

## ORIGINAL RESEARCH

# Nasal Septal Clip Vs Anterior Nasal Packing- A Comparative Clinical Study In Submucosal Resection of Nasal Septum

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## ABSTRACT

**Introduction:** Deviated Nasal Septum (DNS) is a one of the common cause of nasal airway obstruction. When conservative treatment is not effective, surgical treatment should be indicated. Our aim was to assess and compare the post-operative morbidity outcome of septal surgery using septal clip with septal splint and anterior nasal packing.

**Materials and method:** This prospective randomized comparative study was done over a period of one and half year. A total of 40 patients underwent Sub mucosal Resection (SMR), who were diagnosed Deviated nasal septum (DNS). They were randomly divided into two groups. Group A included 20 patients with Septal clip and Group B included 20 Patients Anterior nasal packing. A comparison was made between the two groups regarding the post-operative period pain, headache, post-operative bleed, dysphagia, epiphora, dryness of mouth, the degree of tissue healing, adhesion formation.

**Results:** We found that incidence of pain and various other sign symptoms was significantly higher in Group B. At first day group A had pain 14 (70%), headache 9 (45%), dysphagia 6 (30%), epiphora 4 (20%) and dryness of mouth 8 (40%), on the other hand pain 5 (25%), headache 2 (10%) and dryness of mouth 1 (5%). At 3 days too degree of discomfort is more in group A, at one week bleeding during pack removal 4 (20%), tissue healing 8 (40%) and at end of follow-up at 4 weeks 3 had complain of nasal obstruction for group A but none for group B.

**Conclusion:** We observed that nasal packing is a cause for significant morbidity and discomfort in the immediate post-operative period. Nasal septal clips are useful techniques in septal surgery after flap approximation.

**Keywords:** Septal clip, Deviated Nasal Septum (DNS), Sub mucosal Resection (SMR)

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## INTRODUCTION

Deviated Nasal Septum (DNS) is a one of the common cause of nasal airway obstruction. When conservative treatment is not effective, surgical treatment should be indicated. Nasal packing is used primarily to control bleeding in all endonasal surgery. It is used for internal stabilization following operations on the cartilaginous/ bony skeleton of the nose.<sup>1</sup> Some complications in endonasal surgery are induced by nasal packing, these are the result of increased swelling causing a disturbance in endonasal lymph and venous drainage. These complications are: mucosal injury and loss of ciliary function even in absence of surgical incision, sleep respiratory disturbances<sup>2</sup>, Eustachian tube dysfunction. Nasal packs are uncomfortable while they are in place, it causes pain and bleeding when they are removed. Intranasal splints are used after nasal septal surgery for the prevention of intranasal adhesion between the nasal septum and lateral nasal wall and to support the septal position.<sup>3</sup> The intranasal splints were first described by Salinger and Cohen in 1955.<sup>4</sup> Our aim was to assess and compare the

post-operative morbidity outcome of septal surgery using septal clip with septal splint and anterior nasal packing.

## MATERIAL AND METHODS

This is prospective, comparative and randomized study done on patients who were diagnosed to have Deviated Nasal Septum (DNS). The study was conducted at Assam Medical college and Hospital, Dibrugarh, India July 2014 to February 2015. All the data regarding study population were collected and compiled in a structured questionnaire after considering all ethical implications. All the data pertinent to the patient were kept confidential. The Study included 40 patients, 25 female and 15 male [fig 1] age range 18 to 40 years, female to male ratio 5:3. These patients were selected sub mucosal resection for deviated nasal septum. They are divided in two groups group A with anterior nasal packing and group B with septal clip with septal splints. Inclusion criteria's are-patients presenting with history of nasal block due to DNS in both sexes and age groups above 17 years. All the patients underwent the procedure under the local anesthesia. Exclusion criteria are – Co-existing sinus disease necessitating endoscopic sinus surgery, septorhinoplasty, revision surgery, co-existing middle ear pathology, patients diagnosed to have obstructive sleep apnea and patients below 17 years of age, are-All patients with nasal block other deviated nasal septum for eg.AC Polyp, Ethmoid polyps, Inferior turbinate hypertrophy, rhinolith. The data is collected on basis of the detailed history, systemic examination, ENT examination and investigation—anterior rhinoscopy, posterior rhinoscopy, diagnostic nasal endoscopy, x- ray Paranasal sinus (PNS), CT scan PNS whenever necessary clips Before surgery routine blood investigations along with hematological and biochemical done. Through ENT examination was done to depicting the type and side of deviation, the presence or absence of spurs. The DNS was broadly classified onto to the right and left. The data is collected on basis of the detailed history, systemic examination, investigations include—anterior rhinoscopy, posterior rhinoscopy, diagnostic nasal endoscopy, x-ray Para nasal sinus (PNS), CT scan PNS whenever necessary,

routine blood investigations along with hematological and biochemical test. Correction of Deviated Nasal Septum by surgery mainly sub mucosal resection of the septum using Killian's incision and then functional support of the septum being given by way of either anterior nasal packing or septal clips. Then the postoperative symptoms, signs are noted and both the groups are compared. Insertion technique of Nasal packs Ribbon gauze lubricating with Neosporin ointment inserted using a Tilley's forceps until the pack is fitting snugly, After packing the B/l side of nostril, the ends of the Ribbon gauze are plastered on the tip of nose.

