

## A COMPARATIVE STUDY OF SEPTOPLASTY WITH OR WITHOUT NASAL PACKING: OUR EXPERIENCE IN TERTIARY CARE HOSPITAL

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### ABSTRACT

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#### BACKGROUND

Deflected nasal septum (DNS) is the commonest septal problem in ENT practice. The most painful and unpleasant part of this procedure is during removal of nasal pack.

#### AIM

Our study aims to compare the results of septoplasty with and without post-operative nasal packing and thereby assess the necessity of nasal packing after septoplasty in terms of patient's comfort, effectiveness at controlling the haemorrhage.

#### METHODOLOGY

In our study, 80 patients who underwent septoplasty in our institution during the period July 2014 till April 2015 were simply randomised into two groups, 1 group received post-operative packing and for the other group of 40 patients, nasal packing was not done and their symptoms assessed and compared on post-operative day 1, after 1 week and 1 month and results were analysed. The following symptoms nasal obstruction, headache, bleeding, irritation of eyes, mouth breathing, running nose, ear ache, fullness, disturbed sleep, loss of smell or taste and crusting were assessed. Patients who underwent septoplasty with turbinectomy or MMA or FESS were excluded from the study.

#### RESULTS

Among the 80 patients who participated in the study, predominant were males (67.5%) and the predominant age group was 11-20 years. On comparing the nasal symptoms on post-operative day 1, there was significant difference between the study and control groups in the symptoms, headache, nasal obstruction, irritation/watering of eyes, mouth breathing, earache, ear fullness, disturbed sleep, loss of smell/taste, crusting, showed statistically significant difference among both the groups whereas bleeding, nasal discharge were not significant. On comparing the symptoms after one week, nasal obstruction, mouth breathing, crusting and loss of smell had statistically significant values and bleeding and irritation of eyes were not present in both the groups. After one month when the symptoms were compared, none of them were statistically significant.

#### CONCLUSION

Nasal packing following septoplasty is thought to stabilise the remaining septum and prevent complications such as bleeding, septal haematoma, and formation of synechiae. Quilting sutures can effectively serve all these purposes. Also helps to avoid post-operative discomfort to the patient and decreases hospital stay. Hence packing can be reserved for special situations rather than using it in all cases.

#### KEYWORDS

Deflected Nasal Septum (DNS), Middle Meatal Antrostomy (MMA), Functional Endoscopic Sinus Surgery (FESS).

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**INTRODUCTION:** Deviated nasal septum (DNS) is the most common septal problem encountered in ENT practice. Various theories have been put forward towards its cause, starting from birth moulding theory to trauma.<sup>1</sup> History of

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use of nasal packing after nasal surgeries goes back to 1847 during the time of Gustav Killian of Germany and Otto Tiger Freer of USA.

In 1882, Ephraim in Chicago and Peterson in Germany started the practice of submucosal resection (SMR) and nasal packing.<sup>2</sup> Different types of nasal packing have been used till date for example bismuth iodoform paraffin paste, liquid paraffin, Merocel, antibiotic ointments and others in order to control bleeding and to prevent haematoma formation.<sup>3</sup>

Nasal pack has a propensity to adhere to mucosa, cause pain, and create bleeding when removed. It is common practice to do nasal packing after septoplasty. The disadvantages of anterior nasal packing are compromised nasal breathing, dryness of mouth, nasal pain, nasal valve narrowing, vestibulitis, crusting, synechiae, headache, watering from eyes, ear blocking, irritation of throat, difficulty in swallowing, hypoxia, hypoxemia, and secondary infection.<sup>4,5</sup>

Hence all these complications make a definitive painful impact during the postoperative period. Our study aims to compare the results of septoplasty with and without post-operative nasal packing and thereby assess the necessity of nasal packing after septoplasty.

