

Post-surgery Outcome Measurement of 30 Patients with Crooked Nasal Deformity using Rhinoplasty Outcome Evaluation Scale

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ABSTRACT

Objective: The aim of the study was to assess the outcome of nasal deformity correction using rhinoplasty outcome evaluation (ROE) scale.

Materials and methods: We conducted a prospective study of 30 patients with crooked nasal deformity in period 2008 to 2011 and assessed outcome with the help of ROE scale.

Results: Preoperative mean ROE score was 34.15 ± 15.58 . All 30 patients ROE score was less than 85 in preoperative period. Postoperative mean score was 86.50 ± 7.07 with a mean gain of 52.35. 21/30 patients (70%) had postoperative score of more than 85 (excellent).

Conclusion: Rhinoplasty outcome evaluation scale is a useful subjective tool to assess the impact of deformity and outcome after surgery (patient's satisfaction).

Keywords: Evaluation, Nasal deformity, Rhinoplasty.

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INTRODUCTION

Nasal deformity clearly has an impact on facial esthetics and more so on patient's self-confidence and psychology. Earlier, patients used to undergo this surgery for both cosmetic as well as functional purposes (nasal obstruction). With increasing awareness, more and more patients are coming with demand for cosmetic purposes. In such, a scenario patient's satisfaction become as important as surgeon's. One can have pre- and postoperative photographs for assessment. We conducted this study to

subjectively assess the patient satisfaction with the help of role of rhinoplasty outcome evaluation (ROE) scale.

MATERIALS AND METHODS

This is a prospective study of 30 patients with crooked nasal deformity conducted from 2008 to 2011. Detailed history and clinical examination was done. Digital clinical photographs were taken. All 30 patients gave informed written consent for the surgery. Patients were asked to fill ROE scale proforma. Proforma was explained to all patients in detail (Table 1). Rhinoplasty outcome evaluation scale¹ consists of six questions that studies three quality of life domains: physical, mental/emotional and social. Each question is scored on a likert scale from 0 to 4 and is converted to a total score of 0 to 100 by dividing by 24 and multiplying by 100. More is the score; better is the patient's satisfaction. A postoperative score above 85 is considered excellent¹ and it means patient is very satisfied. A gain of minimum 36 score in ROE scale is considered improvement.²

All patients underwent surgery. There were no intra-operative/postoperative complications. After 6 months of surgery, all patients were called back and they filled ROE questionnaire again and digital photographs were taken. Minimum 6 months follow-up was mandatory as nasal shape is expected to stabilize by 6 months.

Table 1: Rhinoplasty outcome evaluation questionnaire

<i>Rhinoplasty outcome evaluation questionnaire¹</i>
• How well do you like the appearance of your nose?
• How well are you able to breathe through your nose?
• How well do you feel your friends and loved ones like your nose?
• How confident are you, that your nasal appearance is the best that it can be?
• Do you think, your current nasal appearance limits your social or professional activities?
• Would you like to surgically alter the appearance or function of your nose?
• Questions (1-4): Scores are given as: 0—not at all, 1—not much, 2—unequivocal, 3—just fine, 4—completely
• Question 5: Scores are given as: 0—always, 1—most of the times, 2—sometime, 3—once in a while, 4—never
• Question 6: Scores are given as: 0—definitely, 1—yes, 2—probably, 3—not sure, 4—no

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Fig. 1: Pre and post-surgery clinical profile of the patient



Fig. 2: Pre and post-surgery clinical profile of the patient

OBSERVATION AND RESULTS

Thirty patients with crooked nasal deformity were in age range group 18 to 55 years. However, 90% of all patients (27/30) were below age 25 years (90%). There were 27 males (90%) and 3 females (10%) (Figs 1 and 2). Twelve out of 30 patients had history of trauma (40%). All 30 patients had crooked nose deformity C-shaped or inverted C-shaped. All patients underwent septorhinoplasty under standard surgical technique, septorhinoplasty, 28 with closed technique and 2 with open technique. There were no intraoperative/postoperative complications. Preoperative and postoperative ROE score was compared (Table 2).

Preoperative mean score was 34.15 ± 15.58 and post-operative mean score was 86.50 ± 7.07 with a mean gain of 52.35. All 30 patients ROE score was less than 85 in preoperative period. In postoperative period, 26/30 (86.67%) patients had gain of score more than 36, i.e. 86.67% patients were satisfied with surgery. Twenty-one out of 30 patients (70%) had postoperative score of more than 85 (excellent). Figures 1 and 2 show preoperative and postoperative photographs of two patients along with assessment of preoperative and postoperative ROE scores.

