

Results Evaluation in Reduction Rhinoplasty

Avaliação de Resultados em Rinoplastia de Redução

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SUMMARY

Introduction: Final results evaluation after rhinoplasty is a not a topic widely studied from the patient's viewpoint.
Objective: Evaluate the satisfaction of the patients submitted to reduction rhinoplasty, from the questionnaire Rhinoplasty Outcomes Evaluation (ROE).
Method: Longitudinal study, retrospective cut type, of the preoperative and postoperative satisfaction. The sample was composed by 28 patients who were submitted to rhinoplasty and answered the ROE questionnaire. Three variables were obtained: satisfaction note that the patient had with his/her image before the surgery; note of satisfaction with the current appearance; the difference of the average satisfaction notes between postoperative and preoperative approaches.
Results: The postoperative note was higher than the preoperative in all patients. We noticed a difference between the average of the postoperative and preoperative of 48.3 ($p < 0.0001$). In the preoperative approach we noticed that 100% of the patients had satisfaction of < 50 . In the postoperative there was a 92.9% migration from classification < 50 to classes: 50 to < 75 considered to be good (25%); ≥ 75 considered to be an excellent outcome (67.9%).
Conclusions: The ROE questionnaire is a helpful tool to show the satisfaction of the patient submitted to reduction rhinoplasty. About 92% of the patients submitted to reduction rhinoplasty consider the postoperative result to be good or excellent.
Keywords: quality of life, results evaluation (health care), rhinoplasty, patient satisfaction.

RESUMO

Introdução: A avaliação do resultado final após rinoplastia é um tema pouco estudado pela visão do paciente.
Objetivo: Avaliar a satisfação dos pacientes submetidos à rinoplastia de redução, a partir do questionário Rhinoplasty Outcomes Evaluation (ROE).
Método: Estudo longitudinal, tipo coorte retrospectivo, da satisfação pré-operatória e pós-operatória. A amostra foi composta por 28 pacientes submetidos à rinoplastia que responderam ao questionário ROE. Foram obtidas três variáveis: nota da satisfação que o paciente tinha com sua imagem antes da cirurgia; nota da satisfação com a atual aparência; e a diferença das médias das notas da satisfação entre pós e pré-operatório.
Resultados: A nota pós-operatória foi superior a pré-operatória em todos os pacientes. Foi observada diferença entre as médias das notas do pós e pré-operatório de 48,3 ($p < 0,0001$). No pré-operatório foi observado que 100% dos pacientes apresentaram satisfação < 50 . No pós-operatório foi observado que 92,9% migraram da classe < 50 para as classes: 50 a < 75 considerado bom (25%); ≥ 75 considerado excelente resultado (67,9%).
Conclusão: O questionário ROE é uma ferramenta útil em demonstrar a satisfação do paciente submetido à rinoplastia de redução. Cerca de 92% dos pacientes submetidos à rinoplastia de redução consideram bom ou excelente resultado no pós-operatório.
Palavras-chave: qualidade de vida, avaliação de resultados (cuidados de saúde), rinoplastia, satisfação do paciente.

INTRODUCTION

The main reasons for which the patients seek the otorhinolaryngologist are the complaints of nasal obstructions, aesthetics or the association of both. Most articles that approach the theme of aesthetic surgery offer discussions on surgical techniques, pathways, complications, sequels and review rates. The evaluation of the final result of the intervention is not a very common research by the viewpoint of the patient and this analysis is critical since the patient's satisfaction is a key factor for the surgical success (1-4).

In the merely aesthetic surgeries the physician must evaluate the reason why the patient seeks the procedure. Many times the reason involves the need to satisfy others, social or professional ambition and the surgeon has a great responsibility to accept or refuse this demand (5).

Several works were prepared aiming to validate a reliable questionnaire to be applied to patients submitted to aesthetic surgery and measure the patient's satisfaction after the surgical procedure (6-11). Some instruments, like questionnaires that evaluate the quality of life and the self-image became a gold standard and are intended to replace the simplistic manner with which the patient was questioned on whether he/she perceived or not a recovery after rhinoplasty (12-13).

The use of a widely accepted questionnaire is very profitable once it standardizes the evaluation and allows the comparison of different techniques, the measurement of positive and negative effects and the identification of possible patients who may not benefit from the surgical procedure (2).

ALSSARRAF et al were the first authors to offer and test an evaluation tool for several facial aesthetic procedures, including rhinoplasty, with reliability, internal consistency and validity of the method (7, 8, 14). The use of this questionnaire is an instrument the surgeon may have available to objectively analyze some qualitative variables that involve the aesthetic surgery such as psychological, social and emotional aspects (7, 8).

