



ORIGINAL RESEARCH PAPER

Otorhinolaryngology

A PROSPECTIVE STUDY ON EFFICACY OF USING INTRA NASAL SEPTAL SPLINTS IN ENDONASAL SURGERIES

KEY WORDS:

septoturboplasty , SNOT 22, Teflon splint,

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ABSTRACT

Conventionally, anterior nasal packing has been used following septal surgeries to prevent postoperative complications, which has evolved over years and is also a matter of debate among ENT surgeons. Recently different types of intranasal splints have been used with or without nasal packs to prevent postoperative complications. The aim of this study is to compare the postoperative results in 60 nasal surgeries, who were divided into two groups, one group had only nasal packing and the other group had septal splints along with nasal packing following septoturboplasty. Patients were asked to score their symptoms on SNOT 22 questionnaire pre-operatively and post-operatively. Significant improvement was noted postoperatively in group 2, with septal splinting in nasal related and quality of life domain on SNOT 22 questionnaire, compared to the nonsplinting group. Thus our conclusion is that nasal septal splints can be used as an effective method along with nasal packing to prevent postoperative complications and also in improvement of symptom score following septal surgeries.

INTRODUCTION:

Nasal septal deviation with or without inferior turbinate hypertrophy is a well known disease and the treatment is directed towards managing symptoms. Septoplasty and turbinate reduction procedures are few of the commonest surgeries done by rhinologist. The most commonly noted postoperative complication of the procedure include beeding, septal haematoma, septal abscess, synechiae formation and also residual deviation with no improvement in symptoms. Various packing materials have been used with or without lubricants and medications to prevent these complications, like fingerstall packs, cotton gauze packs, paraffin packs and hydroxylated polyvinyl acetate nasal packing , introduced in recent past^{1,2}. There are many studies performed to compare different packing materials, with or without airway. Teflon septal splints with sieves are used in our study as splints. Teflon is an inert material and causes minimal reaction³. It keeps flaps in place and prevents most of the postoperative complications including residual deviations. The present study aims at comparative analysis of the outcome of nasal packing alone and nasal packing with teflon septal splints between two groups. The Sino-Nasal Outcome Test 20 (SNOT-20) and 22 (SNOT-22) are validated patient-reported measures of symptom severity and health-related QoL in sinonasal condition. It is an increasingly popular tool to describe patient burden and clinical effectiveness in sino-nasal disease.^{4,5} The SNOT covers a broad range of health and health-related quality of life problems including "physical problems, functional limitations, and emotional consequences."^{6,7}

Our study aims to compare the symptom score by SNOT 22 pre and post operatively between splint and non splint groups.

MATERIALS AND METHODS:

A total of 60 patients who attended ENT H&N OPD in our institution from October 2019 to march 2021 were considered.

Inclusion criteria :

Patient aged 15 to 52 years, presenting with signs and symptoms of rhinosinusitis with septal deviation and inferior turbinate hypertrophy on examination.

Exclusion criteria :

Patient aged less than 15 years and Sinonasal malignancy. Detailed history and clinical examination was done. Diagnosis was confirmed by diagnostic nasal endoscopy and radiological investigation. Every patient was pre-operatively

seen in OPD where the patient scored their symptoms using SNOT 22 questionnaire chart, 6 weeks post operatively they scored again the symptoms using SNOT 22 questionnaire unaware of their pre-operative SNOT 22 score.

Age group varied from 15 years to 52 years of age, of varied socio-demographic features. Informed written consent was taken in their own understandable language.

Patients were divided into 2 groups of 30 each by simple randomization method. Group 1 underwent septoturboplasty without teflon splinting and Group 2 underwent septoturboplasty with teflon splinting.

Data collected was entered in MSExcel sheet and was analysed using SPSS software version 20.

Fig 1 :

I.D. _____ SINO-NASAL OUTCOME TEST (SNOT-22) DATE: _____

Below you will find a list of symptoms and social/emotional consequences of your rhinosinusitis. We would like to know more about these problems and would appreciate your answering the following questions to the best of your ability. There are no right or wrong answers, and only you can provide us with this information. Please rate your problems as they have been over the past two weeks. Thank you for your participation. Do not hesitate to ask for assistance if necessary.

	0 Not a problem	1	2	3	4	5 Most important item
1. Need to blow nose	0	1	2	3	4	5
2. Nasal Blockage	0	1	2	3	4	5
3. Sneezing	0	1	2	3	4	5
4. Runny nose	0	1	2	3	4	5
5. Cough	0	1	2	3	4	5
6. Post nasal discharge	0	1	2	3	4	5
7. Thick nasal discharge	0	1	2	3	4	5
8. Ear fullness	0	1	2	3	4	5
9. Dizziness	0	1	2	3	4	5
10. Ear pain	0	1	2	3	4	5
11. Facial pain/pressure	0	1	2	3	4	5
12. Decreased Sense of Smell/Taste	0	1	2	3	4	5
13. Difficulty falling asleep	0	1	2	3	4	5
14. Wake up at night	0	1	2	3	4	5
15. Lack of a good night's sleep	0	1	2	3	4	5
16. Wake up tired	0	1	2	3	4	5
17. Fatigue	0	1	2	3	4	5
18. Reduced productivity	0	1	2	3	4	5
19. Reduced concentration	0	1	2	3	4	5
20. Frustrated/irritable	0	1	2	3	4	5
21. Sad	0	1	2	3	4	5
22. Embarrassed	0	1	2	3	4	5

2. Please mark the most important items affecting your health (maximum of 5 items) _____

SNOT-22 Copyright © 1996 by J. F. Piccirilli, M.D., Washington University School of Medicine, St. Louis, Missouri
SNOT-22 Developed from modification of SNOT-20 by National Comparative Audit of Surgery for Nasal Polyps and Rhinosinusitis
Royal College of Surgeons of England.

