

Quality Of Life In Post Septorhinoplasty Our Experience

Dr Swathi Sidharth, Dr Shaul Hameed

Department Of Otorhinolaryngology, Government Medical College Siddipet, India

Abstract:

Background: The demand for Septorhinoplasty has significantly increased over past two decades due to increased personal interest, media awareness and advances in surgical techniques. This trend is most common in younger age group for both men and women. The quality of surgery, surgeon's level of expertise and most importantly the patient's level of expectation are important factors in patient satisfaction with Septorhinoplasty.

Materials and Methods: After approval from ethics committee, a prospective observational study was taken at our tertiary care Centre for a period of 18 months in 32 patients of age group between 18 years to 50 years both males and females both literates and illiterates. NOSE (Nasal Obstruction Symptom Evaluation) questionnaire, which scores nasal function and ROE (Rhinoplasty Outcome Evaluation) questionnaire, which scores cosmetic status is used to measure the outcome evaluation questionnaire undertaken 1 day prior to surgery, 3 months and 6 months post-surgery and outcome noted

Results: The mean pre and post operative nose score were $72.50 \pm (15.34)$ and $19.06 \pm (11.03)$ respectively. Post op NOSE score was significantly lower than pre op score ($p < 0.0001$). Post op ROE score $75.10 \pm (10.66)$ were significantly higher than pre op score $28.10 \pm (8.2)$ ($p < 0.0001$).

Conclusion: The present study showed that in our patient population both form and function are overwhelming improved with septorhinoplasty

Key Word: septorhinoplasty, nasal obstruction, nose, outcome, score.

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I. Introduction

In today's health care environment, the ability to quantify patient's benefit from interventions in Otorhinolaryngology is increasingly important. The focus on outcome-based research has expanded greatly in past decade and is quickly becoming the basis for justifying one treatment over another.

The demand for Septorhinoplasty has significantly increased over past two decades due to increased personal interest, media awareness and advances in surgical techniques. This trend is most common in younger age group for both men and women. The quality of surgery, surgeon's level of expertise and most importantly the patient's level of expectation are important factors in patient satisfaction with Septorhinoplasty. Patient satisfaction varies according to gender, age, educational level, culture, ethnic origin and last but not the least patient expectation.

In Septorhinoplasty, instruments developed to measure patients' improvement in quality of life after surgery include NOSE (Nasal Obstruction Symptom Evaluation) questionnaire, which scores nasal function and ROE (Rhinoplasty Outcome Evaluation) questionnaire, which scores cosmetic status. Intimate relationship precludes studying one without looking at other hence, we use both NOSE and ROE scale in same patients for pre-operative and post-operative comparison.

II. Material And Methods

This prospective comparative study was carried out on patients of Department of Otorhinolaryngology at Government Medical College Siddipet, Telangana State from January 2022 to June 2023. Study was carried out in 32 patients of age group between 18 years to 50 years both males and females both literates and illiterates.

Study Design: Prospective observational study

Study Location: Department of Otorhinolaryngology at Government Medical College Siddipet, Telangana State.

Study Duration: January 2022 to June 2023.

Sample size: 32 patients.

Subjects & Selection method: The study population was patients who presented to Department of Otorhinolaryngology at Government Medical College Siddipet, Telangana State with nasal obstruction and external deformity of nose.

Inclusion criteria:

1. Patients with age more than 17 yrs.
2. Patients willing to give consent
3. Patients willing for follow up for at least 3 months.

Exclusion criteria:

1. Patients more than 50 years of age.
2. Patients not giving consent
3. Patients not willing for follow up were excluded.
4. Revision cases.
5. Allergic rhinitis patients were excluded.

Procedure methodology

Detailed history was taken and clinical examination and basic investigations were done in every patient. Patients who were found to have body dysmorphic features were subjected to Psychologist/Psychiatrist evaluation. Informed written consent obtained from every patient. Pré operative CT scan and nasal endoscopy was done for every patient. Preoperative and post operative photographs were taken after obtaining consent. Subjective analysis of nasal obstruction, nasal function and cosmetic status was assessed with Nose Obstruction Symptom Evaluation (NOSE) scale and Rhinoplasty Outcome Evaluation Score (ROE) 1-day prior pre operatively and post operatively 3months and 6 months. All patients underwent external deformity and septal deviation correction via open approach.

