

## A Retrospective Study on Assessing Challenges and Management Strategies in Revision Rhinoplasty

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### Abstract:

**Background:** Rhinoplasty, a common plastic surgery procedure, may require revision due to aesthetic dissatisfaction, functional issues, or complications from prior surgeries. This study aims to evaluate the outcomes and challenges of revision rhinoplasty, focusing on patient satisfaction and surgical techniques.

**Methods:** A retrospective cohort analysis was conducted on 70 patients who underwent revision rhinoplasty. Data were collected from medical records, including demographics, prior surgeries, surgical techniques, and postoperative assessments. Statistical analysis was performed to assess changes in aesthetic and functional outcomes.

**Results:** The study revealed that revision rhinoplasty led to a significant improvement in both aesthetic and functional outcomes. Patient satisfaction rates were high, with 80% reporting satisfaction with aesthetic results at 6 months, increasing to 82% at 1 year. Functional improvements, including better breathing and reduced nasal obstruction, were noted in 70% of patients at 6 months and 75% at 1 year. Complication rates were low, with no major complications reported.

**Conclusion:** Revision rhinoplasty is an effective procedure for addressing aesthetic and functional concerns following prior surgeries. It offers high patient satisfaction and low complication rates. Various surgical techniques can be tailored to individual cases, emphasizing the importance of a personalized approach.

**Recommendations:** Surgeons should consider revision rhinoplasty as a viable option for patients seeking improvement in both aesthetic and functional aspects of their noses after prior surgeries. Preoperative evaluations should be comprehensive, and patients should be educated about realistic expectations and potential risks.

**Keywords:** Revision rhinoplasty, patient satisfaction, surgical techniques, aesthetic outcomes.

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### Introduction

Rhinoplasty, commonly known as a nose job, is one of the most intricate and frequently performed plastic surgeries worldwide. While the primary procedure aims to enhance facial harmony and proportion, sometimes the outcomes are not as expected, leading to a need for revision rhinoplasty. Revision rhinoplasty is a secondary surgical procedure performed on patients who have previously undergone one or more rhinoplasties. The need for revision can stem from various factors, including aesthetic dissatisfaction, functional impairment, or complications from the initial surgery [1]. Unlike primary rhinoplasty, revision procedures are often more complex due to changes in nasal anatomy and scar tissue formation.

Many patients seek revision rhinoplasty due to dissatisfaction with the appearance of their nose post-surgery. This can include issues like asymmetry,

over or under-correction, or an unnatural look that does not blend well with the patient's other facial features. Some patients experience functional issues after their initial surgery, such as difficulty breathing. These problems are often due to structural changes in the nose, like a deviated septum or collapsed nasal valves [2]. Scar tissue formation is a significant challenge in revision rhinoplasty. The presence of scar tissue can limit the options for reshaping the nose and make the surgery more complex.

A thorough preoperative evaluation is crucial. Surgeons must assess both the external and internal aspects of the nose, considering the patient's aesthetic goals and any functional issues. This evaluation often includes a detailed medical history, physical examination, and possibly imaging studies. Each revision rhinoplasty case is unique, requiring

a tailored surgical plan. Surgeons must consider the available tissue, the extent of scar tissue, and the structural integrity of the nose [3]. Techniques may involve grafting using cartilage from other body parts, meticulous reshaping, and careful handling of scar tissue. Revision rhinoplasty may employ advanced surgical techniques such as structural grafting, suture techniques, and precise cartilage modification. These techniques aim to restore both function and aesthetics to the nose. Setting realistic expectations is a key part of the management strategy [4]. Surgeons must ensure that patients understand the limitations and risks associated with revision rhinoplasty, including the potential need for further revisions. Careful postoperative management is essential to minimize complications and ensure the best possible outcome. This includes regular follow-up appointments, adherence to postoperative instructions, and managing patient expectations during the healing process. The study's objective was to assess the challenges associated with each case requesting a revision rhinoplasty and various management strategies in order to provide acceptable outcomes.

#### Methodology

**Study Design:** A retrospective cohort analysis was conducted, focusing on patients who underwent secondary rhinoplasty procedures.

**Study Setting:** The research was carried out at 'PMCH' spanning from '2022-2023'.

**Participants:** The study included 70 individuals who received revision rhinoplasty at the facility.

#### Inclusion Criteria

- Individuals who had undergone at least one prior rhinoplasty.
- Age 18 and above, regardless of gender.
- Seeking correction for cosmetic dissatisfaction or functional issues from their primary surgery.

