Quality of Life After Septorhinoplasty: The Results of a Tertiary Center

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Abstract

Objective: Septorhinoplasty is globally associated with an improvement in the quality of life. We intend to evaluate the degree of satisfaction of patients undergoing septorhinoplasty at our hospital and the impact of surgery on the quality of life.

Methods: This is a retrospective study, which includes patients who underwent septorhinoplasty in our department between January 2017 and December 2020. We applied to each patient the validated Rhinoplasty Outcome Evaluation questionnaire, culturally adapted and translated into European Portuguese, covering the main aspects that influence patient satisfaction. A higher score on the questionnaire (0 to 100) equates to greater patient satisfaction.

Results: We included 92 patients, 52.2% female and 47.8% male, with a mean age of 37.5 (21.0-43.8) years. We obtained a mean total questionnaire score of 87.5 (75.0-94.8), and in 62% of patients the score was >80. A statistically significant association was found between the patient's increasing age and a clear sustained decrease in the level of satisfaction with the surgical results ($P = .015$), with the lowest levels of satisfaction being recorded after 50 years of age.

Conclusions: Younger age was the only factor with a statistically significant association with higher satisfaction scores, with the most noticeable improvement in the quality of life in patients aged 19-29 years. This result may be associated with the expected aging of the tissues, namely the nasal cartilage skeleton and the skin. Our average total score on the Rhinoplasty Outcome Evaluation questionnaire is in line with the scores obtained in similar recent studies.

Keywords: Nasal obstruction, nose, rhinology, rhinoplasty, septoplasty

INTRODUCTION

Septorhinoplasty is one of the most common surgical procedures performed for both functional and esthetic purposes. The surgical success of this procedure is mainly evaluated using anatomical markers of facial measurements, and most studies on the results of septorhinoplasty focus on the surgical technique, complications, and sequelae and do not evaluate the postoperative result from the patient's point of view. Patient satisfaction is one of the most important determinants of the success or failure of this procedure, irrespective of a technically perfect outcome, since the nose has a central position in the face, with a primordial role in its harmony and is the entrance of the upper airway, with all the consequences that poor nasal breathing can cause, such as obstructive sleep apnea syndrome and its implications, for example, on the cardiovascular health. As such, a septorhinoplasty whose result does not satisfy the patient can have serious psychosocial consequences for the individual, namely with regard to issues such as self-esteem and establishing interpersonal relationships, both in social and in occupational domains (many times leading to the eviction of certain environments and jobs), with a strong impact on the quality of life. In the same way, nasal function also has an impact on the quality of life and a septorhinoplasty should, in addition to the esthetic aspect, act on the functional aspect, leaving the nose fit and optimized for its respiratory function as an integral part of the upper airway. According to the International Consensus on functional and esthetic rhinoplasty, objective measurements of surgery results, evaluating both functional and cosmetic ones, should be routinely used, with questionnaires being suggested for this effect.

Alsarraf created the Rhinoplasty Outcome Evaluation (ROE) questionnaire in 2000, a questionnaire that is easy to apply and interpret, consisting of 6 questions covering the main aspects that influence the satisfaction of patients undergoing septorhinoplasty, encompassing the assessment of the functional and esthetic aspects of the nose. This questionnaire has been translated, culturally adapted, and validated in Portugal since 2015.
We conducted this study to evaluate our results concerning the satisfaction level of our patients after septorhinoplasty and to identify prognostic factors affecting patient satisfaction, in order to improve the selection of candidates for this surgery and to ultimately obtain the best esthetic and functional surgical results.

METHODS

We retrospectively reviewed the medical records of the patients who underwent septorhinoplasty at the Otolaryngology Department of our hospital, in the time period between January 2017 and December 2020, that is, patients with at least 1 year of postoperative time elapsed and at most 4 years since surgery. The surgery was always performed by 1 of 2 otorhinolaryngology specialists dedicated mainly to rhinology and facial plastic surgery and under general anesthesia with orotracheal intubation. This study was carried out after approval by the Ethics Committee of Pedro Hispano Hospital.

We started by applying the ROE questionnaire to each of the patients selected and included in our study. The questionnaire was administered by telephone, after the patients were informed about the purpose of the study and after obtaining their informed consent. A brief description of the questionnaire was made. Each question was read, and the answer hypotheses were provided to the patient, with the registry of each answer given.

The ROE questionnaire consists of 6 questions that evaluate 3 quality-of-life parameters: physical, emotional, and social. The quality of life in each of these domains is evaluated regarding functional and esthetical satisfaction after septorhinoplasty. Each question allows 5 answers, being scored between 0 and 4 points, and the total score of the questionnaire thus varies between 0 and 24 points. However, the so-called final score, for the purpose of evaluating patient satisfaction, is calculated by dividing the total score obtained by 24 and then multiplying it by 100, so that a value between 0 and 100 is obtained. A higher score is equivalent to greater patient satisfaction with the results of the surgery.

