

## ORIGINAL RESEARCH

# Assessment of effect of septoplasty in relieving nasal obstruction and on quality of life

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### ABSTRACT

**Background:** The deviated nasal septum is one of the most common causes of unilateral nasal obstruction. The present study was conducted to assess effect of septoplasty in relieving nasal obstruction and on quality of life.

**Materials & Methods:** 85 patients with deviated nasal septum of both genders were enrolled. NOSE questionnaire and diagnostic endoscopy was done. **Results:** Out of 85, males were 55 and females were 30. Pre- operatively and post-operatively, anterior deviation was seen in 25 and 6, posterior deviation in 26 and 5, septal spur in 17 and 2, high DNS in 9 and 1 and hypertrophied inferior turbinate in 8 and 1 respectively. Pre- operatively and post- operatively, symptoms score for nasal congestion was 2.5 and 0.6, for nasal blockage was 3.1 and 1.5, trouble breathing through nose was 2.9 and 1.2, trouble sleeping was 1.7 and 0.9 and unable to get enough air through nose during exercise or exertion was 2.7 and 2.9 and NOSE score was 64.2 and 9.8 respectively. The difference was significant ( $P < 0.05$ ). **Conclusion:** Nasal obstruction symptom evaluation (NOSE) questionnaire effectively assessed the improvement in quality of life among the symptomatic patients.

**Key words:** deviated nasal septum, NOSE score, quality of life

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### INTRODUCTION

Olfaction, heat exchange, humidification and defence are main function of nose. All these functions require good interaction between the inspired air and the mucous membranes or the sensory cells of the olfactory system.<sup>1</sup> This is achieved by complicated aerodynamics that depends on the geometry of the internal nose. The septum helps to preserve this geometry.<sup>2</sup> The septum also supports the dorsum, columella and the tip of the nose and as such it contributes to cosmesis. The nose which is the most prominent part of the face is very much vulnerable starting from life in utero, in which the septum is mainly involved. Therefore, in adulthood a straight septum is more of an exception than the rule.<sup>3</sup>

The deviated nasal septum is one of the most common causes of unilateral nasal obstruction.<sup>4</sup> Trauma during birth including forceps delivery, passing through narrow pelvic canal etc can cause early deviation in the nasal septum or deviation which becomes evident during the pubertal growth spurt.<sup>5</sup> Surgical correction

of DNS by septoplasty is one of the most common otorhinolaryngology surgeries in adults. In the current era, the major indication for septoplasty is nasal obstruction and other associated symptoms of DNS.<sup>6</sup> Although septoplasty is a commonly performed surgery, its effectiveness in relieving nasal obstruction in adults with DNS has not been proven and remains indecisive. Scientific evidence from the literature on the benefits of septoplasty are not well-described.<sup>7</sup> The present study was conducted to assess effect of septoplasty in relieving nasal obstruction and on quality of life.

### MATERIALS & METHODS

The present consisted of 85 patients with deviated nasal septum of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Diagnostic nasal endoscopy was done to assess degree of septal deviation, site of obstruction, turbinate hypertrophy, signs of sinusitis or any other pathology.

All were subjected to x-ray and CT scan of the paranasal sinuses. Surgery was performed under general/local anesthesia after giving local infiltration with 1% xylocaine with 1:100000 adrenaline. After surgery both the nasal cavities were packed with medicated gauze and removed on the first postoperative day. Saline douching or pressurized saline nasal spray were started after 7 days and

postoperative assessment was done in terms of symptoms relieved like nasal obstruction, headache, hyposmia, post nasal discharge. Follow-up visits were done after 3rd month and 6th month. During the follow up period, NOSE questionnaire and diagnostic endoscopy was done. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

**RESULTS**

**Table I: Distribution of patients**

<b>Total- 85</b>		
<b>Gender</b>	<b>Male</b>	<b>Female</b>
Number	55	30

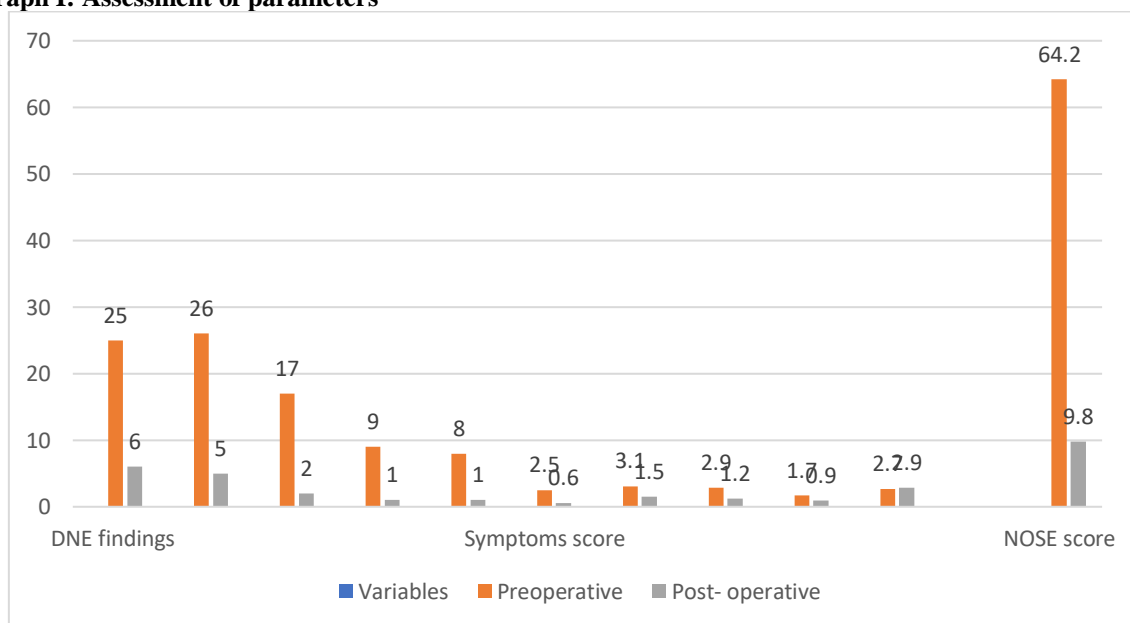
Table I shows that out of 85, males were 55 and females were 30.

