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CLINICAL STUDY ON DEVIATED NASAL SEPTUM AND ITS ASSOCIATED SYMPTOMS AND ITS MANAGEMENT

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ABSTRACT **Aim-** To study the etiological factors leading to deviated nasal septum, to study the clinical symptoms associated with DNS, to study the prevalence of DNS in different age groups and gender and to study the outcome of surgical management on symptomatic deviated nasal septum. **Methodology-** The study was done prospectively for 18 months and retrospectively for 12 months which involved 60 patients divided into 3 groups of 20 patients each who underwent surgeries as follows: Group A- Septoplasty, Group B- Septoplasty and inferior turbinectomy, Group C- Septoplasty, Inferior turbinectomy and FESS. **Results-** It was observed that In Group A, 14(70.0%) patients had reduction in symptoms of DNS after undergoing septoplasty. In Group B, 18(90.0%) patients had reduction in symptoms of DNS after undergoing inferior turbinectomy along with septoplasty. In Group C, 19 (95.0%) patients had reduction in symptoms of DNS after undergoing septoplasty along with FESS and Inferior turbinectomy. There was statistically significant association seen between reduction of symptoms after septoplasty and groups (p=0.044). **Conclusion-** The results of the study concluded that septoplasty along with FESS and inferior turbinectomy is the most effective surgery in reducing the symptoms of DNS post-operatively as compared to septoplasty and inferior turbinectomy where as septoplasty alone has minimal efficacy in reducing the symptoms post operatively

KEYWORDS : DNS, Septoplasty, Inferior turbinectomy, FESS

INTRODUCTION

Nose is the central part of the face and has an important functional, aesthetic and psychological role.[1] The nasal septum comprises of bony and cartilaginous parts which separates the nasal cavity into right and left sides both anatomically and physiologically.[2] Deviated nasal septum is of two types: Anterior cartilage deformity of the quadrilateral septal cartilage which is usually caused by direct trauma or pressure. A combined septal malformation, which affects all of the septal elements, is the second type. This is congenital and is caused by pressures occurring during pregnancy or childbirth that are applied across the maxilla.[3] The symptoms of DNS are nasal obstruction, bleeding from the nose, URTI and LRTI and otitis media, infections of the sinus and sleep apnea, snoring, repetitive sneezing, facial pain, and hyposmia or anosmia.[4] Deviated nasal septum may result in permanent changes in the nasal and sinus mucosa because of altered ventilation of the nasal cavity[5] For treatment purpose - surgical correction of the deviated nasal septum is done which can be done alone or along with inferior turbinectomy and FESS.

This study was undertaken to compare the post operative results of septoplasty alone or in combination with inferior turbinectomy and FESS.

MATERIALAND METHODS:

This study was done prospectively from January 2021 to June 2022 and retrospectively from January 2020 to December 2020 in 60 patients. The study was conducted in the Department of ENT, GRMC & Jayarogya Group of Hospitals, Gwalior, Madhya Pradesh. Patients with DNS not relieved on medical management were selected and they underwent complete history taking, complete ENT examination after taking their consent. DNE, X-ray PNS and CT PNS was done in patients who were planned for surgery.

Patients were divided into 3 groups consisting of 20 patients each
Group A- Septoplasty
Group B- Septoplasty + Inferior turbinectomy
Group C- Septoplasty + Inferior turbinectomy + FESS

INCLUSION CRITERIA :

1. Patients <60 years of age.
2. Patients with nasal deviation who are willing to participate in study

EXCLUSION CRITERIA :

1. Neoplasia
2. Fungal infections
3. Septal perforation due to epilepsy /TB/ drug abuse
4. Patients who are not willing to participate in the study.

Special investigations:

1. Diagnostic nasal endoscopy
2. CT PNS

RESULTS:

In this study, 60 patients were divided into three groups of 20 patients each who underwent surgeries as follows: Group A- Septoplasty, Group B- Septoplasty and inferior turbinectomy, Group C- Septoplasty, Inferior turbinectomy and FESS.