The objective of this work is to evaluate the satisfaction of the patients submitted to reduction rhinoplasty, from the questionnaire *Rhinoplasty Outcomes Evaluation* (ROE).

METHOD

53 consecutive patients were identified with jib or

Table 1. Reason and frequency of the patients excluded from the sample.

Reason	N
No contact was possible	17
Wrong telephone	13
No answer	3
Without telephone number in the hospital register	1
Did not show up	8
In spite of the contact and scheduling of the visit	6
They could not appear to the hospital in the data collection period	2
Total	25

rhinomegaly, submitted to reduction rhinoplasty. The surgeries were performed in the Otorhinolaryngology Service of a tertiary hospital of the city of São Paulo in the period from January 2000 through January 2010. The rhinoplasties were made or supervised by the third author.

All patients submitted to reduction rhinoplasty were included with six months to 10 years of postoperative follow up, from 16 years in the female sex and 17 years for the male sex, who agreed with the Free and Clear Authorization Term in the Institution after telephone contact.

The patients who were not possible to contact by telephone and were excluded did not agree with the Free and Clear Authorization Term or did not appear for the interview (Table 1).

We performed longitudinal study, of retrospective cut type, on preoperative and postoperative satisfaction. The patients were invited by telephone to appear at the Institution where the surgery was made to answer to the ROE questionnaire (7, 8). The patients who appeared at the hospital received information concerning the research and agreed to take part in the study through the Free and Clear Authorization Term. The project was evaluated and approved by the Ethics Committee in Research of the Institution (Report no. 20/2010).

The ROE questionnaire was applied twice in the same visit aiming to measure the satisfaction of the patient at the preoperative and postoperative approaches. The preoperative answers were based on the viewing of pictures registered in a standardized manner before the surgical procedure. The postoperative answers were based on the current result of the patient (11, 15).

ALSSARRAF et al tested and validated this instrument (ROE), which, starting with six questions, enables to evaluate three quality of life subjective domains: physical, mental/emotional and social, as described in Graphic 1 (8).

Each question of the questionnaire was answered with marks of a scale from zero to four (zero for the most negative and four for the most positive answer). In order to achieve a final result of the scale the sum of the answers for each question was made and this result was divided by 24 and multiplied by 100, which provided a value ranging from zero to 100 (8). The final result was divided into classes according to the quartile: zero to <25 and 25 to <50 (failure); 50 to <75 (good); and ≥75 (excellent).

After collection of the data three variables were obtained: satisfaction note that the patient had with his/her image before the surgery; note of satisfaction with the current result; the difference of satisfaction notes between postoperative and preoperative approaches. We surveyed data regarding: age; sex and time of postoperative follow up. The data obtained were inserted into electronic worksheets, by using the software Microsoft Excel (Microsoft Corporation).

For statistical analysis of the data, we used: paired t-test ; independent t-test; Mann-Whitney non-parametric test and Kruskal-Wallis test. The significant $p \leq 0.05$ value was considered statistically.

RESULTS

The initial sample of this work was composed by 53 patients, out of whom 28 answered the questionnaire. The

Graphic I. Questionnaire Rhinoplasty Outcomes Evaluation (ROE).

- 1) How much do you like the appearance of your nose?
- 2) How much can you breathe through the nose?
- 3) How much do you think your friends and acquaintances like your nose?
- 4) Do you thing the appearance of your nose limit your professional or social activities?
- 5) How much confident are you that your nose has the best possible appearance?
- 6) Would you like to change the appearance or the function of your nose with surgery?

reason for absence of the other patients are described in Table 1.

The mean age of the 28 patients who took part in the study was of 28.4 years old ± 12.1 corresponding to 21 (75%) of the female sex and seven (25%) of the male sex. All patients were submitted to reduction rhinoplasty from endonasal approach.

The average satisfaction mark of all patients submitted to rhinoplasty in the preoperative approach was of 28 ± 11.2 and in the postoperative it reached 76.3 ± 17.6 (Picture 1). We noticed a difference between the average of the postoperative and preoperative of 48.3 ($p < 0.0001$).