For each patient, in addition to the application of the ROE questionnaire and the evaluation of the scores obtained, we analyzed: age (we defined 3 age groups: 18-29, 30-49, and ≥50 years old), gender, year of surgery, surgical approach (open or closed), type of rhinoplasty (primary or secondary), and postoperative complications (with record of recurrence to the hospital, in the time period between January 2017 and December 2020, that is, patients with at least 1 year of postoperative time elapsed and at most 4 years since surgery). The surgery was always performed by 1 of 2 otorhinolaryngology specialists dedicated mainly to rhinology and facial plastic surgery and under general anesthesia with orotracheal intubation. This study was carried out after approval by the Ethics Committee of Pedro Hispano Hospital.

We obtained a median final score of the questionnaire of 87.5 (75.0-94.8). In our study, 87% of patients had a score above 50 and 62% recorded a score more evident in the group ≥50 years old [70.8 (62.5-83.4)].

In this study, 92 patients were included, 48 (52.2%) females and 44 (47.8%) males, aged between 18 and 62 years old with an average age of 37.5 ± 23 years old. We always performed primary rhinoseptoplasties, and when we had revision surgery, a rhinoplasty without septoplasty was always performed (because septoplasty had already been done in the first surgery).

RESULTS

In this study, a total of 87 (94.6%) primary surgeries were performed, and we had a revision surgery rate of 5.4%. We obtained an average time from primary surgery to revision surgery, in the 5 (5.4%) cases in which this was performed, of 30 months. In our study, a total of 51 (55.4%) open rhinoseptoplasties and 41 (44.6%) closed/endorasal procedures were realized.

Regarding postoperative complications, we obtained a complication rate of 7.6%, with the registered complications being minor ones, such as uncontrolled pain with the prescribed analgesia (2 cases), hyperpigmentation patch on the nasal dorsum (1 case), and epistaxis (3 cases), easily controlled with non-invasive measures.

The descriptive statistics concerning the categorical variables analyzed in all patients subjected to septorhinoplasty included in the study are described in Table 1. In its turn, the description of the continuous variables examined in our study is presented in Table 2.

We could verify that the questionnaire is in fact quick to fill, even when it is not self-completed as in this case, taking an average of 3 minutes, and it is easy to understand because there were no doubts during its completion nor was it necessary, in any of the cases, to repeat the reading of the question.

We obtained a median final score of the questionnaire of 87.5 (75.0-94.8). In our study, 87% of patients had a score above 50 and 62% recorded a final score >80.

In this study, the only factor with a statistically significant prognostic impact on patient satisfaction with the postoperative results of septorhinoplasty was age (P = 0.015), with the youngest age group (18-29 years old) being the one with the highest median final score [91.7 (79.2-100.0)], with the satisfaction score decreasing as age increases, this decrease being more evident in the group ≥50 years old [70.8 (62.5-83.4)].

With concern to gender, we did not find differences regarding the degree of patient satisfaction (P = .398), although the median final score of the ROE questionnaire was slightly higher in males [87.5 (79.2-91.7)] than in females [83.3 (59.4-95.8)].

We evaluated patient satisfaction with the surgical results according to the year in which the surgery took place, in order to understand whether the increasing experience of the surgical team would have an effect on the patient perception of the final result. However, we did not find significant differences in the levels of patient satisfaction in the different years evaluate (P = .052).
Regarding surgical approach (open or closed septrhinoplasty), we also did not find any significant statistical differences in terms of patient satisfaction ($P = 0.517$). In the same way, concerning the type of surgery (primary or revision), we did not obtain differences in the postoperative results evaluated by the patients ($P = 0.521$), although no conclusion is possible since we have a much smaller number of secondary surgeries.

Also, all associations between the factors analyzed and the median final ROE score obtained are shown in Table 3.

### Table 3. Statistical Analysis for Comparison Between Patient Satisfaction with Septrhinoplasty Results (ROE Final Score) According to the Variables Analyzed

<table>
<thead>
<tr>
<th>Frequency [n (%)] (n = 92)</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18-29 years old</td>
</tr>
<tr>
<td></td>
<td>30-49 years old</td>
</tr>
<tr>
<td></td>
<td>≥50 years old</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Year of surgery</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td>2019</td>
</tr>
<tr>
<td></td>
<td>2020</td>
</tr>
<tr>
<td>Surgical approach</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td>Closed</td>
</tr>
<tr>
<td>Type of surgery</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
</tr>
<tr>
<td>Concomitant septoplasty</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Postoperative complications</td>
<td>No complications</td>
</tr>
<tr>
<td></td>
<td>Uncontrolled pain</td>
</tr>
<tr>
<td></td>
<td>Hyperpigmentation patch on the nasal dorsum</td>
</tr>
<tr>
<td></td>
<td>Epistaxis</td>
</tr>
</tbody>
</table>