Table no :1 NOSE scale questionnaire

	Not a Problem	Very mild problem	Moderate problem	Fairly bad problem	Severe problem
1.Nasal congestion	0	1	2	3	4
2.Nasal obstruction	0	1	2	3	4
3.Difficulty in breathing through nose	0	1	2	3	4
4.Difficulty in sleeping	0	1	2	3	4
5.Difficulty breathing at exercise or exertion	0	1	2	3	4

Total 5 x 4 = 20 (max score),
Maximum score multiplied by 5 for final score which is in 100

Table no 2: Severity Range of NOSE Score

RANGE OF SCORE	SEVERITY
0 – 25	Mild nasal obstruction
26 – 50	Moderate nasal obstruction
51 – 75	Severe nasal obstruction
76 – 100	Extremely Severe nasal obstruction

More the score severe is nasal obstruction.

Table no 3: ROE score questionnaire

	Not at all	Somewhat	Moderately	Very much	Completely
1. How well do you like the appearance of your nose?	0	1	2	3	4
2.How well are you able to breathe through your nose?	0	1	2	3	4

3.How much do you feel your friends and loved ones like your nose?	0	1	2	3	4
4.Do you think your current nasal appearance limits your social or professional activities	0	1	2	3	4
5.How confident are you that your nasal appearance is the best that it can be?	0	1	2	3	4
6.Would you like to surgically alter the appearance or function of your nose?	0	1	2	3	4

Consists of 6 questions and each scored between 0 and 4 points, $6 \times 4 = 24$ (max score).

Max score divided by 24 then multiplied with 100, gives the final score

Higher score indicates patients' satisfaction both functionally and aesthetically Lower scores indicate dissatisfaction.

Unsatisfied - <50

Satisfied – 50 – 75

Very Satisfied - >75

PRE-OP



POST OP



PRE-OP



POST OP



III. Result

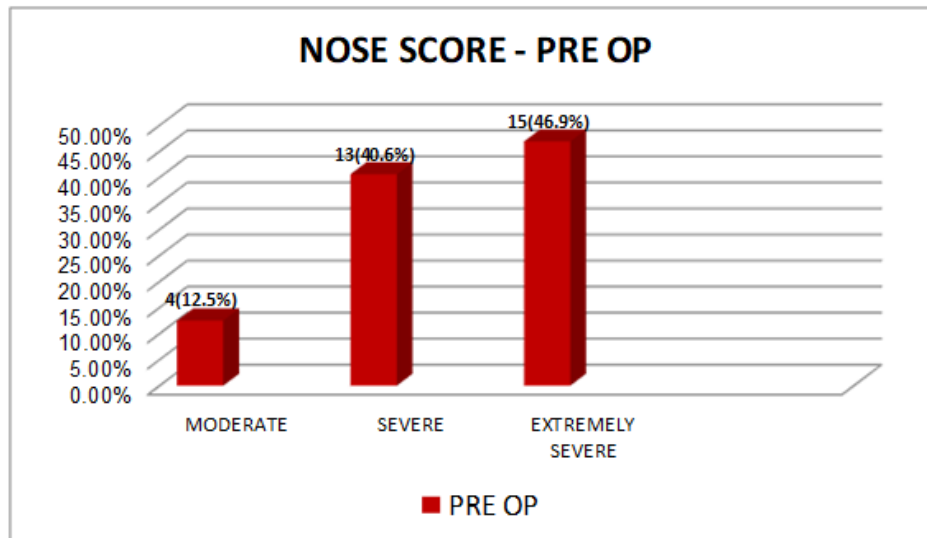
A total of 32 patients who underwent septorhinoplasty met preliminary inclusion-exclusion criteria and completed all preoperative and postoperative NOSE Score and ROE Score evaluations were included in the study. Out of 32 patients, 14 were females and 18 males, mean age was 26.31 ± 6.46 years.

Pre operatively, 4 (12.5%) patients had moderate nasal obstruction, 13(40.6%) with severe nasal obstruction and 15(46.9%) had extremely severe nasal obstruction; after postoperative evaluation 30(93.8%) fell into mild obstruction category but 2(6.3%) had severe obstruction postoperatively.

