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KEY WORDS: Nasal Septal Clips, Merocel , Septal Corrective Surgery .

A PROSPECTIVE STUDY COMPARING THE OUTCOMES OF NASAL SEPTAL CLIP VERSUS MEROCEL APPLICATION AFTER NASAL SEPTAL CORRECTIVE SURGERY

Dr Kum Kum Bora — Associate Professor, Gauhati Medical College and Hospital ,Guwahati.

Dr Mohammed Izaz Ahmed* — Post Graduate Trainee, Gauhati Medical College and Hospital , Guwahati. *Corresponding Author

ABSTRACT

Nasal splint application is an important step of septal corrective surgeries to keep the septum in midline after the surgery. Septal clip is most commonly used. In our study we have compared the use of nasal septal clip and Merocel application post surgery and the morbidities associated with it.

INTRODUCTION :

Surgery for deviated nasal septum and septal spur is commonly done by ENT surgeons. Septoplasty and Submucosal resection is done. Following the surgery Nasal splinting / Nasal packing becomes one of the most important step to prevent septal hematoma , post operative epistaxis and synechiae formation and important to keep the septum in the midline.

The use of Merocel is associated with complete blockage of nasal airway and causes headache , pain, ear complaints, epiphora and post operative synechiae formation. Sometimes it may cause serious complications like Toxic Shock Syndrome. In addition Merocel removal can cause pain to the patient. Nasal septal clip on the other hand can effectively prevent hematoma formation , epistaxis and synechiae formation and other morbidities like nasal obstruction , ear complaints , epiphora .some amount of airway is also maintained by the side of the septal clips.

Other materials that can be used for nasal packing are ribbon gauge, BIPP (Bismuth Iodoform Paraffin Pack) , Glove finger pack ,Telfa .

Intranasal Splints have evolved over time from 1955 when it was first introduced by Salinger and Cohen , who used easily available material like Xray film and were held in place by septal suturing.

Goode , in 1980s introduced magnetic intranasal splints , which hold the flaps in place by magnetic attraction. Following this many modified splints were fashioned including wax plates, silicon and silastic sheets , but all required septal suturing.

Merocel packs consists of a foam like nasal packing material which is a polymer of hydroxylated polyvinyl acetate. The pack material contains cavities capable of absorbing fluid . Once moistened with fluid the material becomes softer and more elastic.

In addition to Septal deviation many patients had septal spur and we considered both Septoplasty and Submucosal resection. In our study ,we compared Nasal packing with Merocel and septal clip and their post operative outcomes.

METHODS :

This a prospective , comparative study conducted in the patient who were operated in Gauhati Medical College and hospital , ENT department between 1st August 2021 to 30th September 2022. 50 patients between age 18 years to 50 years were considered for the study belonging to either gender, who underwent Septoplasty and Submucosal Resection under Local or General Anesthesia. Patients who had other associated disease like Nasal Polyp and Chronic Rhinosinusitis were excluded from the study.

Informed consent was taken and the patient demographics were noted. The patients were arbitrarily divided into two groups-

Group A underwent Merocel packing and Group B underwent Septal clip application. Assessment of morbidity was done 24 hours after surgery and 48 hours after surgery (during the time of pack removal). Headache, nasal obstruction and ear symptoms like ear blockage and other factors were assessed.

Statistical analysis was done using SPSS software.

Description of the procedure- Septoplasty was done for anterior deviation of nasal septum and Submucosal Resection was done for posteriorly deviated nasal septum and spur.

Group A – At the end of the surgery both nasal cavities was packed with merocel.

Group B- Internal nasal splints made of polythene were used , one in each nasal cavity and secured in its anterior end using stainless steel clips with spring action. The clips were then sutured with catgut and fixed with membranous septum to prevent anterior migration.

RESULTS :

The demographics like age and sex distribution of the patients are given in the following table:

Table 1 : Age and Sex distribution.

Age(years)	Number of cases	Males	Females
18-25	15	10	5
26-40	20	13	7
41-50	15	9	6

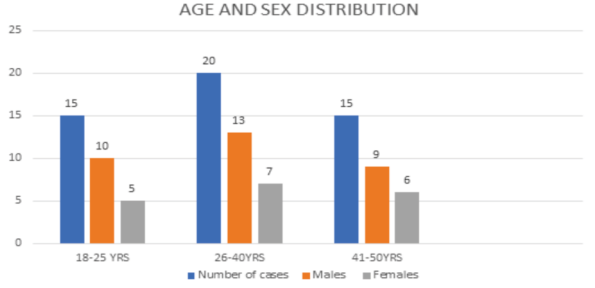


Table 2 : Side of deviation

No.of cases	Deviated nasal septum to the right	Deviated nasal septum to the left
Group A(25)	15	10
Group B(25)	12	13

