

**ORIGINAL RESEARCH**

**EVALUATION OF EFFECT OF SEPTOPLASTY IN RELIEVING NASAL OBSTRUCTION AND ON QUALITY OF LIFE**

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**ABSTRACT**

**Background:** To evaluate the effect of septoplasty in relieving nasal obstruction and on quality of life.

**Methods:** 104 patients with deviated nasal septum of both genders were selected for the study. A diagnostic endoscopy and the NOSE questionnaire were performed.

**Results:** Out of 104 patients, males were 62 and females were 42. The pre-operative NOSE score was 51.2 and post-operative score was 9.4 respectively. A significant score was observed ( $P < 0.05$ ). Pre-operatively and post-operatively, trouble breathing through nose was 3.1 and 1.5 respectively. Symptoms score for nasal congestion was 2.9 and 0.8 respectively. For nasal blockage was 3.4 and 1.7 respectively. Trouble sleeping score was 1.9 and 0.6 respectively. Unable to get enough air through nose during exercise or exertion was 2.8 and 2.5 respectively. The difference was significant ( $P < 0.05$ ). DNE findings were anterior deviation seen in 36 and 5, posterior deviation in 30 and 7, septal spur in 20 and 2, high DNS in 11 and 1 and hypertrophied inferior turbinate in 7 and 0 preoperatively and post-operatively respectively. The difference was significant ( $P < 0.05$ ).

**Conclusion:** The nasal obstruction symptom assessment (NOSE) questionnaire was a useful tool for evaluating how well the symptomatic patients' quality of life had improved.

**Keywords:** NOSE score, deviated nasal septum, breathing, sleeping score

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**INTRODUCTION**

The nose's primary functions are defense, humidification, heat exchange, and odor. Good communication between the inspired air and the olfactory system's sensory cells or mucous membranes is necessary for all of these tasks.<sup>1</sup> Complicated aerodynamics, which rely on the internal nose's geometry, are used to accomplish this. This geometry is maintained in part by the septum.<sup>2</sup> The septum also aids in cosmesis by supporting the tip of the nose, the dorsum, and the columella. The most noticeable feature of the face, the nose, is extremely sensitive beginning with early childhood, with the septum being primarily affected. Consequently, a straight septum is more of an exception than the norm in maturity.<sup>3</sup>

One of the most frequent causes of unilateral nasal obstruction is a deviated nasal septum. Birth trauma, such as forceps delivery or passing through a narrow pelvic canal, can cause an early

deviation in the nasal septum or a deviation that manifests during the pubertal growth spurt. One of the most common adult otorhinolaryngology surgeries is septoplasty, which is performed to correct a deviated nasal septum.<sup>4</sup> In the modern era, nasal obstruction and other associated symptoms of DNS are the main indications for septoplasty. Though septoplasty is a frequently performed procedure, its efficacy in relieving nasal obstruction in adults with DNS has not been demonstrated and is still debatable. The benefits of septoplasty have not been thoroughly documented in scientific literature.<sup>5</sup> The present study was conducted to evaluate the effect of septoplasty in relieving nasal obstruction and on quality of life.

**MATERIALS & METHOD**

The present consisted of 104 patients suffering from 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. To evaluate the degree of septal deviation, the location of obstruction, turbinate hypertrophy, sinusitis symptoms, or any other pathology, a diagnostic nasal endoscopy was performed. Everybody underwent a paranasal sinus CT scan and x-ray. Following local infiltration with 1% xylocaine and 1:100000 adrenaline, surgery was conducted under general/local anesthesia. On the first postoperative day following surgery, medicated gauze was used to pack both nasal cavities and remove them. After seven days, saline douching or pressured saline nasal spray was started, and a postoperative evaluation was conducted to see whether any symptoms, such as nasal blockage, headache, hyposmia, and post-nasal discharge, had been eased. Following the third and sixth months, follow-up visits were conducted. A diagnostic endoscopy and the NOSE questionnaire were completed during the follow-up period. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

<b>Total- 104</b>		
<b>Gender</b>	<b>Male</b>	<b>Female</b>
Number	62	42

Table I shows that out of 104 patients, males were 62 and females were 42.

