

Correlation between deviated nasal septum and external nasal deformity- A hospital based study

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Abstract

Aims and Objectives: to correlate nasal septal deviations and external nasal deformities. **Materials and Methods-** A total of 100 patients between age group of 18 to 50 years attending the OPD of SMGS Hospital, GMC Jammu between March 2018 to February 2019 were included in our study. All patients with deviated nasal septum with or without external nasal deformity were examined clinically using anterior rhinoscopy and nasal endoscopy. In our study, we classified nasal septal deviations according to Mladina Classification; Yong Ju Jang classification was used for external nasal deformity. **Results:** According to Mladina classification, most common type in our study was Type 4 nasal septal deviation. According to Yong Ju Jang classification, type 1 was the most common type of external nasal deformity observed in our study. Then, by correlating nasal septal deviations and external nasal deformity, type 4 deviated nasal septum was associated with type 1 external nasal deformity. Type 1 and 5 deviated nasal septum had no correlation with external deformity in our study. **Conclusion:** According to our study, it can be concluded that there is a close correlation between nasal septal deviation and external nasal deformity. Both entities have to be analysed together so as to have a better functional and cosmetic outcomes.

Key Word: Mladina, deviation, deformity.

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INTRODUCTION

Deviated nose deformities have always been a surgical challenge, and it is essential to achieve both functional and aesthetic improvements. This term encompasses all clinical conditions involving deviation of nasal pyramid from the midline of face. Nasal septal deviations play a critical role in nasal obstruction symptoms, aesthetic appearance of the nose, increased nasal resistance and sometimes snoring. The septal condition mostly controls the direction of deviation. Trauma creates the extrinsic forces that are exerted on septum, resulting in deviated nasal bones, upper lateral cartilages and connections with the vomer, ethmoid and maxillary crest. Intrinsic forces

can be the result of imperfect growth of septal cartilage or from trauma altering the tissue ultrastructure, after which the deviated cartilaginous tissue has a tendency to revert to its initial position. Whenever there is an external deformity of nose, its anatomical basis may be rooted in bony pyramid defect, cartilaginous framework defect, septal deformity or combination of these vectors. Septal deviations with or without external deformities can lead to symptoms ranging from nasal obstruction to nasal bleed.¹ There are various classification systems for deviated nasal septum. Nasal septal deviations can be described as developmental (C shaped or S shaped) or traumatic (irregular, angulated and sometimes dislocated). Nasal septal deviations can also be classified based on relationship of nasal septum to inferior turbinate- Degree 1: deviation did not reach inferior turbinate, Degree 2: deviation reached inferior turbinate and Degree 3: deviation reached lateral wall and compressed inferior turbinate.³ Mladina classified the deviations into 7 types: Type1- unilateral vertical septal ridge in the valve region that slightly interferes with the valve function, Type2- unilateral vertical septal ridge in the valve region touching nasal valve- totally blocks the air passage on related nasal side, Type3- unilateral vertical convexity next to anterior edge of head of middle turbinate, Type4-

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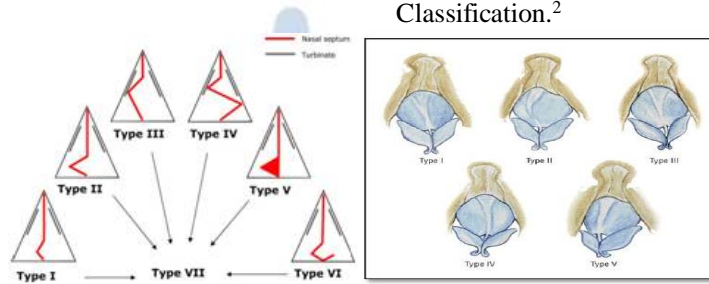
bilateral vertical deformity consisting of Type2 on one side and Type3 on other, Type 5–septal spur, Type6–horizontal deformity, consisting of two separate components- an anteriorly positioned basal septal crest on one side and more or less massive wing of intermaxillary bone on opposite side, and Type7- combination of previously mentioned types.² Depending on the orientation of two horizontal subunits (the bony pyramid and cartilaginous vault) with respect to facial midline, the external nasal deviations are classified as 5 types according to Yong Ju Jang classification : Type1 – a straight tilted bony pyramid with a straight tilted cartilaginous vault in opposite direction, Type2–a straight tilted bony pyramid with a concavely or convexely bent cartilaginous vault, Type3–a straight bony pyramid with a tilted cartilaginous vault, Type 4–a straight bony pyramid with a bent cartilaginous vault and Type5 – a straight

tilted bony pyramid and a tilted cartilaginous dorsum in the same direction.⁴

In present study, attempt was made to correlate nasal septal deviations and external nasal deformities.

