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Case Series

Satisfaction in rhinoplasty patients using costal and septal grafts: presentation of cases

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ABSTRACT

Rhinoplasty is one of the most frequently performed procedures in plastic and reconstructive surgery, with both aesthetic and functional implications. The use of cartilaginous grafts has become a fundamental tool to achieve structural stability, nasal definition, and long-term support. However, evidence regarding the association between graft origin and patient-reported aesthetic satisfaction remains limited. A case series of 16 patients who underwent rhinoplasty with cartilaginous graft was conducted, classified according to the origin of the graft as costal (n=9) or septal (n=7). The median preoperative satisfaction score was 3.5 (IQR=6), rising to 7.5 (IQR=2) postoperatively, representing a statistically significant improvement (p=0.0007). Patients with costal graft showed a median postoperative satisfaction of 7 (IQR=5.5), while those with septal graft showed a median of 9 (IQR=2), with no statistically significant difference between groups (p=0.2237). A descriptive tendency toward reduced nasal congestion and obstruction was also observed postoperatively. Rhinoplasty with cartilaginous graft significantly improves patient aesthetic self-perception regardless of graft origin. No significant difference in postoperative satisfaction was found between costal and septal grafts. Future studies with larger samples and homogeneous graft combinations are needed.

Keywords: Rhinoplasty, Graft, Body satisfaction, Personal satisfaction, Nose, Nasal surgical procedures

INTRODUCTION

Rhinoplasty is one of the most commonly performed surgeries, as evidenced by the more than 45,000 procedures performed annually in the United States alone. The procedure is performed for functional and aesthetic reasons, and in many cases, both functional and aesthetic improvements are required.[1]

However, due to the nose's location, rhinoplasty can significantly impact a patient's self-perception, as it not only improves nasal function but also enhances satisfaction with the nose's appearance and shape.[2]

To achieve the desired outcome of rhinoplasty, cartilage grafts are frequently used, providing support, definition, and stability to the nose. These are primarily autologous cartilage (obtained from the nasal septum, auricular concha, or costal cartilage), although allografts or synthetic materials may also be used.[3] While the selection of the graft depends on the patient's characteristics, it also largely determines the aesthetic and functional outcomes, which translate into structural stability, resorption rate, and patient satisfaction.[4]

Despite current knowledge regarding grafts in rhinoplasty, patients still report lower satisfaction compared to other facial or plastic surgery procedures, particularly regarding their self-image. For this reason, multiple tools have been developed to assess changes in quality of life following rhinoplasty, evaluating patients' perception of the results; however, the impact of the type of graft on satisfaction or quality of life remains unclear.[2]

Therefore, the objective of this study was to analyze the association between the source of the graft used in rhinoplasty and patient satisfaction following rhinoplasty during the postoperative period and after the inflammatory process had subsided.

CASE SERIES

This study included 16 case studies, with a gender distribution dominated by women, who accounted for 81.3% (n=13), and men, who accounted for 18.8% (n=3), with a median age of 29.5 years and an interquartile range (IQR) of 12; the other characteristics of the study population are shown in Table 1.

Table 1: Clinical characteristics of the patients studied.

Variables (n=17)		Frequency (%)
Previous rhinoplasties	0	13 (81.3)
	1	2 (12.5)
	2	1 (6.3)
Allergies		7 (43.8)
Comorbidities	No	11 (68.8)
	Glaucoma	1 (6.3)
	Obesity	1 (6.3)
	Intestinal polyps	1 (6.3)
	Insulin resistance	1 (6.3)
	Polycystic ovary syndrome	1 (6.3)

In addition, a trend toward a reduction in symptoms of nasal congestion and obstruction was observed in the postoperative period, with the disappearance of cases classified as "quite severe" and an increase in the proportion of patients without respiratory problems; however, statistical analysis was not feasible given the sample size.

Table 2: Types of grafts used.

Graft type	Frequency (%)
Extensor septal	16 (100)
Spreader graft	13 (81.25)
Radix graft	3 (18.75)
Shield graft	1 (6.25)
Peck graft	2 (12.5)
Batten graft	1 (6.25)
Cartilago machacado	2 (12.5)

Regarding the postoperative evaluation, the time elapsed between surgery and the postoperative satisfaction assessment had a median of 7.5 months with an IQR of 9. The types of grafts used are presented in Table 2. Regarding the source of the graft, in 9 cases (56.3%) it was from costal cartilage, and the rest were septal grafts.

Regarding osteotomies, 100% were low-to-low; regarding the approach, 12 (75%) were internal or endonasal and 4 (25%) were external or percutaneous.

When evaluating the type of graft used in the study population, a surgical variation was identified, as shown in Table 3.

Table 3: Combinations of grafts used.