STATISTICS

Paired t-test (parametric test) was applied to preoperative and postoperative scores. Improvement was found to be statistically significant ($p = 0.001$).

DISCUSSION

Aim of the rhinoplasty surgery is to the restore function and health to the patient, while minimizing morbidity and mortality, while maintaining or improving the esthetic outcome. In the past 20 years, the emphasis on esthetic outcome has moved into the forefront. For facial plastic surgeons as well as patients, the most important factor is the esthetic outcome of the operation. In our study, 27 of the 30 patients were in age group less than 25 years (90.0%) patients and 27 patients were male. Similar, results in terms of young age group and predominant male sex ratio were shown in other study conducted by

Bhatia et al.³ The highest incidence in this age group accords with the fact, that this age group shows more activity in the sports, fights, industry and high speed transportation. In comparison, to our study in terms of sex ratio, Guruprasad et al⁴ reported that out of 689 patients, 75.9% were males and 24.1% were females. A total of 42.5% patients were in the age group of 21 to 30 years. Deka⁵ study of 71 patients showed 57 (76.05%) patients were male. The crooked nose is classified⁵ into the following types of deformities: (1) classical crooked nose involves lateralization of the bony dorsum to one side with the cartilaginous dorsum directing to other

Table 2: Rhinoplast outcome evaluation scores

Sl. no.	Preoperative ROE score	Postoperative ROE score	Gain
1.	16.67	91.67	75
2.	66.67	83.33	16.66
3.	29.17	66.67	37.5
4.	59.16	87.5	28.34
5.	25	79.67	54.67
6.	16.67	87.5	70.83
7.	33.33	91.67	58.34
8.	33.33	83.33	50
9.	16.67	91.67	75
10.	15.6	87.5	71.9
11.	25	91.67	66.67
12.	29.17	79.67	50.5
13.	45.83	95.67	49.84
14.	16.67	66.67	50
15.	29.16	91.67	62.51
16.	16.67	87.5	70.83
17.	45.83	87.5	41.67
18.	33.33	79.67	46.34
19.	16.67	91.67	75
20.	25	91.67	66.67
21.	29.16	87.5	58.34
22.	33.33	79.67	46.34
23.	45.83	91.67	45.84
24.	29.16	87.5	58.34
25.	45.83	91.67	45.84
26.	66.67	91.67	25
27.	45.83	91.67	45.84
28.	33.33	79.67	46.34
29.	66.67	91.67	25
30.	33.33	87.5	54.17

side, (2) lateralization of the dorsum can occur to one side involving both the bony and cartilaginous elements are involved, along with septal deviation and (3) lateralization of dorsum can also occur involving only the cartilaginous dorsum along with deviated nasal septum. In our study, all 30 patients had crooked nose deformity, 27 had type I and 3 had type 2 deformity. In this study, we used ROE questionnaire¹ to assess outcome. Rhinoplasty outcomes evaluation scores a very good idea about patient's satisfaction from cosmetic point of view. Higher score after surgery means good improvement. In our study of 30 patients, mean preoperative score was 34.15 ± 15.58 and mean postoperative score was 86.46 ± 7.07 at end of 6 months follow-up, with increase in mean score of 52.31. In study of Meningaud et al¹ of 58 subjects, average increase in patient satisfaction was really lower (33.42). Alsarraf et al⁶ series of 26 patients used ROE scale to assess impact, it was found that mean preoperative ROE score was 38.8 and mean postoperative ROE score was 83.3. Average increase in patient satisfaction (ROE Score) achieved after surgery was 44.5. In our study gain in our study was better, which can be explained by the hypothesis that all patients were operated by same experienced surgical team, so surgeon bias was removed. Izu et al study² of 56 patients, who underwent rhinoplasty filled ROE scale preoperatively, and then 15-day and 90-day postoperatively and also included 100 volunteers without the need or desire of cosmetic or functional nasal surgery in study. He found that the minimally important difference was 8.67 points (36.12 in score out of 100), so changes

smaller than 9 points in ROE might not be perceived by the patient as an improvement or worsening. In our study 26/30 (86.67%) patients had gain of more than 36 points in ROE scale. Advantage of assessment via ROE scale is that (1) surgeon bias is removed (2) surgeon can understand patients prospective in a better way (3) it is easily reproducible.

CONCLUSION

Rhinoplasty outcomes evaluation scale is a useful subjective tool to assess the impact of deformity on patient. It is easy and reproducible method.

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