In the preoperative approach we noticed that 100% of the patients had satisfaction of <50. In the postoperative there was a 92.9% migration from classification <50 to classes: 50 to <75 considered to be good (25%); e"75 considered to be an excellent outcome (67.9%). In spite of 7.1% of the patients having obtained a postoperative result <50, the initial condition did not get worse (Table 2). In the postoperative approach, we noticed that 100% of the

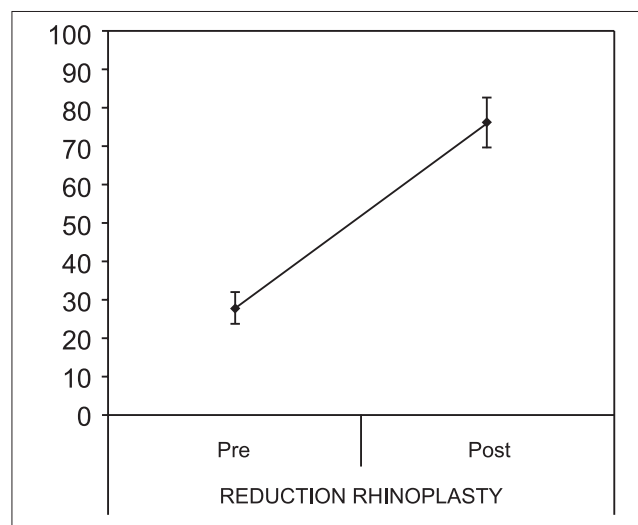


Figure 1. Satisfaction marks averages in the preoperative (Pre) and postoperative (Post) approaches of the patients submitted to reduction rhinoplasty.

Table 2. Frequency of the patients submitted to reduction rhinoplasty according the satisfaction in the preoperative (PRE) and postoperative (POST).

Moment		PRE		Total	
		<25	25 to <50		
POST	25 to <50 (Failure)	N (%)	1 (3,6%)	1 (3,5%)	2 (7,1%)
	50 to <75 (Good result)	N (%)	3 (10,7%)	4 (14,3%)	7 (25,0%)
	≥75 (Excellent result)	N (%)	8 (28,6%)	11 (39,3%)	19 (67,9%)
Total		N (%)	12 (42,9%)	16 (57,1%)	28 (100%)

Table 3. Average of the marks between the preoperative and postoperative approaches of the patients submitted to reduction rhinoplasty according to the age.

Reduction	<30 years	≥30 years	Test Mann-Whitney(p)
Average	40,9	58,3	
Standard Deviation	19,6	13,3	0,015
n	16	12	

patients had an addition of marks between the preoperative and postoperative approaches, that is, in no patient the satisfaction mark in the postoperative was lower than in the preoperative approach.

As regards to the age of the patients, the sample was divided into two classes: <30 years; and ≥30 years. We noticed the age was a factor that influenced the average of the difference of the satisfaction marks between preoperative and postoperative approaches, that is, the patients aged <30 had a lower addition to the satisfaction than the patients aged ≥30 years ($p=0.015$), as described in Table 3.

The mean time of follow up after rhinoplasty was of 70.8 months, which varied from six months to 10 years. The sample was divided into two classes according to the follow up period: 6 to <60 months; and ≥60 months. No statistically significant difference was noticed in the averages of the satisfaction difference between preoperative and postoperative, according to the time of follow up (Table 4).

DISCUSSION

Some factors may influence the satisfaction of the patients submitted to rhinoplasty such as their culture, life experience and especially their level of expectation regarding the final result, which may be realistic or not (11, 13). Therefore, it is essential for the surgeon to understand the complaints of the patient and review the proportions and relationships between the nose and the face through physical exam. The support of standardized photographic documentation is basic for the postoperative planning, taking into account the anatomic factors of each patient (15).

An important aspect that was not evaluated in this study is the psychological impact the aesthetic surgery may offer to the patient. The psychological disorders are not an absolute contraindication for the performance of the aesthetic procedure, especially when suitable psychological support is offered to the patient (16).

Recently, several works and review have been

Table 4. Satisfaction marks difference average between the postoperative and preoperative of the patients submitted to reduction rhinoplasty according to the follow up time.

Reduction	6 to <60 months	≥60 months	Test Mann-Whitney(p)
Average	41,7	50,2	
Standard Deviation	23,3	17,9	0,43
N	6	22	

carried out to elect an instrument able to measure and review the postoperative satisfaction from a patient's viewpoint (2-11). In this study we used a questionnaire prepared and validated by ALSSARRAF et al that is an easily applicable instrument, useful for assessing different types of patients and surgical techniques (6, 8, 11).

In this study we noticed that all 28 patients obtained a recovery from the reduction surgical procedure (Figure 1) with the postoperative mark higher than that of the preoperative. The marks difference average between the postoperative and preoperative approaches was of 48,3 (76.3 in the postoperative approach and 28 in the preoperative approach), higher than the result presented by ALSSARRAF et al of 44.5 (83.3 in the postoperative and 38.8 in the preoperative approach)

Upon analysis of the reasons by which both patients maintained postoperative satisfaction <50 (failure), we noticed that both the aesthetics and the function remained as important complaints after the surgical procedure (Table 2).