**Table II Assessment of NOSE score**

<b>NOSE score</b>	<b>Mean</b>	<b>P value</b>
Pre- operative	51.2	0.01
Post- operative	9.4	

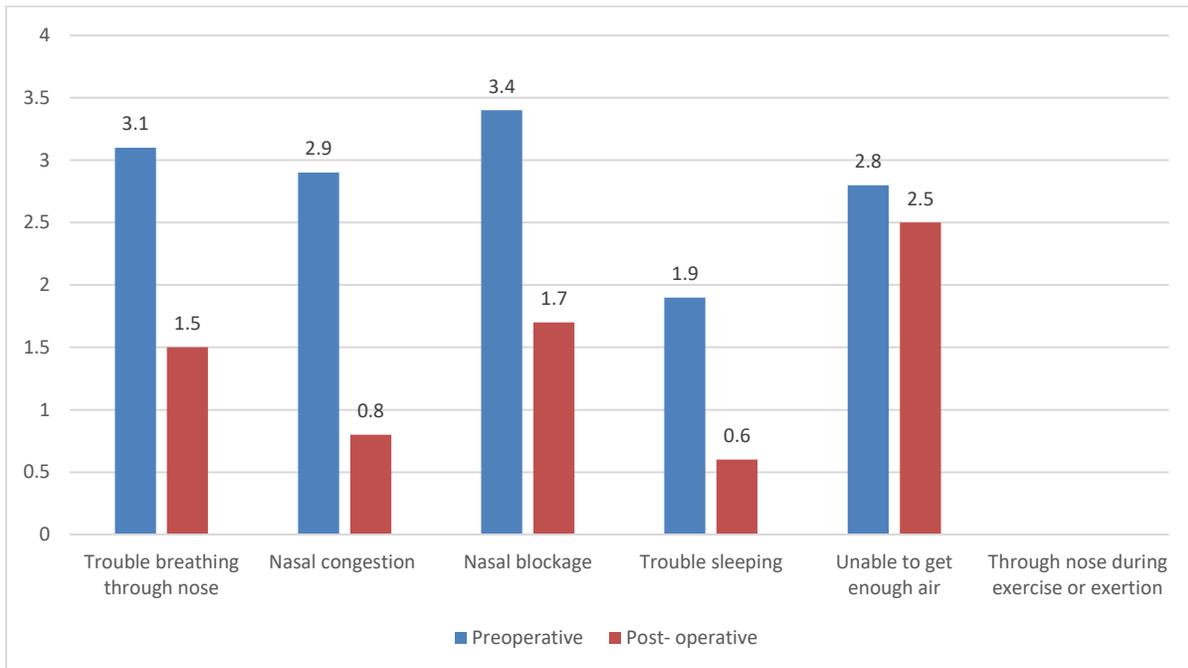
The pre- operative NOSE score was 51.2 and post- operative score was 9.4 respectively. A significant score was observed (P< 0.05) (Table II).

**Table III Comparison of symptoms score**

<b>Parameters</b>	<b>Preoperative</b>	<b>Post- operative</b>	<b>P value</b>
Trouble breathing through nose	3.1	1.5	0.01
Nasal congestion	2.9	0.8	0.04

Nasal blockage	3.4	1.7	0.01
Trouble sleeping	1.9	0.6	0.05
Unable to get enough air Through nose during exercise or exertion	2.8	2.5	0.81

Pre- operatively and post- operatively, trouble breathing through nose was 3.1 and 1.5 respectively. Symptoms score for nasal congestion was 2.9 and 0.8 respectively. For nasal blockage was 3.4 and 1.7 respectively. Trouble sleeping score was 1.9 and 0.6 respectively. Unable to get enough air through nose during exercise or exertion was 2.8 and 2.5 respectively. The difference was significant ( $P < 0.05$ ) (Table III, graph I).



