the septum after septoplasty has advantage of eliminating discomfort to the patients had minimum complications and hospital stay is less than with nasal packing [24].

In our study nasal packing with merocele after septoplasty has the advantageto eliminating the severity of discomfort and had no complication like septalhematoma ,post-operative bleeding, crust and ulcer formation. Hospital stay is less then ribbon gauze packing group in comparison.

A prospective study comparing nasal packing with septal suturing after septoplasty in 169 patients concluded that suturing should be preferred alternate to nasal packing. Another retrospective study of 266 septoplasty with septal suturing and no packs reported good results with no complication and no patient discomfort.

In our study nasal packing with merocele is as good as septal suturing but septal suturing in comparison to nasal packing with ribbon gauze is better. Merocele is costly but easy to use. Septal suturing requires expertise. It is tedious and more time consuming. In young surgeon merocele is better alternative than septal suturing.

In our study, group A patients nasal synaechia incidence was 20 % and crust formation and ulcer formation was 45% and 50 % respectively. It was due to when removal of ribbon gauze pack leaves some shreds and raw area on nasal mucosa which later bleeds and may result crust, ulcer and synaechia formation.

In a study of Cambell *et al*.[24]synaechia with ANP was 17 %. Fjermedal *et al*. [25] reported 10% cases of crust formation with ANP. Proper lubrication of ribbon gauze pack is advisable to decrease the incidence of crust formation.

Merocele using as nasal packing had no crust, no ulcer and no synaechia. It is good alternative of ribbon gauze packing.

Two patients in group C had minimum bleeding post operatively. This could be wearing off the effect of adrenalin. 2 patients in group C had septal swelling post operatively due to hematoma.

In group C without nasal packing had chances of septal hematoma / thickening and residual septal deviation. First,the blood in the residual dead space between the two perichondrial layers (even though this space is minimized with quilt suturing) either by virtual of scar formation or as a result of chondrogenesis thickened the area in the group without packing. Another possibility may have shifting the septum preoperative position in the group of without nasal packing while in the group of nasal packing , it was hold in midline until the swelling and healing made it stiffer and there by allowed it to retain in new position.

CONCLUSION

The use of nasal packing with merocele following septoplasty to stabilize the remaining septum and prevent complications such as bleeding , septal hematoma and formation of nasal ulcer and synaechia. Quilting suture can effectively serve all the above purpose plus reduce hospital stay.

Conventional ribbon gauze packing is not innocent step. It should be reservered for selected cases like marked DNS or epistaxies due to injury nose. Simple DNS can be safely treated without nasal packing and by quilting suture on septum. Quilting suture is good, though it is tedious and more time consuming. Simple DNS can be safely treated with merocele nasal packing. It is easy to use.

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