Graft type	Frequency (%)
Crushed cartilage + spreader + extender	1 (6.3)
Extender	3 (18.8)
Radix + spreader + extender	1 (6.3)
Radix + peck + crushed cartilage + spreader + extender	2 (12.5)
Shield + batten + extender	1 (6.3)
Spreader + extender	8 (50)

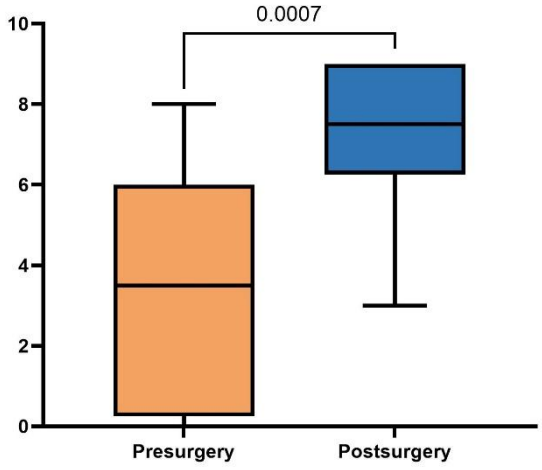

Figure 1: Patient satisfaction with the nose before and after plastic surgery with a graft.

When evaluating patient satisfaction with the appearance of their nose, a quantitative scale was applied, where a higher score indicated greater satisfaction; the preoperative median was 3.5 (IQR=6), and in the postoperative period, the median was 7.5 (IQR=2). A nonparametric Wilcoxon test was used to compare paired data, showing a significant improvement in satisfaction with the nose following aesthetic rhinoplasty (p=0.0007) (Figure 1).

A comparison was also performed regarding postoperative self-satisfaction based on the graft source used, where patients with costal grafts had a median of 7 and an IQR of 5.5, while patients with septal grafts had a median of 9 and an IQR of 2. The Mann-Whitney test revealed no significant difference in self-satisfaction (p=0.2237) (Figure 2).

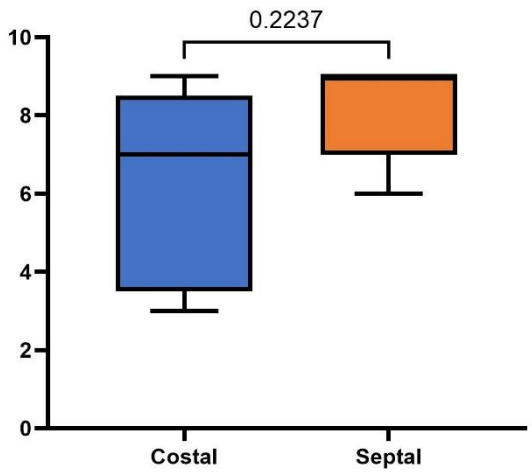

Figure 2: Comparison of postoperative patient satisfaction between the use of rib and septal grafts.

DISCUSSION

The aim of this study was to analyse the association between the source of the graft used in rhinoplasty and patient satisfaction following the procedure, once the inflammatory process had subsided. A case series study was conducted on individuals over the age of 18, including an assessment of patients' self-perception.

The findings of this study are consistent with those reported in the literature regarding the positive impact of rhinoplasty on patients' aesthetic self-perception. Improvements in self-perception and satisfaction can double during the postoperative period, and this improvement is sustained 12 months after surgery and, in some cases, continues to improve over time.[5,6] In this regard, the results of the present study with a median self-satisfaction score that rose from 3.5 to 7.5 are consistent with the improvements previously reported.

Beyond the aesthetic component, rhinoplasty is recognized as a procedure with a dual impact. The functional change achieved by rhinoplasty can negatively affect quality of life, making the need to simultaneously improve function and aesthetics increasingly important. Longitudinal studies have shown that rhinoplasty significantly improves both nasal obstruction and satisfaction with appearance, with a reduction in obstructive symptoms and an increase in patient satisfaction from baseline through the first postoperative year.[7-9]

Regarding the source of the graft, the available evidence suggests that selection should be based on an individualized approach, taking into account both the patient's characteristics and the risks inherent in each type of graft material. This therapeutic individualization was a predominant feature of the study sample, where six distinct graft combinations were identified; however, this implies that a larger population is required to compare the impact of therapeutic combinations on postoperative self-perception.

When grouping cases according to the origin of the material rib versus septal no statistically significant differences were found in postoperative satisfaction, suggesting that the origin of the graft does not affect the aesthetic outcome or result in a difference perceived by the patient. This observation is consistent with previous reports comparing septal grafts to costal grafts, where although the costal graft provides greater structural projection, it also carries greater risks, without this necessarily translating into greater patient satisfaction.[10]

Among the study's limitations are the small sample size and the variable duration of postoperative follow-up. Future studies with larger samples, homogeneous groups based on graft type and combination, and standardized follow-up periods will allow for a deeper understanding of the surgical factors that determine patient satisfaction. Although it is undeniable that rhinoplasty with grafting, as in the cases studied, leads to an improvement in self-perception and, consequently, in quality of life.[11]

CONCLUSION

In conclusion, the results of this study suggest that rhinoplasty with cartilage grafts leads to a significant improvement in patients' aesthetic self-perception, regardless of the source of the material used. However, these findings should be interpreted with caution given the limited sample size and the heterogeneity in the combinations of grafts used, which prevented the impact of each type of graft from being evaluated in isolation. Future studies with larger samples and homogeneous groups in terms of graft type and combination will allow for a deeper understanding of the graft-related factors that determine patient satisfaction following rhinoplasty.

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