**Insertion technique of septal clip-** The spring clip designed like a wire cage, the internal splints are made from poly ethylene. (Fig-1) After approximating of septal flaps, the splints lubricating with Neosporin ointment are inserted on either side of the septum. The anterior end of the two splints are tied together with chromic cat gut 3-0 for fixation of the clip (Fig-2). Usually it is fixed by figure 8 manner to avoid slipping out. All the patients were given intravenous antibiotics, oral analgesic. Patients with septal clips were also given decongestant nasal drops 8 hourly following surgery. Removal of packs/splints, nasal suctioning was done in 3<sup>rd</sup> post-operative day and douche was given with normal saline. Patients were asked to do nasal douching with normal saline, along with oral antibiotics. On the seventh post-operative day, anterior rhinoscopy was performed to assess the status of the septum, formation of adhesion and the presence of any raw surface.

## RESULTS

In Our study Overall nose block on right side 28 (70%) and left side 12 (30%). We reviewed the patients after the surgery and looked for the presence of any complications. 4-8 hours after the procedure 14(70%) patients in group A patients complain of pain, headache 9 (45%), dysphagia 6 (30%), epiphora 4 (20%), dryness of mouth 8 (40%). In case of group B Pain 3 (15%), headache (10%), dysphagia and epiphora 0%, dryness of mouth 1 (.5%) [Table1]. At 3<sup>rd</sup> day group A experienced pain 12 (60%), nasal obstruction 7 (35%), bleeding 4 (20%) after pack

removal and tissue healing 8 (40%). In case of group B experienced pain 4 (20%), nasal obstruction 3 (15%), bleeding none of the patients bleeding after clip removal and tissue healing 15 (75%) [Table2]. At one week, group A experienced adhesion or synechia 5(25%) and raw surface 8 (40%), on the other hand group B had no synechia but raw surface 2(10%). perforation [Table3]. These synechia are released in minor OT. Patients are asked to rate of symptomatic improvement. None of the patients in our study had septal hematoma or perforation post-operative checkup at 4 weeks, in group A 19 patients had restoration of nose, on the other hand group B 15 had restoration of the nose.

Symptom And Sign	Anterior Nasal Packing N=20 (%)	Septal Clip N=20 (%)
Pain	14 (70%)	3 (15%)
Headache	9 (45%)	2(10%)
Dysphagia	6 (30%)	0 (0%)
Epiphora	4 (20%)	0 (0%)
Dryness Of Mouth	8 (40%)	1 (.5%)

Table-1: Immediate Post –Operative Period 1st Day

	Group A N=20 (%) Anterior Nasal Packing	Group B N=20 (%) Septal Clip
Pain	12 (60%)	4 (40%)
Nasal Obstruction	7 (35%)	3 (15%)
Bleeding	4 (20%)	0 (0%)
Healing	8 (40%)	15 (75%)

Table-2: At 3<sup>rd</sup> Days

Post-Operative Complication N=20 (%)	Group A (Anterior Nasal Packing) N=20 (%)	Group B (Septal Clip) N=20 (%)
Adhesion Or Synechia	5 (25%)	0 (0%)
Raw Surface	8 (40%)	2 (10%)

Table-3: At 1 Week

## DISCUSSION

In our study the use of splints resulted in a significant decrease in the degree of intranasal adhesion formation. We have also seen there is no bleeding during septal clip removal, on the other hand four patient bleed during anterior nasal pack removal. Intranasal (septal) splints



Figure-1:  
Septal clip with  
splints



Figure-2: After  
surgery with  
Septal clip with  
splints

have been used as an alternative to achieve good approximation of septal flaps and prevention of hematomas, bleeding and adhesions. We have found 40% raw surface at post-operative check-up at one week for group A, where anterior nasal packing was used and only 10% patients for group B septal clip group. At four weeks 19 patients had restoration of nose for septal clip group and 15 patients restoration of nose in case of anterior nasal packing's. We observed that anterior nasal packing is a cause of significant morbidity and discomfort during immediate post-operative periods as compared to septal clips. Septal clips gave added advantage over the anterior nasal packing in final outcome. Considering pain as one of the major concerns for the patient in the post-operative period. Nunez et al, found a significantly greater extent of post-operative pain the packed group.<sup>5</sup> Dysphagia is also significantly high in packed patients. If the patient swallows when nasal passages are blocked, air cannot pass anteriorly and it is insufflated to the middle ear. This unpleasant feeling results in poor oral intake while the packs are in place. Nayek et al, patients in packed group had significantly higher incidence of headache, discomfort in swallowing, dryness of mouth, disturbed sleep and oozing nasal secretions than in splinted group.<sup>6</sup> Awan et al, also found the incidence of post-operative discomfort significantly higher in packed group.<sup>7</sup> Although, dysphagia intermittent epiphora, dryness of mouth almost exclusively seen in patients with packs are not the causes of real concern, they do add to the patients woes.

Shaw et al found in his study on nasal mucosa of sheep reported the use of nasal packs resulted in a significant loss of the ciliated surface of the mucosa compared with the control group and he attributed the formation of nasal synechia postoperatively due to the loss of the normal mucosa.<sup>8</sup> Cook et al and Malki et al reported that there are no clear advantages to inserting an intranasal splints and that they should be used sparingly.<sup>9,10</sup> However these reports are before development of the current day more and biocompatible splints. Anand Veluswamy et al found nasal packing is a cause of significant morbidity and discomfort in the immediate post-operative period and nasal septal clips with splints are a useful alternative to existing techniques of flap approximation after septal surgery.<sup>11,12</sup> Osama et al reported significant evidence of decreasing rates of intra-nasal adhesions.<sup>13</sup>

## CONCLUSION

From our study we can conclude that the use of septal splints after sub mucosal resection for deviated nasal septum, is significant evidence of decreasing rates of intranasal adhesions and it has a good final outcome.

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