

## Original Research

## Assessment of cases of deviated nasal septum

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**Background:** A deviated septum may also cause sleep apnea, a serious condition in which a person stops breathing during sleep. The present study was conducted to assess cases of deviated nasal septum. **Materials & Methods:** 82 cases of deviated nasal septum were assessed subjectively and objectively before the surgery. Nasal patency test was done followed by anterior rhinoscopy and details were noted. Deviations were classified according to Mladina classification. **Results:** Common symptoms were nasal obstruction in 70, nasal discharge in 43, headache in 21, epistaxis in 15 and hyposmia in 25. Anterior rhinoscopy findings were septal deviation in right side in 42 and left side in 40, inferior turbinate hypertrophy in 60, congested mucosa in 25, spur in 15, external deformity in 12. Mladina classification had type I patients in 10, II in 22, III in 4, IV in 6, V in 30, VI in 7 and VII in 3 cases. The difference was significant ( $P < 0.05$ ). **Conclusion:** Maximum cases of deviated nasal septum was seen among females. Most common type found to be type V.

**Key words:** Deviated nasal septum, Mladina classification, Nasal patency

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**INTRODUCTION**

A deviated septum may also cause sleep apnea, a serious condition in which a person stops breathing during sleep. Symptoms and signs accompanying septal pathology may be nasal blockage, dryness, crusting, bleeding, itching, rhinorrhea, anosmia, headache, and cosmetic complaints. These are the common problems faced by otorhinolaryngologists in day-to-day practice.<sup>1</sup> Nasal septal deviations are anatomically often described as C- or S-shaped deviations in the vertical or horizontal plane. However, previous research has shown that the shape and size of septal deviation not always interconnects with the symptoms and the need for surgery – thus the clinical significance of the septal deviation.<sup>2</sup>

Among these symptoms, common problems are headache and nasal obstruction. Determination of the primary cause can be both challenging and frustrating. However, identification and treatment of patients whose symptoms arise from the sinonasal region is rewarding especially when a correctable anatomic

problem, i.e., septal deviation, contributes to the disease process.<sup>3</sup>

A nasal blockage or congestion can occur from a deviated nasal septum, from swelling of the tissues lining the nose or from both. Some people are born with a deviated septum. Other people develop a deviated septum after injury or trauma to the nose.<sup>4</sup> Recurrent or repeated sinus infections can also be a sign of a deviated septum. Other symptoms include frequent nose bleeds, facial pain, headache, postnasal drip, loud breathing, and snoring during sleep.<sup>5</sup> Among some cases, symptoms of a deviated septum may be relieved with medications. If not, a surgical procedure called septoplasty may be needed to repair a crooked septum and improve breathing.<sup>6</sup>

Deviations are classified according to Mladina classification as Type I: Mild deviation in vertical or horizontal plane – Type II: Moderate anterior vertical deviation of cartilaginous septum in full length – Type III: Posterior vertical deviation at level osteo-meatal complex and middle turbinate – Type IV: “S” shaped, posterior to one side and anterior to other – Type V:

Horizontal septal crest touching or not touching the lateral wall Type VI: Prominent maxillary crest contralateral to the deviation with a septal crest to the deviated side – Type VII: Combination of previously described septal deformity types.<sup>7</sup> The present study was conducted to assess cases of deviated nasal septum.

Data such as name, age, gender etc. was recorded. Patients were assessed subjectively and objectively before the surgery. Nasal patency test was done followed by anterior rhinoscopy and details were noted. Deviations were classified according to Mladina classification. X-ray nose and Water’s view and computed tomography scan of paranasal sinuses was done. Diagnostic nasal endoscopy was performed. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

**MATERIALS & METHODS**

The present study comprised of 82 cases of deviated nasal septum of both genders. All were included in the study with their written consent. The duration of the study was 4 months.