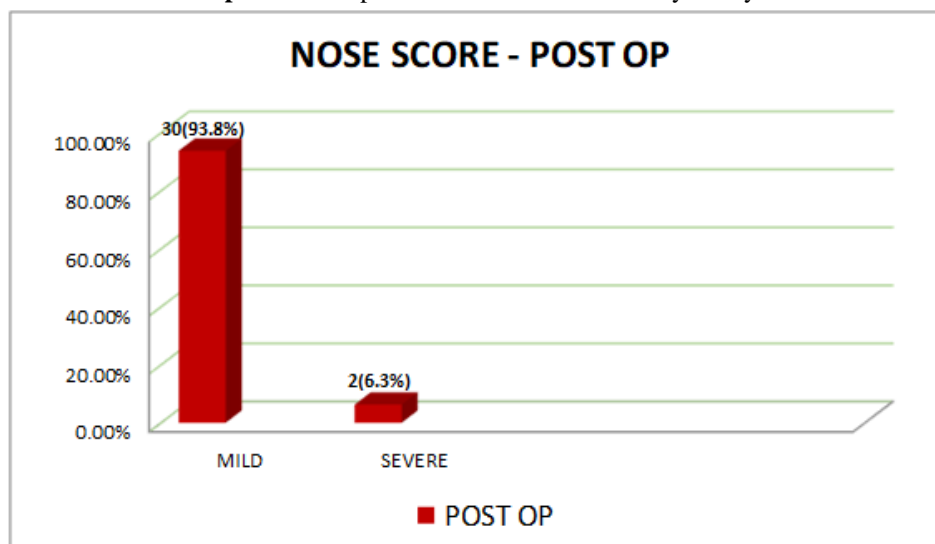
Table no 4: NOSE score statistical analysis

	NOSE score severity	No: of patients	Percentage
Pre-operative	Moderate obstruction (26-50)	4	12.5
	Severe obstruction (51-75)	13	40.6
	Extremely severe obstruction (76-100)	15	46.9
Post operative	Mild obstruction (0-25)	30	93.8
	Severe obstruction (51-75)	2	6.3

Graph 1 – Preoperative NOSE Score Severity



Graph 2 – Postoperative NOSE Score Severity Analysis

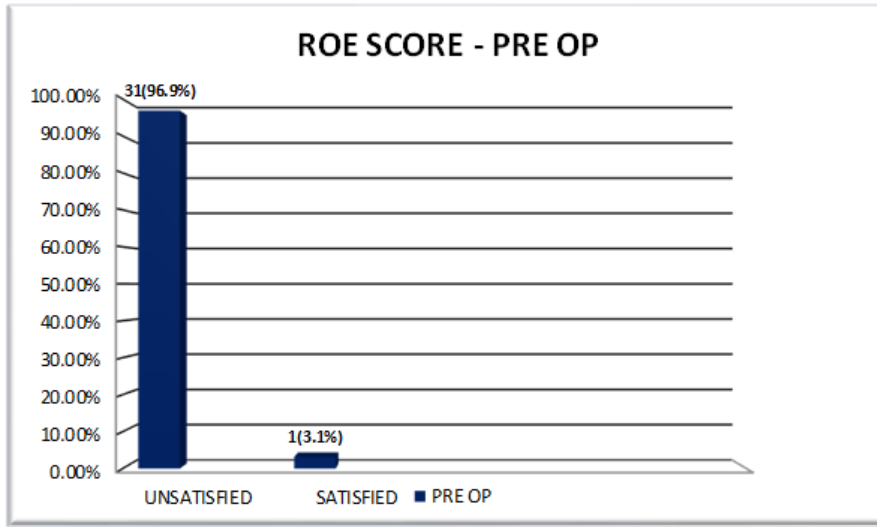


31(96.9%) of patients in the study was aesthetically unsatisfied preoperatively but, 11(34.4%) was very satisfied and 20(62.5%) was satisfied postoperatively.1(3.1%) percent was unsatisfied even postoperatively which can be considered as a failure of our surgery.