Patient satisfaction post-surgery is quite central to the process of evaluating the quality of care. Although the technical aspects of septrhinoplasty are important, the main factor determining the success of the surgery is, in fact, patient satisfaction. Several recent studies show that patients value more the fulfillment of their esthetic expectations than the improvement of nasal function. However, a global assessment of the impact of surgery on quality of life is still important and, for this, the ROE questionnaire has shown, as in other studies, to be an excellent tool to quantify the surgical outcome in terms of patient satisfaction, evaluating respiratory function and esthetic result, in a simple and fast way.

We applied the ROE questionnaire by telephone, essentially as a matter of practicality, avoiding patient travel to the hospital. The application in this way was uneventful, and according to a study by Izu et al., patients prefer to answer this questionnaire in the form of an interview, in which we read the question to the patient and present possible answers, rather than reading the question on their own and answering it themselves. In the same way, Kotzampasakis et al. also applied the ROE questionnaire by telephone.
The results of the present study show, along with other similar studies, that septorhinoplasty is a procedure with high levels of satisfaction and with a great impact on the quality of life of patients, as we can see from our median satisfaction rate of 87.5 (75.0-94.8), an indicator of excellent levels of satisfaction. According to the literature, a score of at least 50 is the threshold value to consider that there was satisfaction with the surgical result, and a value >80 is considered an excellent score, representative of a very satisfied patient. Thus, 87% of our patients were satisfied with the postoperative result, of which 62% were very satisfied, which should serve as an incentive to maintain our results and continue the practice and investment in the area of esthetic and functional nasal surgery. Our score of 87.5 is similar to the scores reported in some studies, globally varying between 75 and 90.

The only factor with a statistically significant prognostic impact on the satisfaction levels of the patients submitted to septorhinoplasty was age, with higher levels of satisfaction being obtained at younger ages, namely in the age group between 18 and 29 years old. Most studies report that patients aged <30 years have the lowest levels of postoperative satisfaction, what is seen as being associated with higher preoperative expectations in this age groups. Kotzampasakis et al. similarly to our study, also obtained lower satisfaction levels with esthetic results in patients >50 years, which can be interpreted in association with the expected aging of tissues, namely the nasal cartilaginous skeleton, with an important decrease in its rigidity, in particular of the alar cartilages, which together with dislocation of these and the triangular cartilages can lead to ptosis of the tip with an apparent elongation of the pyramid, with the formation or accentuation of an apparent dorsal hump. Cutaneous transformations also lead to a change in the appearance of the nasal pyramid. As the skin becomes thinner, the bony and cartilage structures become more apparent, with edges, angulations, and irregularities more easily perceived through the skin.

Concerning gender, we did not find significant differences in terms of satisfaction with surgical results, as in most similar studies in the literature.

In our study, we wanted to understand whether the patients' level of satisfaction improved over the years, following the increase in the experience of the surgical team. However, there were no differences between the various years evaluated. The literature is controversial on this topic, with even 1 study showing that the degree of satisfaction is inversely proportional to the surgeon's experience.

Most studies, like ours, showed no differences in quality-of-life improvement after surgery according to the surgical approach and type of septorhinoplasty.

The fact that our study is a retrospective study may be a limiting factor, as well as the number of our sample and the fact that only 1 instrument was used to assess postoperative quality of life. As such, we believe that more studies are needed, namely prospective and with pre- and postoperative application of the assessment tools, because the preoperative assessment and the consideration of more variables (namely patient's literacy, previous history of nasal trauma, and stability of surgical outcome over time) in possible future studies will allow us to better select patients who are candidates for septorhinoplasty and also the comparison of pre- and postoperative evaluations permits us to have a better perception of the degree of satisfaction and increase in the quality of life of patients.

CONCLUSION

In our study, younger age was the only factor with a statistically significant association with higher satisfaction scores, with the worst levels of satisfaction being recorded after 50 years of age. In view of these findings, we consider that the management of preoperative expectations is essential, especially explaining to older patients the expected results due to tissue aging and also the dynamism and modification of the nasal pyramid itself over time and, consequently, the probable change in nasal shape achieved after surgery.

We obtained an average total score of 87.5, which is in line with the scores obtained in similar recent studies, and which should serve as an incentive for maintenance and always with a view to improving the work in this area.

Assessment of surgical outcome measured by patient satisfaction or quality of life is very important, especially in esthetical surgery, an area in which there is growing interest in self-reported outcome assessment.

REFERENCES