**Table II: Assessment of parameters**

Parameters	Variables	Preoperative	Post-operative	P value
DNE findings	Anterior deviation	25	6	0.02
	Posterior deviation	26	5	
	Septal Spur	17	2	
	High DNS	9	1	
	Hypertrophied inferior turbinate	8	1	
Symptoms score	Nasal congestion	2.5	0.6	0.02
	Nasal blockage	3.1	1.5	
	Trouble breathing through nose	2.9	1.2	
	Trouble sleeping	1.7	0.9	
	Unable to get enough air through nose during exercise or exertion	2.7	2.9	
NOSE score		64.2	9.8	0.001

Table II, graph I shows that pre- operatively and post- operatively, anterior deviation was seen in 25 and 6, posterior deviation in 26 and 5, septal spur in 17 and 2, high DNS in 9 and 1 and hypertrophied inferior turbinate in 8 and 1 respectively. Pre- operatively and post- operatively, symptoms score for nasal congestion was 2.5 and 0.6, for nasal blockage was 3.1 and 1.5, trouble breathing through nose was 2.9 and 1.2, trouble sleeping was 1.7 and 0.9 and unable to get enough air through nose during exercise or exertion was 2.7 and 2.9 and NOSE score was 64.2 and 9.8 respectively. The difference was significant (P< 0.05).

**Graph I: Assessment of parameters**



## DISCUSSION

Septoplasty improves health-related quality of life significantly in the postoperative period.<sup>8</sup> The risk of bias is high, since all available evidence in the literature are based on studies that are only observational in nature, and randomized clinical trials are lacking.<sup>9</sup> The beneficial effects could also be explained by additional factors like the course of the disease or additional interventions such as turbinate reduction or conchoplasty performed in these patients.<sup>10,11</sup> The biases mentioned above make the advocated benefits of septoplasty questionable and possibly exaggerated. The major indication for septoplasty is nasal obstruction due to deviated nasal septum (DNS). Even though septoplasty is a commonly performed surgery, its effectiveness in relieving nasal obstruction in DNS has not been proven.<sup>12,13</sup> The present study was conducted to assess effect of septoplasty in relieving nasal obstruction and on quality of life.

We found that out of 85, males were 55 and females were 30. Kumar et al<sup>14</sup> in 120 patients with symptomatic deviated nasal septum, NOSE scoring was used to assess the severity of symptoms both preoperatively and postoperatively. Statistically significant improvement was observed in mean NOSE score during the follow up visits. The mean value increment was 48.33 and 49.8 after 3 months and 6 months respectively following surgery. Each individual symptom score improvement was also compared which showed a significant improvement in all the four symptom scores out of five. Diagnostic nasal endoscopic evaluation also showed promising results with less residual deformity on follow up.

We found that pre-operatively and post-operatively, anterior deviation was seen in 25 and 6, posterior deviation in 26 and 5, septal spur in 17 and 2, high DNS in 9 and 1 and hypertrophied inferior turbinate in 8 and 1 respectively. Pre-operatively and post-operatively, symptoms score for nasal congestion was 2.5 and 0.6, for nasal blockage was 3.1 and 1.5, trouble breathing through nose was 2.9 and 1.2, trouble sleeping was 1.7 and 0.9 and unable to get enough air through nose during exercise or exertion was 2.7 and 2.9 and NOSE score was 64.2 and 9.8 respectively. Dhullipalla et al<sup>15</sup> in their study 100 patients with symptomatic deviated nasal septum were studied. These patients underwent septoplasty. They found statistically significant improvement in mean NOSE score during the follow up visits. The mean value increment was 48.70 and 48.95 after 3 months and 6 months respectively following surgery. Each individual symptom score improvement was also compared which showed a significant improvement in all the four symptom scores out of five. Diagnostic nasal endoscopic evaluation also showed promising results with less residual deformity on follow up.

The limitation the study is small sample size.

## CONCLUSION

Authors found that nasal obstruction symptom evaluation (NOSE) questionnaire effectively assessed the improvement in quality of life among the symptomatic patients.

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