**REVIEW OF LITERATURE:** Von Schoenberg and colleagues studied 95 patients undergoing routine nasal surgery and reported that pain was significantly higher in the group that were packed after surgery; and the removal of packing proved to be the most painful event in the postoperative period. But it was not clear if this difference reached statistical significance.<sup>3</sup> in a descriptive study conducted by Muhammad Hafeez, et al. Out of 70 patients, two (2.85%) cases were given intranasal packing with paraffin gauze for 24 hours at the end of surgery because of excessive perioperative bleeding. Five (7.14%) patients had bleeding within 12 hours of operation. Remaining 63 (90%) patients had no problem at all in which nasal packing was not done.<sup>6</sup> A comparative study conducted by Basavaraj N. Walikar showed that 61/77 (79.3%) of patients with nasal packing experienced postoperative pain, headache, and discomfort compared to 25.7% (19/74) of patients without nasal packing and concluded that Septoplasty can be performed safely without postoperative Nasal packing.<sup>7</sup>

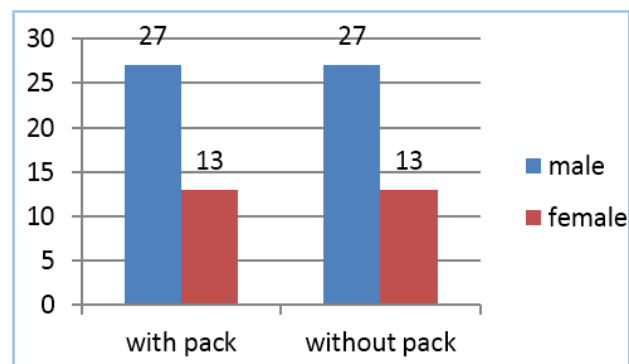
A comparative study done by Rajashri S. Mane et al showed that pain, discomfort, nasal obstruction, nasal breathing, snoring and sleep apnoea were the major problems reported by patients with packing and they advocated that Simple DNS can be safely treated with septoplasty without Anterior Nasal Packing and by taking Quilting sutures on the septum.<sup>8</sup> A prospective study conducted by Maria Teresa Bernardo et al showed that 75.7% reported moderate/intense pain upon nasal packing removal. Bleeding was more frequent in those patients who did not receive a nasal packing, and only 1 patient required packing. Hence they advocated routine use of anterior nasal packing should be challenged for not presenting proven benefit.<sup>9</sup> A comparative study conducted by PriyoSakhi Devi et al., patients without nasal packing group showed very less occurrence of pain/headache/discomfort and sleep disturbance till nasal packing was in situ ( $P < 0.001$ ). Nasal packing group had to stay longer in hospital after septoplasty ( $P < 0.001$ ) and they concluded that Nasal packing after Septoplasty where only minimum intervention is required does not give any added advantage or benefit to the non-nasal packing group.<sup>10</sup>

**MATERIALS AND METHODS:** This clinical prospective study was conducted from July 2014 till April 2015 in Sri Venkateshwara ENT department, Bangalore Medical College and Research Institute. A total of 80 patients irrespective of sex, occupation, socioeconomic status, and address who underwent septoplasty in our institute were divided into two groups by simple random sampling. Patients with medical disease like hypertension and patients in whom additional procedures like inferior turbinectomy were done were excluded from the study. Patients who underwent only septoplasty were included in the study.

All patients underwent conventional septoplasty under local anaesthesia by experienced consultants only. Under local anaesthesia after infiltration was given with 1% Xylocaine with adrenaline 1 in 100,000. Hemitransfixion incision was made, mucoperichondrial/periosteal flap was elevated; anterior tunnel, posterior tunnel and inferior tunnels were created, bony cartilaginous junction identified and posterior tunnel was created on opposite side. Inferior strip of cartilage was removed; maxillary crest was removed by gouge and hammer; spur if present was removed and scoring of septal cartilage was done, incision was sutured. In 40 patients, nasal packing was done with paraffin soaked gauze and in the study group, trans-septal suturing was done.