**Graph I Comparison of symptoms score**

**Table IV Comparison of DNE findings**

Variables	Preoperative	Post- operative	P value
Anterior deviation	36	5	0.01
Posterior deviation	30	7	
Septal Spur	20	2	
High DNS	11	1	
Hypertrophied inferior turbinate	7	0	

DNE findings were anterior deviation seen in 36 and 5, posterior deviation in 30 and 7, septal spur in 20 and 2, high DNS in 11 and 1 and hypertrophied inferior turbinate in 7 and 0 preoperatively and post- operatively respectively. The difference was significant ( $P < 0.05$ ) (Table IV)

**DISCUSSION**

The postoperative period following a septoplasty shows a considerable improvement in health-related quality of life.<sup>6,7</sup> Because there are few randomized clinical trials and all of the information that is currently accessible in the literature is based on observational studies, there is a substantial risk of bias.<sup>8,9</sup> The course of the disease or other treatments, like turbinate reduction or conchoplasty, that these patients underwent, could potentially account for the positive benefits. The benefits of septoplasty that are promoted are dubious and may even be overstated because of the biases already noted.<sup>10,11</sup> Nasal obstruction resulting from a deviated nasal septum is the primary rationale for septoplasty (DNS). Despite being a frequently done procedure, septoplasty's ability to relieve nasal blockage in DNS patients has not been demonstrated.<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 104 patients, males were 62 and females were 42. The pre- operative NOSE score was 51.2 and post- operative score was 9.4 respectively. In the study by Dhullipalla et al<sup>14</sup>, 100 patients with a symptomatic deviated nasal septum were examined. Septoplasty was performed on these patients. During the follow-up visits, they discovered a statistically significant improvement in the mean NOSE score. Following surgery, the mean value increment was 48.70 and 48.95 at three and six months, respectively. A comparison of each individual symptom score improvement revealed a significant improvement in each of the four out of five symptom ratings. Promising results were also seen in the diagnostic nasal endoscopic examination, with reduced residual deformity at follow-up.

We observed that pre- operatively and post- operatively, trouble breathing through nose was 3.1 and 1.5 respectively. Symptoms score for nasal congestion was 2.9 and 0.8 respectively. For nasal blockage was 3.4 and 1.7 respectively. Trouble sleeping score was 1.9 and 0.6 respectively. Unable to get enough air through nose during exercise or exertion was 2.8 and 2.5 respectively. NOSE scoring was utilized by Kumar et al<sup>15</sup> in 120 patients with symptomatic deviated nasal septum to evaluate the intensity of symptoms both before and after surgery. The mean NOSE score improved statistically significantly throughout the follow-up visits. Following surgery, the mean value increment was 48.33 and 49.8 after three and six months, respectively. A comparison of each individual symptom score improvement revealed a significant improvement in each of the four out of five symptom ratings. Promising results were also seen in the diagnostic nasal endoscopic examination, with reduced residual deformity at follow-up.

We observed that DNE findings were anterior deviation seen in 36 and 5, posterior deviation in 30 and 7, septal spur in 20 and 2, high DNS in 11 and 1 and hypertrophied inferior turbinate in 7 and 0 preoperatively and post- operatively respectively. Dąbrowska- Bien J et al<sup>16</sup> evaluated quality of life after septoplasty in adults with nasal obstruction. There was a significant improvement in nasal obstruction after septoplasty. Before septoplasty, the mean score on NOSE was  $60.3 \pm 20.4$ ; 3 months after surgery, it was  $32.9 \pm 16.8$ ; and 7 months after surgery it was  $39.6 \pm 33.2$ . The VAS results also proved a significant enhancement in nasal obstruction after septoplasty. Patients reported an improvement in nasal obstruction as well as a positive change in quality of life, confirming the effectiveness of septoplasty.

**CONCLUSION**

The nasal obstruction symptom assessment (NOSE) questionnaire was a useful tool for evaluating how well the symptomatic patients' quality of life had improved.

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