**RESULTS**

**Table I Distribution of patients**

Total- 82		
Gender	Males	Females
Number	32	50

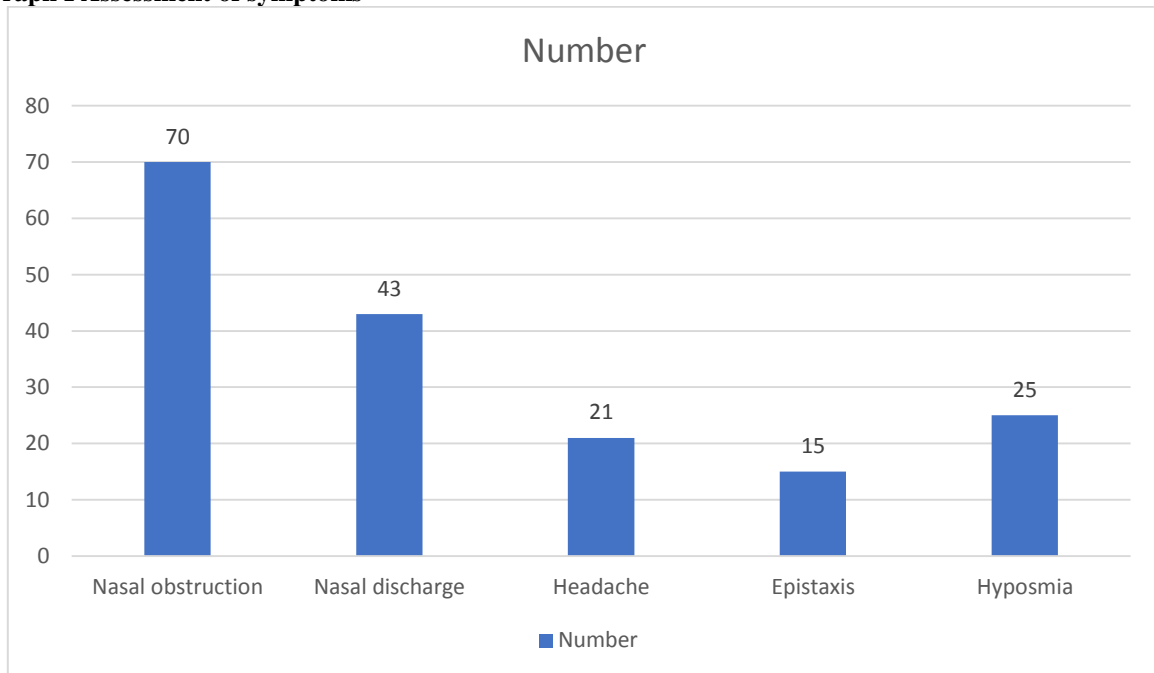
Table I shows that out of 82 patients, males were 32 and females were 50.

**Table II Assessment of symptoms**

Symptoms	Number	P value
Nasal obstruction	70	0.01
Nasal discharge	43	
Headache	21	
Epistaxis	15	
Hyposmia	25	

Table II, graph I shows that common symptoms were nasal obstruction in 70, nasal discharge in 43, headache in 21, epistaxis in 15 and hyposmia in 25. The difference was significant (P< 0.05).

**Graph I Assessment of symptoms**



**Table III Assessment of parameters**

Parameters	Variables	Number	P value
Anterior rhinoscopy finding			
Septal deviation	Right	42	0.01
	Left	40	
Inferior turbinate hypertrophy		60	
Congested mucosa		25	
Spur		15	
External deformity		12	
Mladina classification			
Type I		10	0.01
II		22	
III		4	
IV		6	
V		30	
VI		7	
VII		3	

Table III shows that anterior rhinoscopy findings were septal deviation in right side in 42 and left side in 40, inferior turbinate hypertrophy in 60, congested mucosa in 25, spur in 15, external deformity in 12. Mladina classification had type I patients in 10, II in 22, III in 4, IV in 6, V in 30, VI in 7 and VII in 3 cases. The difference was significant ( $P < 0.05$ ).