The Following Symptoms: 1) Headache, 2) Nasal Obstruction, 3) Bleeding, 4) Irritation/Watering Of Eyes, 5) Mouth Breathing, 6) Nasal Discharge, 7) Earache/Ear Fullness, 8) Disturbed Sleep, 9) Loss Of Smell/ Taste, 10) Crusting were assessed between the two groups on post-operative day 1, one week later and after one month and tabulated and compared. Informed consent was taken from all the patients who were included in the study. Post-operatively, all patients were treated with oral antibiotics and NSAIDs for 5 days. Nasal douching was advised for next 4 weeks for all patients and were followed up on first post-operative week and fourth post-operative week, symptoms were assessed, tabulated and compared.

**RESULTS:** Out of 80 patients who participated in the study, 54 (67.5%) were males and 26 (32.5%) were females. In the study group and control group, demographic profile was almost the same, comprised of males 27 (67.5%) and females 13 (32.5%). Demographic profile in each group presented in the bar diagram below.



**Graph 1**

The majority of the patients were in the age range 11-20 years with minimum age of 11 to a maximum of 60 yrs. old with a mean age of 24.92±10.37. Age range in both the groups were similar in both study and control group with maximum in 11-20 years age group and minimum in 51-60 years age group are presented in the Table 1.

Age Range	With Pack	Without Pack
11-20 years	18 (45%)	15 (37.5%)
21-30 years	10 (25%)	14 (35%)
31-40 years	8 (20%)	8 (20%)
41-50 years	4 (10%)	1 (2.5%)
51-60 years	0	2 (5%)
<b>Total</b>	<b>40</b>	<b>40</b>

**Table 1: Age Distribution**

The following symptoms were assessed: 1) Headache, 2) Nasal Obstruction, 3) Bleeding, 4) Irritation/ Watering of Eyes 5) Mouth Breathing, 6) Nasal Discharge, 7) Earache/Ear Fullness, 8) Disturbed Sleep, 9) Loss of Smell/ Taste, 10) Crusting on Post-operative day 1, after 1 week and after 1 month. While comparing the above-mentioned symptoms on post-operative day 1 between both groups headache, nasal obstruction, irritation/watering of eyes, mouth breathing, earache, ear fullness, disturbed sleep, loss of smell/taste, crusting showed statistically significant difference among both the groups whereas bleeding, nasal discharge were not significant. In both the groups, two patients had mild postnasal bleeding which was managed conservatively. The comparison between both the groups on post-operative day 1 is presented in the Table 2.

Sl. No.	Symptoms	With Pack	Without Pack	P value	Significance
1	Headache	35	7	<0.001	significant
2	Nasal Obstruction	40	6	<0.001	Significant
3	Bleeding	2	2	1	Not significant
4	Irritation/ Watering of Eyes	20	0	<0.001	Significant
5	Mouth Breathing	37	3	<0.001	Significant
6	Nasal Discharge	21	16	0.370	Not significant
7	Earache/ Ear Fullness	26	0	<0.001	Significant
8	Disturbed Sleep	30	3	<0.001	Significant
9	Loss of Smell/ Taste	38	3	<0.001	Significant
10	Crusting	30	2	<0.001	Significant

**Table 2: Comparison of Symptoms on Post-Operative Day 1**

On comparing the symptoms after one week, nasal obstruction, mouth breathing, crusting and loss of smell had statistically significant values and bleeding and irritation of eyes were not present in both the groups. Comparative analysis of the symptoms after one week is illustrated in Table 3.

Sl. No.	Symptoms	With Pack	Without Pack	P Value	Significance
1	Headache	5	0	0.055	Not significant
2	Nasal Obstruction	28	2	<0.001	Significant
3	Bleeding	0	0		
4	Irritation/ Watering of Eyes	0	0		
5	Mouth Breathing	12	0	<0.001	Significant
6	Nasal Discharge	13	9	0.453	Not significant
7	Earache/ Ear Fullness	4	0	0.116	Not significant
8	Disturbed Sleep	2	0	0.494	Not significant
9	Loss of Smell/ Taste	20	2	<0.001	Significant
10	Crusting	12	1	<0.001	Significant

**Table 3: Comparison of Symptoms after One Week**

After one month when the symptoms were compared, none of them were statistically significant and symptoms such as bleeding, irritation of eyes, mouth breathing, and earache were not present in both the groups. Only the symptoms that were present are presented in Table 4.