The youngest patients have a higher expectation as regards to the final aesthetic result, probably due to the stronger social pressure (acceptance in the affective relationship groups), with difficulty to assimilate self-image changes (9). In this study, we noticed a statistically significant difference ($p=0.015$) between the averages of the satisfaction marks difference between the postoperative and preoperative approach for age groups <30 years and ≥30 years (Table 3).

The final result of the rhinoplasty may be noticed from 12 months of follow up. In this study we noticed the patients who had a longer postoperative follow up (≥60 months) had a mark difference average between the postoperative and preoperative approach similar to the patients operated in the last 60 months (Table 4).

CONCLUSION

The Rhinoplasty Outcomes Evaluation is a helpful

tool to show the satisfaction of the patients submitted to reduction rhinoplasty. About 92% of the patients submitted to reduction rhinoplasty consider the postoperative result to be good or excellent.

BIBLIOGRAPHICAL REFERENCES

1. Ching S, Thoma A, McCabe RE, Antony MM. Measuring Outcomes in Aesthetic Surgery: A Comprehensive Review of the Literature. *Plast Reconstr Surg.* 2003, 111:469-480.
2. Rhee JS, McMullin BT. Measuring outcomes in facial plastic surgery: a decade of progress. *Curr Opin Otolaryngol Head Neck Surg.* 2008, 16:387-93.
3. Rhee JS, McMullin BT. Outcome Measures in Facial Plastic Surgery. Patient-Reported and Clinical Efficacy Measures. *Arch Facial Plast Surg.* 2008, 10:194-207.
4. Kosowski TR, McCarthy C, Reavey PL, Scott AM, Wilkins EG, Cano SJ, Klassen AF, Carr N, Cordeiro PG, Pusic AL. A Systematic Review of Patient-Reported Outcome Measures after Facial Cosmetic Surgery and/or Nonsurgical Facial Rejuvenation. *Plast Reconstr Surg.* 2009, 123:1819-27.
5. Maniglia JV, Ferreira PGF, Maniglia LP, Maniglia CP, Maniglia MP. Avaliação clínica, seleção de pacientes, cuidados pré e pós-operatórios. Em: Maniglia AJ, Maniglia JJ, Maniglia JV. *Rinoplastia - Estética-Funcional-Reconstrutora.* Rio de Janeiro: Revinter; 2002. p. 30-3.
6. Meningaud JP, Lantieri L, Bertrand JC. Rhinoplasty: An Outcome Research. *Plast Reconstr Surg.* 2008, 121:251-7.
7. Alsarraf R. Outcomes Research in Facial Plastic Surgery: A Review and New Directions. *Aesthetic Plast Surg.* 2000, 24:192-7.
8. Alsarraf R, Larrabee WF, Anderson S, Murakami CS, Johnson CMJ. Measuring Cosmetic Facial Plastic Surgery Outcomes. A Pilot Study. *Arch Facial Plast Surg.* 2001, 3:198-201.
9. Litner JA, Rotenberg BW, Dennis M, Adamson PA. Impact of Cosmetic Facial Surgery on Satisfaction with Appearance and Quality of Life. *Arch Facial Plast Surg.* 2008, 10:79-83.
10. Mckiernan DC, Banfield G, Kumar R, Hinton AE. Patient benefit from functional and cosmetic rhinoplasty. *Clin Otolaryngol.* 2001, 26:50-2.
11. Hellings PW, Trenité GJN. Long-Term Patient Satisfaction After Revision Rhinoplasty. *Laryngoscope.* 2007, 117:985-9.
12. McKinney P, Cook JQ. A critical evaluation of 200 rhinoplasties. *Ann Plast Surg.* 1981, 7:357-61.
13. Guyuron B, Bokhar F. Patient Satisfaction Following Rhinoplasty. *Aesthetic Plast Surg.* 1996, 20:153-7.
14. Bergman S, Feldman LS, Barkun JS. Evaluating Surgical Outcomes. *Surg Clin N Am.* 2006, 86:129-49.
15. Sullivan MJ. Rhinoplasty: Planning Photo Documentation and Imaging. *Aesthetic Plast Surg.* 2002, 26 Suppl 1:S7
16. Ercolani M, Baldaro B, Rosse N, Trombini G. Five-Year Follow-up of Cosmetic Rhinoplasty. *J Psychosom Res.* 1999, 47:283-6.