Table 5: ROE Score Statistical Analysis

	ROE score	No: of patients	Percentage
Pre-test	Unsatisfied (<50)	31	96.9
	Satisfied (50 – 75)	1	3.1
Post test	Unsatisfied (<50)	1	3.1
	Satisfied (50-75)	20	62.5
	Very Satisfied (>75)	11	34.4

Graph 3 – Preoperative ROE Score Analysis



Graph 4 – Postoperative ROE score analysis

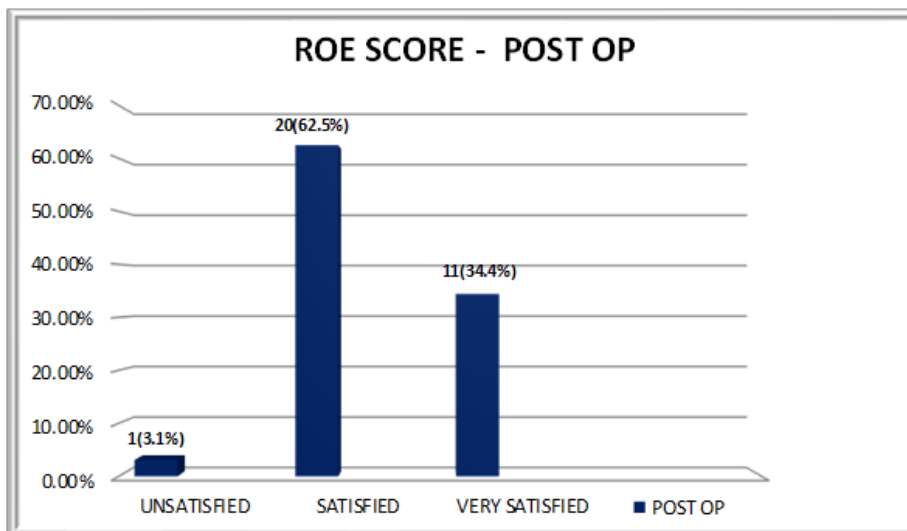


Table no 6: Statistical Analysis of Data

Score		Mean	Sd	P value (wilcoxon signed ranks test)
NOSE score	Pre operative	72.50	15.345	0.0001
	Post operative	19.06	11.031	
ROE score	Pre operative	28.109	8.2024	0.0001
	Post operative	75.106	10.6640	

The mean preoperative and postoperative NOSE scores were $72.50 \pm (15.34)$ and $19.06 \pm (11.03)$, respectively. Post-op NOSE score was significantly lower than pre- op scores ($p < 0.0001$). Post-op ROE score $75.10 \pm (10.66)$ were significantly higher than pre-op scores $28.10 \pm (8.2)$ ($p < 0.0001$).

IV. Discussion

Goal of rhinoplasty is to restore function and aesthetic appearance of nose and improve quality of life. Aesthetics of a person's nose can profoundly impact the way he or she is perceived by the outside world. Patient satisfaction is the principal factor that measure success of procedure. Social environment, education, life experience and level of expectation (which may or may not be realistic), all these factors influence patient satisfaction⁽¹⁾

In the present study, we chose to use the ROE and NOSE questionnaires, because they have been previously validated. Dolan⁽²⁾ found that NOSE scores correlate well with subjective nasal breathing assessments and correlate poorly with acoustic rhinometry. Thus, the NOSE scale actually may provide a better measure of the ultimate outcome and success of nasal surgery than rhinometry. Spielman et al.⁽³⁾ did a literature review for the methods used to evaluate different techniques of nasal valve surgery and found that recent studies have aimed toward presenting outcomes of nasal valve surgery through measurements of NOSE scores.

ROE questionnaire is easy to use and has simple scoring system and interpretability of final score is easy. This quantifies the result from the surgical procedure, assessing respiratory function, quality of life and cosmetic results. Psychological characteristics (self-consciousness of appearance, self-esteem) should be evaluated preoperatively. Facial cosmetic surgeries have a huge psychological impact. Patient with psychological abnormalities may be anxious or distressed and may give unexpected responses even after good surgical corrections.⁽⁴⁾

First reliable questionnaire for plastic surgeries was made by Alsarraf et al.^{(5),(6)}. That was later modified for patient seeking rhinoplasty called Rhinoplasty Outcome Evaluation (ROE) by Arima et al.⁽⁷⁾ This measures three qualitative aspects: physical, psychological and social aspects. A gain of a minimum score of 36 is considered improvement. A postoperative operative score of 80% is considered excellent result. This indicates patient is very satisfied.