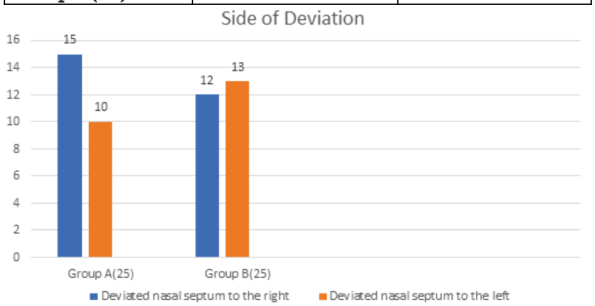
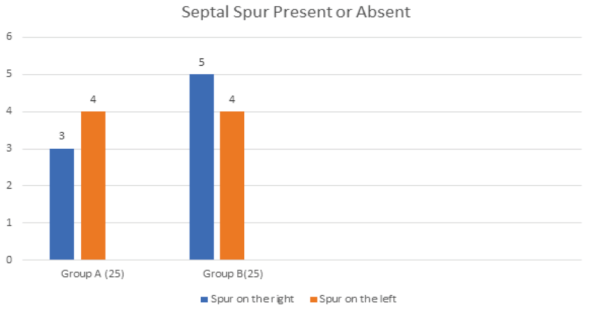


Table 3 : Septal Spur Present or Absent

No. of cases	Spur on the right	Spur on the left
Group A (25)	3	4
Group B(25)	5	4



Out of 50 patients , in Group A ,15 patients had deviation to the right and 3 patients had spur along with it and 10 patients had deviation to the left and 4 had spur along with it. In Group B ,12 patients had deviation on the right side and 5 patients had spur along with it and 13 patients had deviation on the left side and 4 had spur along with it. (Table 2 and 3)

All the patients having only anterior septal deviation underwent septoplasty and the ones with posterior deviation and spur underwent Submucosal Resection. For all the 50 patients , pain , headache and nasal obstruction were calculated by visual analogue score at 24 hours and 48 hours (after pack removal) post operatively.

The mean post operative pain score at 24 hours for Group A was 7.44 And for group B was 2.56 , mean post operative pain score at 48 hours (after merocel removal) for group A was 5.72 and for group B was 2.56 and p value (<0.01). (Table 4)

The VAS for nasal obstruction and headache was calculated and were significant with p value (<0.01). (Table 5 and 6)

Various symptoms like ear block , epiphora , and sleep discomfort were higher in patients in Group A (Merocel) compared to patients in Group B.

Table 4:Visual Analogue Score for pain.

Pain	1	2	3	4	5	6	7	8	9	10
Group A(24hrs)	0	0	0	2	3	3	4	4	5	4
Group B(24hrs)	9	6	4	2	2	1	1	0	0	0
Group A(48hrs)	0	3	2	3	4	5	5	2	2	0
Group B(48hrs)	10	5	3	3	2	1	1	0	0	0

Table 5:Visual analogue score for headache

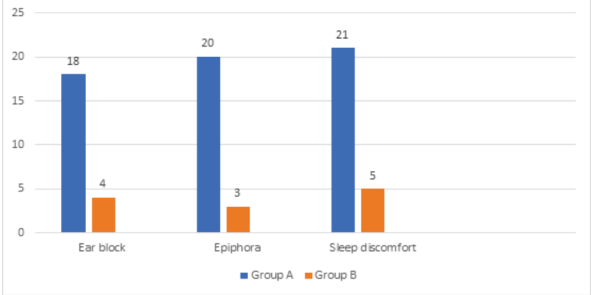
Headache (VAS)	<5	>5
Group A(24hrs)	9	16
Group B(24hrs)	18	7
Group A(48hrs)	10	15
Group B(48hrs)	21	4

Table 6 :Visual analogue score for nasal obstruction

Nasal Obstruction	<5	>5
Group A(24hrs)	0	25
Group B(24hrs)	19	6
Group A(48hrs)	7	18
Group B(48hrs)	22	3

Table 7: Comparison of various symptoms

Symptoms	Group A	Group B	P Value
Ear block	18(72%)	4(16%)	<0.01
Epiphora	20(80%)	3(12%)	<0.01
Sleep discomfort	21(84%)	5(20%)	<0.01



DISCUSSION:

All the other studies were done to compare conventional nasal packing and nasal splints/ septal clips on patients undergoing nasal septal surgeries. In this study we are comparing Merocel as a nasal pack after nasal septal surgery versus nasal splints/septal clip.

Veluswamy et al , in their study observed that septal clips are easy to use , economical and patient friendly alternative to nasal packing following nasal septal surgeries . They had a mean pain score of 7.23 with nasal packing and 2.5 with septal clips which is comparable to results obtained by our study.

Kurle et al , conducted a study and it was observed that with nasal packing , the incidence of headache was 90% and sense of discomfort 22% which is similar to our observations.

Schoenberg et al in their study on nasal packing after routine nasal surgery observed mean pain score of 5.7 as compared to 1.4 in patients in whom splints were used.

Nunez et al did study on nasal packing against septal suturing, found worse pain scores in the nasal packing group than patients who underwent mucosal suturing and have concluded nasal packing is absolutely not necessary after septal surgery.

CONCLUSION:

In our study we have found that application of Nasal Septal clips are more effective than merocel after nasal septal surgeries. There are less chances of synechiae , patient can breath through the side of the clips and flaps are more apposed in the midline due to adequate pressure effect.Removal is also easy . It is associated with comfortable post-operative period and more patient friendly and cost effective.

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