RESULTS :

The data collected was analysed by SPSS software version 20 and results were expressed in the form of descriptive and inferential statistics. The pre and post operative data was analysed by paired t test and Chi square test. A p value < 0.05 was considered as statistically significant.

In our presented study, significant improvement was noted for symptoms as shown in table 1. Hence, better results were shown in group 2 for domains related to nasal symptoms and quality of life.

Patient on pre-op did not complain of symptoms like cough, ear fullness, dizziness, facial pain/pressure, reduced productivity, reduced concentration, fatigue, frustrated, sad and embarrassed and hence not significant in both study groups.

TABLE I:

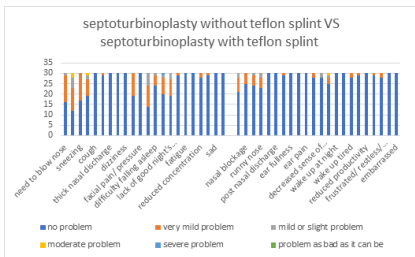
SYMPTOMS	GROUP I (IN %)	GROUP II (IN %)
Need to blow nose	53.33	70
Nasal blockage	40	83.33
Sneezing	56.66	80
Runny nose	63.33	76.66
Post nasal discharge	96.66	96.66
Lack of good night's sleep	63.33	100
Difficulty falling asleep	80	100
Wake up at night	66.66	100
Lack of good night's sleep	63.33	100

Certain symptoms like wake up tired, thick nasal discharge, ear pain had complete improvement of symptoms post-surgery in both the study groups.

Symptom of loss of smell/taste showed no improvement pre and post operatively in both the groups suggesting probable irreversible damage.

There were no complications like septal hematoma, adhesions or synechia noted in both groups.

Fig 2 :



DISCUSSION:

Septoturbinatectomy is one of the most common surgery performed in otorhinolaryngology. Different types of nasal packs are used to prevent complications following the procedure. septal splints made of silastic or Teflon are also been employed either with or without nasal packing by many surgeons with good results. Splinting prevents synechia and adhesion formation, septal splints keep mucoperichondrial flaps in situ, which may get displaced while nasal packing. residual deviations of the septum also can be avoided by splinting. In the present study, the group with nasal splinting showed significant improvement in nasal symptom score compared to the nonsplinting group on SNOT 22 questionnaire chart.

In a study conducted by Sudhir et al, on 214 cases of septoplasties. 116 postoperative cases were packed with framycetin packs only and the other 98 cases by framycetin packs and teflon septal splints. The groups were compared for postoperative nasal adhesions, residual deviation, pain, septal perforations and subjective patient satisfaction. Results showed that the rates of adhesion and pain on VAS scale showed no significant difference in the splinted and non-splinted group. Pain was more with the splints even after pack

removal. Residual deviation was reduced with these teflon nasal septal splints. They concluded that nasal septal splint does not significantly reduce the adhesions after septoplasty but are effective in reducing the residual deviations. The pain and discomfort are more with the splints. Post-operative adhesions are better reduced by nasal irrigation and manual cleaning of the cavities by antibiotic ointments.⁸

In a study conducted by Yong Gi Jung et al, 40 subjects who had undergone septoplasty only without sinus surgery or turbinoplasty, a silastic septal splint was inserted in one side of the nasal cavity at the end of each septoplasty, with the other side serving as a control. The splint side and control side were randomly selected. Nasal discomfort score (10-point scale) and mucosal status (grades 1–4) were surveyed in a blinded setting on postoperative days 7 and 14. Forty of 83 subjects fulfilled the enrolment criteria. On the 7th postoperative day there was no significant difference in nasal discomfort between the splint and control sides (6.2 ± 1.28 and 5.7 ± 1.27 , respectively; $p = 0.116$), but the mucosal status was better on the splint side than on the control side (1.5 ± 0.51 and 2.5 ± 0.85 ; $p < 0.001$). At 14 days postoperatively, the symptom score (2.7 ± 1.06 versus 3.8 ± 1.25 ; $p < 0.001$) and mucosal status (1.5 ± 0.55 versus 1.9 ± 0.68 ; $p = 0.013$) were significantly better on the splint side compared with the control side. They Concluded that Insertion of a silastic septal splint after septal surgery should be accepted as a routine procedure.⁹

In a study conducted by M MArdehali et al, study was a prospective, randomized clinical trial where, 114 patients underwent septoplasty for septal deviation and ensuing nasal obstruction. These patients were divided into two groups: packing (using intranasal septal splints and antibiotic meshes at the end of the operation) and non-packing (using four separate trans-septum through and through horizontal mattress sutures without any mesh or intranasal splint insertion). The authors found no significant statistical differences between the two groups in the parameters studied, but significantly higher pain levels were noted in the patients in the packing group. The final results confirmed that patients who underwent septoplasty, intranasal packing and septal splint insertion did not benefit more than those who had trans-septum through and through suturing.¹⁰

In our present study, it was found effective that use of teflon septal splint following septoturbinatectomy showed improvement of scores in SNOT 22 system. As per previous available literature, most of the authors did not have a proper measuring scale for symptoms related to CRS and allergy, SNOT 22 provides not only the patient, but a reliable indicator for the researcher as well.

CONCLUSION:

Septoturbinatectomy with intranasal septal splinting is an effective method for patients with allergy and CRS. Teflon splinting following septal surgery helps in improving symptom score by SNOT 22 system. Thus, our findings show that use of septal splints should be made conventional in nasal surgeries.

Conflict of interest - None

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