Over the last years, cosmetic surgical procedure is increasing due to growing focus on health, fitness, looks trend of posting selfies on social media and the fact that beautiful people have an advantage in many areas of life.

In the present study, we performed a retrospective review with prospective follow-up of 32 rhinoplasty patients. We evaluated preoperatively and, in the 3rd post operative month with ROE (Rhinoplasty Outcomes Evaluation) questionnaire and NOSE (Nasal Obstruction Symptom Evaluation) Scale questionnaires which are highly reliable and consistent.

A number of prospective case series have been published previously, but each had fewer patients like we are presenting—26 patients in Alsarraf et al., 41 in Most⁽⁸⁾ and 58 in Meningaud et al.⁽⁹⁾ and shorter follow-up periods like our study. These prospective studies focused largely on evaluation of a single technique.

In the present study, NOSE scores were used to assess nasal function after rhinoplasty. Less than 10% of the patients reported a worsening of scores. Analysis of NOSE scale showed significant improvement in the postoperative state compared with the preoperative state with use of a paired test ($P = .0001$). The mean NOSE score preoperatively was 72.50; the mean postoperative score was 19.06. The mean NOSE score improvement was 53.44. There was no significant difference between genders with regard to NOSE (Nasal Obstruction Symptoms Evaluation) score changes.

The NOSE scale has been used previously to evaluate nasal obstruction^(2,10,11-13). Using the NOSE scale, Rhee et al.⁽¹¹⁾ demonstrated significant improvement in nasal valve function and nasal breathing after nasal valve surgery (Functional Rhinoplasty) in a case series of 20 patients and a mean follow-up period of 6 months. They also used the NOSE scale to study the effect of different techniques on the nasal valve. Dolan⁽²⁾ studied the effect of an in-office minimally invasive upper lateral trimming technique on nasal valve function in 29 patients with 3-month follow-up. Most⁽⁸⁾ prospective study to evaluate the functional effects of rhinoplasty, using NOSE scores of 41 patients (mean age, 41.5 years; follow-up period, 1 year). He found significant improvement of NOSE scores after rhinoplasty (mean preoperative NOSE score, 58.4; mean postoperative NOSE score, 15.7). He also found good correlation between NOSE scores and the patients' subjective visual analogue scores. Stewart et al.⁽¹³⁾ found significant improvement in mean NOSE score at 3 months after septoplasty (67.5 vs. 23.1; $P < .01$), with unchanged results at 6 months.

Analysis of the distribution of the difference between the preoperative and postoperative ROE scores showed significant improvement in the postoperative state compared with the preoperative state ($P = .0001$). The mean ROE scores preoperatively were 28.109; the mean postoperative score was 75.106 mean improvement, 46.9. Alsarraf et al.^(5,6) used ROE scores, and the mean preoperative score was 38.8, mean postoperative score was 83.3 and mean improvement was 44.5. These numbers were approximately in accordance with our study.

There was no significant difference between genders with regard to ROE score changes. Only 3.1% reported dissatisfaction in our procedure aesthetically.

There is no role today for addressing the appearance of the nose with rhinoplasty without simultaneously ensuring excellent breathing. Similarly, a surgeon cannot simply address such issues as nasal valve obstruction without altering the cosmetics of the nose. Structural grafting to correct nasal obstruction problems change the appearance of the nose because cartilage grafts add bulk to the nasal dorsum and sidewall. Therefore, the goal of every surgery for nasal obstruction should include an attempt by the surgeon to ensure a cosmetically acceptable outcome while providing structural improvements to the weakened sidewall or tip to improve nasal breathing.⁽¹⁴⁾

Our study was prospective study which allows us to choose good candidate for surgery and to access results objectively.

Small sample size, assessment of single evaluation instrument, lack of matched control group is limitations of our study.

Study with larger sample size, longer follow up, use of more specific tool for assessment of quality of life will be appreciated.

V. Conclusion

The present study showed that in our patient population, both form and function are overwhelmingly improved with rhinoplasty. We feel confident in continuing to provide our patients similar surgical interventions in the future, given the successful outcomes we have observed to date. Future prospective studies can be performed using these same outcome measures and questionnaires to further support our findings.

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