## DISCUSSION

Nasal septal deviation is a common condition of the patients who visit ENT surgeons. Treating nasal septum deviation is the primary indication for septoplasty mainly if symptomatic with nasal obstruction, with postoperative patient satisfaction rates on the order of 95%.<sup>8</sup> Septoplasty decision is based on medical history and clinical assessment of septal deviation and other indications.<sup>9</sup> Direct visualization of septal deviation on physical examination, with anterior rhinoscopy and endoscopy are the main used assessment methods. So far, there is no universally accepted classification of deviated nasal septum; the classification is useful for assessment of the patient and to plan the treatment.<sup>10</sup> Mladina's classification is the relevant and recent one and, he suggested that the classification should be followed and included in data of chronic rhinosinusitis that final elucidation of real role and importance of septal deviations is clearer.<sup>11</sup> The present study was conducted to assess cases of deviated nasal septum.

In present study, out of 82 patients, males were 32 and females were 50. Mogarnad et al<sup>12</sup> determined clinical profile of deviated nasal septum and assessed the subjective efficacy of the surgical outcome using Likert scale. Sixty symptomatic patients were taken up. Patient scored their symptom-related severity using a Likert scale preoperatively. All patients underwent conventional septoplasty. Postoperatively, their symptoms were scored on 30th, 45th, and 90th day. Statistically significant improvement was observed in the entire population: Nasal obstruction, headache ( $p < 0.001$ ), nasal discharge ( $p < 0.001$ ), facial pain ( $p < 0.001$ ), and hyposmia ( $p < 0.001$ ). Patient satisfaction was high and they used fewer nasal medications.

We found that common symptoms were nasal obstruction in 70, nasal discharge in 43, headache in 21, epistaxis in 15 and hyposmia in 25. Hoehler et al<sup>13</sup> identified the most common radiological classification with relation to clinical presentation and post-operative complications of deviated nasal septum and their relation to the deviation severity. The study included 28 patients with DNS. Type II was diagnosed among 35.7% of the cases followed by type III and IV. As for pre-operative signs and symptoms of DNS, nasal obstruction was the main complaint as it was recorded among 92.9% of the cases followed by snoring (67.9%). Nasal obstruction was the most recorded complication (32.1% of the cases) followed by external nose deformity (21.4%).

We found that anterior rhinoscopy findings were septal deviation in right side in 42 and left side in 40, inferior turbinate hypertrophy in 60, congested mucosa in 25, spur in 15, external deformity in 12. Mladina classification had type I patients in 10, II in 22, III in 4, IV in 6, V in 30, VI in 7 and VII in 3 cases. Lange et al<sup>14</sup> investigated the interrater agreement in the evaluation of nasal septal deviations in patients with chronic rhinosinusitis (CRS). A total of 30 patients were included in the study. Three rhinologists using nasal endoscopy evaluated the presence and degree of septal deviation. In the endoscopic evaluation of septal deviation, the raters attained a Kf of 0.31, 0.33 and 0.37 for the assessment of anterior deviations, inferior/posterior deviations and deviations by the perpendicular plate, respectively. In the radiologic evaluation of septal deviation, the raters attained a Kf of 0.52 (SE 0.13), 0.63 (SE 0.16) and 0.38 (SE 0.16) for the assessment of anterior deviations, inferior/posterior deviations and deviations by the perpendicular plate, respective.

Gandomi et al<sup>15</sup> concluded that there was a significant improvement in mean nasal obstruction symptom evaluation score after 3 months after septoplasty. Stewart et al<sup>16</sup> concluded that patients with nasal obstruction and septal deformity who undergo nasal septoplasty have very significant improvement in nasal obstruction. In a study by Satish and Sreedhar<sup>17</sup>, majority of patients who underwent septoplasty showed marked improvement in disease-specific symptoms, good quality of life (QOL), satisfaction, and decreased medication use.

### CONCLUSION

Authors found that maximum cases of deviated nasal septum was seen among females. Most common type found to be type V.

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