The male to female ratio was 1.8:1 in Group A, 1.5:1 in Group B and 2.3:1 in group C.The mean age in Group A was 29.20±10.82 years, in Group B it was 27.50±8.30 years and in Group C it was 28.25±7.55 years. Maximum patients were in the age group of 20-29 years. Developmental etiology was the most common etiological factor seen in our study affecting 45 patients (75%).

Left sided deviation was comparatively more common than right sided deviation in all the three groups. Nasal obstruction was the most common presenting complaint seen in 90% patients in Group A, 85% patients in Group B and 95% patients in Group C followed by headache in 55% in Group A, 70% in Group B and 70% in Group C. Bilateral maxillary sinusitis was most commonly seen in 8 (40%) patients in Group A, 9 (45%) patients in Group B and 10 (50%)) patients in Group C. 14 patients (70%) had reduction in symptoms of DNS after undergoing septoplasty only, 18 (90%) patients had reduction in symptoms after undergoing septoplasty and inferior turbinectomy while 19 patients (95%) patients improved after undergoing septoplasty along with inferior turbinectomy and FESS. This was found to be statistically significant with a p value of 0.044.

Table 1: Distribution of cases according to Age

Age Group (years)	Group						Total	
	Group A		Group B		Group C			
	No.	%	No.	%	No.	%	No.	%
<20 years	3	15.0%	2	10.0%	2	10.0%	7	11.7%
20-30 years	10	50.0%	11	55.0%	11	55.0%	32	53.3%
31-40 years	4	20.0%	5	25.0%	6	30.0%	15	25.0%
41-50 years	2	10.0%	2	10.0%	1	5.0%	5	8.3%
> 50 years	1	5.0%	0	0.0%	0	0.0%	1	1.7%

Total	20	100.0%	20	100.0 %	20	100.0 %	60	100.0 %

Table 2: Distribution of cases according to Gender

Gender	Group						Total	
	Group A		Group B		Group C			
	No.	%	No.	%	No.	%	No.	%
Female	7	35.0%	8	40.0%	6	30.0%	21	35.0%
Male	13	65.0%	12	60.0%	14	70.0%	39	65.0%
Total	20	100.0%	20	100.0%	20	100.0%	60	100.0%

Table 3: Distribution of cases according to Etiological factors

Etiological factors	Group						Total	
	Group A		Group B		Group C			
	No.	%	No.	%	No.	%	No.	%
Developmental	17	85.0%	15	75.0%	13	65.0%	45	75.0%
Nasal mass	0	0.0%	0	0.0%	4	20.0%	4	6.7%
Trauma	3	15.0%	5	25.0%	3	15.0%	11	18.3%
Total	20	100%	20	100%	20	100%	60	100%

Table 4: Distribution of cases according to symptoms

Symptoms	Group A	Group B	Group C	Total	P value
Nasal obstruction	18 (90.0%)	17 (85.0%)	19 (95.0%)	54 (90.0%)	.574
Nasal discharge	7 (35.0%)	6 (30.0%)	7 (35.0%)	20 (33.3%)	.928
Headache	11 (55.0%)	14 (70.0%)	13 (65.0%)	38 (63.3%)	.605
Epistaxis	5 (25.0%)	5 (25.0%)	4 (20.0%)	14 (23.3%)	.911
External deformity	3 (15.0%)	3 (15.0%)	4 (20.0%)	10 (16.7%)	.887
Hyposmia/anosmia	4 (20.0%)	4 (20.0%)	3 (15.0%)	11 (18.3%)	.895
Facial pain	3 (15.0%)	2 (10.0%)	4 (20.0%)	9 (15.0%)	.676

Table 5: CT PNS findings (Maxillary Sinus)