Sl. No.	Symptoms	With Pack	Without Pack	P Value	Significance
1	Headache	2	0	0.494	Not significant
2	Nasal Obstruction	1	0	0.314	Not significant
3	Bleeding	0	0	0	
4	Irritation of eyes	0	0	0	

5	Mouth breathing	0	0	0	
6	Nasal Discharge	0	1	0.314	Not significant
7	Earache	0	0	0	
8	Disturbed Sleep	1	0	0.314	Not significant
9	Loss of Smell/ Taste	1	1	1	Not significant
10	Crusting	2	0	0.152	Not significant
<b>Table 4: Comparison of Symptoms after One Month</b>					

**DISCUSSION:** Out of 80 patients who participated in the study, majority were males 54(67.5%) and 26 (32.5%) were females which is similar to the demographic profile studied by Bernardo M T et al<sup>9</sup> constituting 64.4% males and 35.6% were females. The majority of the patients were in the age range 11- 20 years with minimum age of 11 to a maximum of 60 years old with a mean age of 24.92±10.37 which is comparable to the study conducted by Walikar B N et al<sup>7</sup> with the common age range of 11-30 years. Age range in both the groups were similar in both study and control group with maximum in 11-20 years age group and minimum in 51-60 years age group. Nasal symptoms were assessed on post-operative day one, after one week and on fourth week, tabulated and compared.

Patients who underwent nasal packing had significant difference in the symptom when compared to the group in whom packing was not done. Also among those symptoms, nasal obstruction, crusting, mouth breathing, headache, loss of smell and disturbed sleep were the prominent symptoms in descending frequency. Also during pack removal, patients experienced severe pain and discomfort and in two patients, mild bleeding was also present which was managed conservatively. But while comparing the symptoms after one week, patients in packing group had significant nasal obstruction, mouth breathing, and loss of smell and crusting probably secondary to the effects of nasal pack on the nasal mucosa.

In another study, Naghibzadeh et al<sup>11</sup> showed that the rate of complication and morbidities among the two groups were similar and the differences were not valuable, except the pain and discomfort experienced both post-operatively and at the time of nasal pack removal. On comparing the symptom after one month, none of the symptoms are significant. Hence, in this study, it was seen that nasal packing doesn't affect the final outcome of the surgery. Also complications such as severe bleeding, septal haematoma or septal abscess to prevent which nasal packing is being done didn't occur in the group without nasal packing.

A prospective study conducted by Al-Raggad DK et al<sup>12</sup> comparing nasal packing with septal suturing after Septoplasty in 169 patients concluded that suturing should be the preferred alternative to nasal packing. In this study, we have observed that nasal packing can be reserved in cases where complications are to be anticipated or when other procedures are done along with septoplasty which has the chances of increasing the post-operative bleeding, rather than being routinely used. Nasal pack can be used only on an as and when necessary basis thereby reducing the pain and discomfort of the patients to a great extent and also reducing the hospital stay.

**CONCLUSION:** The use of nasal packing following septoplasty is thought to help in the stabilisation of the remaining septum and prevent complications such as bleeding, septal haematoma, and formation of synechiae. Quilting sutures effectively serves the above-mentioned purpose plus reduces the hospital stay. Simple DNS can be safely treated with septoplasty without Anterior Nasal Packing and by taking trans-septal suturing the septum after septoplasty has the advantage of eliminating discomfort for the patients, and has minimal complications. Hence, in our study, we conclude that Nasal packing should be reserved only for selected cases where these complications are anticipated or when other procedures are done along with septoplasty thereby increasing the chances of post-operative bleeding rather than being routinely used.

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