MATERIALS AND METHODS

A total of 100 patients between age group of 18 to 50 years attending the OPD of SMGS Hospital, GMC Jammu between March 2018 to February 2019 were included in our study. Inclusion criteria for the study were patients with deviated nasal septum and external nasal deformity. Patients with septal abscess, septal hematoma, septal perforation, sinonasal malignancy and granulomatous disease were excluded from our study. All patients with deviated nasal septum with or without external nasal deformity were examined clinically using anterior rhinoscopy and nasal endoscopy. In our study, we classified nasal septal deviations according to Mladina Classification.²



In our study, Yong Ju Jang classification was used for external nasal deformity.⁴

RESULTS

In our study, a total of 100 patients were analysed. Out of 100, 52 patients had external nasal deformity with deviated nasal septum while 48 patients had only deviated nasal septum without any external deformity. Mean age of patient was 25.4 years. Maximum number of patients were in the age group of 21-30 years (39 %).

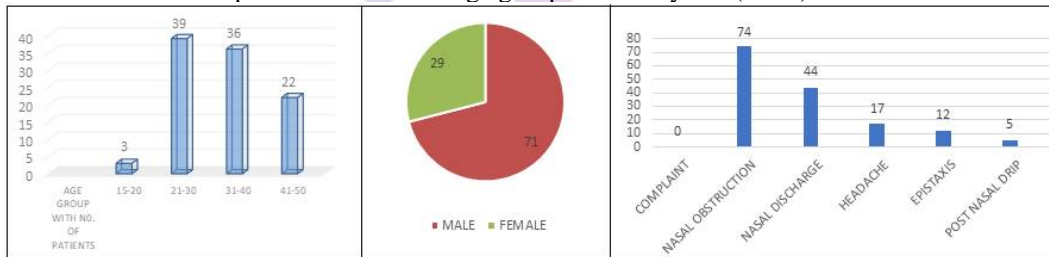


Figure 1

Figure 2

Figure 3

Figure 1, Out of 100 patients, 71 were males and 29 were females. Figure 2, Nasal obstruction (74%) was the leading chief complaint followed by nasal discharge (44%),headache (17%), epistaxis (12%) and postnasal drip (5%). Figure 3, According to Mladina classification, most common type in our study was Type 4 nasal septal deviation.

Type of nasal septal deviation	Number of patients
1	3
2	18
3	8
4	28
5	9
6	7
7	27

According to Yong Ju Jang classification, type 1 was the most common type of external nasal deformity observed in our study.

type of external nasal deformity	number of patients
No Deformity	48
1	28
2	6
3	7
4	6
5	6

Then, by correlating nasal septal deviations and external nasal deformity, type 4 deviated nasal septum was associated with type 1 external nasal deformity. Type 1 and 5 deviated nasal septum had no correlation with external deformity in our study.

External nasal deformity	Type 1 dns	Type 2 dns	Type 3 dns	Type 4 dns	Type 5 dns	Type 6 dns	Type 7 dns	Total
No deformity	3	6	7	2	9	2	11	48
1	0	0	0	12	0	4	12	28
2	0	0	0	3	0	1	0	6
3	0	8	1	5	0	0	4	7
4	0	2	0	2	0	0	0	6
5	0	2	0	4	0	0	0	6
TOTAL	3	18	8	28	9	7	27	100

DISCUSSION

One should determine a difference between the term septal deviation and septal deformity, since deviation generally means a slight declination from the medio-sagittal plane, whereas deformity means the change of shape or form. A comprehensive assessment of the nasal septum serves an essential role in preoperative planning, re-establishing function and overall cosmetic appeal. The age predilection in the present study showed that majority of patients fell in the age group of 21-30 years (39%). Out of 100 patients, 71 were males and 29 were females. Nasal obstruction was the leading chief complaint in majority of patients, followed by nasal discharge and headache. In the present study, type 4 nasal septal deviation was the most common type and type 1 external nasal deformity was most the common type. Type 4 nasal septal deviation was most commonly correlated with type 1 external nasal deformity, because the S shaped septal deviation pull the bony pyramid in the direction of posterior bony septal deviation and cartilaginous vault is pulled on the opposite direction along with anterior septal deviation.¹ Type 1 and 5 septal deviations were not associated with external deformity in our study. It may be

due to the fact that these deviations localised deviations and are not strong enough to pull the nasal dorsum to create an external deformity.¹

CONCLUSION

According to our study, it can be concluded that there is a close correlation between nasal septal deviation and external nasal deformity. Both entities have to be analysed together so as to have a better functional and cosmetic outcomes.

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