Maxillary sinus	Group						Total	
	Group A		Group B		Group C			
	No.	%	No.	%	No.	%	No.	%
Right	1	5.0%	3	15.0%	2	10.0%	6	10.0%
Left	4	20.0%	4	20.0%	4	20.0%	12	20.0%
Bilateral	8	40.0%	9	45.0%	10	50.0%	27	45.0%
Absent	10	50.0%	7	35.0%	10	50.0%	27	45.0%
Total	20	100%	20	100%	20	100%	60	100%

Table 6: Reduction of symptoms after surgery

Reduction Symptoms	Group						Total	
	Group A		Group B		Group C			
	No.	%	No.	%	No.	%	No.	%
No	6	30.0%	2	10.0%	1	5.0%	9	15.0%
Yes	14	70.0%	18	90.0%	19	95.0%	51	85.0%
Total	20	100%	20	100%	20	100%	60	100%

DISCUSSION

The nasal septal deformity is a common disorder of the nose in which the septum is displaced away from its normal position. Septoplasty is a common surgical procedure done for the correction of septal deformity. In this study, out of 60 patients, we compared the findings and results of patients who underwent septoplasty, septoplasty with inferior turbinectomy and septoplasty with inferior turbinectomy and FESS.

In our study, 39(65%) patients were males and 21 (35%) patients were females. Mogarnad Mohan et al observed that in his study, out of 60 patients, 40 (67%) were males and 20 (33%) were females.

The age group of the patients in our study was between 18 to 60 years. The youngest patient was 18 years old and the eldest was 52 years old. Regmi Shiva et al conducted a study which concluded that maximum number of patients belonged to the age group of 20-30 years.

Developmental etiological factor was the most common etiological factor in our study. There was no statistically significant association seen between etiological factor and groups (p=0.055), showing that the groups are independent of the etiological factor of the patients.

In this study, it was observed that nasal obstruction and headache were the most common symptoms. Study conducted by Bothra and Mathur showed that nasal obstruction was present in 90% of patients. In the study conducted by Ishwar Singh headache was the predominant symptom seen in 80% of patients, nasal blockage was seen in 76.66%, nasal discharge was seen in 43.33%, facial pain in 40% patients.

Bilateral maxillary sinusitis was most commonly seen in 8 (40%) patients in Group A, 9 (45%) patients in Group B and 10 (50%)) patients in Group C.

In our study, it was observed that In Group A, 14(70.0%) patients had reduction in symptoms of DNS after undergoing septoplasty. In Group B, 18(90.0%) patients had reduction in symptoms of DNS after undergoing inferior turbinectomy along with septoplasty. In Group C, 19 (95.0%) patients had reduction in symptoms of DNS after undergoing septoplasty along with FESS and inferior turbinectomy. There was statistically significant association seen between reduction of symptoms after septoplasty and groups (p=0.044). Rajashekar K et al conducted a study on 70 patients divided into two groups of 35 patients each in which Group 1 patients underwent septoplasty alone and Group 2 patients underwent septoplasty and inferior turbinectomy and observed the patients in Group 2 had more reduction in symptoms post-operatively. Singh Rachana et al[77] conducted a study on 50 patients divided into two groups of 25 patients each and observed that the group undergoing septoplasty only had 64% improvement whereas the group undergoing septoplasty along with FESS had 92% improvement.

CONCLUSION

The results of this study conclude that DNS is more prevalent in males than females with developmental factor being the most common etiology. Nasal obstruction followed by headache was found to be the most common presenting symptom along with other symptoms such as nasal discharge, epistaxis, hyposmia/anosmia and facial pain. On examination, turbinate hypertrophy and bilateral maxillary sinusitis were the most consistent findings. This study concludes that septoplasty along with FESS and inferior turbinectomy is the most effective surgery in reducing the symptoms of DNS post operatively as compared to septoplasty and inferior turbinectomy where as septoplasty alone has minimal efficacy in reducing the symptoms post operatively.

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