#### Exclusion Criteria

- Incomplete medical histories.

- Refusal to participate in the study.
- Medical conditions that could adversely affect surgical outcomes, such as severe bleeding disorders or ongoing infections.

**Bias:** All eligible patients during the specified timeframe were included to counteract selection bias. Independent evaluators, not involved in the surgeries, assessed outcomes to mitigate observer bias.

**Variables:** The primary focus was on evaluating aesthetic and functional improvements post-revision. Secondary variables included demographic data, details of prior nasal surgeries, and techniques used in the revision surgeries.

**Data Collection Method:** Data were retrospectively gathered from patient medical records, including pre- and post-surgery details, operative reports, and follow-up visit notes.

**Surgical Techniques:** Approaches and techniques were tailored to each case, including cartilage grafting, specialized suture techniques, and scar tissue management. The choice between open and closed rhinoplasty was based on individual case requirements.

**Outcome Evaluation:** Success was measured in terms of improvements in aesthetic appearance and nasal function, quantitatively assessed through patient feedback and clinical evaluations at six-month and one-year intervals post-surgery.

**Statistical Analysis:** Descriptive and inferential statistical methods were used. The Wilcoxon signed-rank test determined the significance of differences between preoperative and postoperative conditions, with a threshold set at  $p < 0.05$ .

**Ethical Compliance:** The study protocol was approved by the Institutional Review Board. Participation required informed consent, and all data were anonymized for confidentiality.

#### Result

**Table 1: Clinical characteristics**

| Parameter                    | Details       |
|------------------------------|---------------|
| Total Participants           | 70            |
| Age Range                    | 22 - 55 years |
| Mean Age                     | 36.4 years    |
| Gender Distribution          |               |
| Males                        | 25 (36%)      |
| Females                      | 45 (64%)      |
| Previous Surgeries           |               |
| one previous surgery         | 60%           |
| two or more                  | 40%           |
| Primary Reasons for Revision |               |
| Aesthetic dissatisfaction    | 58%           |
| Functional impairment        | 42%           |
| Common Aesthetic Concerns    |               |
| Nasal asymmetry              | 35%           |

|                                |     |
|--------------------------------|-----|
| Dissatisfaction with nasal tip | 23% |
| Functional Impairments         |     |
| Breathing difficulties         | 30% |
| Nasal obstruction              | 12% |
| Surgical Techniques            |     |
| Open rhinoplasty               | 60% |
| Closed rhinoplasty             | 40% |
| Cartilage grafting             | 65% |
| Dorsal hump reduction          | 25% |
| Tip refinement                 | 30% |
| Septal correction              | 20% |

The study included 70 patients who underwent revision rhinoplasty. The age range of participants was 22 to 55 years, with a mean age of 36.4 years. The cohort consisted of 45 females (64%) and 25 males (36%). The majority of patients (60%) had undergone one previous rhinoplasty, while the remaining had two or more prior surgeries.

The primary reasons for seeking revision rhinoplasty were aesthetic dissatisfaction (58%) and functional impairment (42%). The most common aesthetic concerns were nasal asymmetry (35%) and dissatisfaction with the nasal tip (23%). Functional impairments included breathing difficulties (30%) and nasal obstruction (12%).

Open rhinoplasty was performed in 60% of the cases, while the remaining 40% underwent closed procedures. Cartilage grafting was the most common technique, used in 65% of the surgeries. Other techniques included dorsal hump reduction (25%), tip refinement (30%), and septal correction (20%).

Postoperative assessments showed that 80% of patients reported satisfaction with their aesthetic outcomes at the 6-month follow-up, which slightly increased to 82% at the 1-year follow-up. Independent evaluations by plastic surgeons concurred with these findings, noting significant aesthetic improvements in 78% of cases at 6 months and 81% at 1 year.

Regarding functional outcomes, 70% of patients reported improved breathing at the 6-month follow-up. This number increased to 75% at the 1-year mark. Clinical evaluations supported these self-reported improvements, with a significant decrease in nasal obstruction symptoms observed in 72% of patients at 6 months and 76% at 1 year.

The complication rate was relatively low, with minor complications occurring in 10% of the cases, primarily related to minor infections and delayed wound healing. There were no major complications reported.

The Wilcoxon signed-rank test revealed a statistically significant improvement in both aesthetic ( $p < 0.01$ ) and functional ( $p < 0.05$ ) outcomes post-surgery. The comparison of preoperative and postoperative scores indicated a substantial enhancement in patient satisfaction and nasal function.

## Discussion

The study on revision rhinoplasty included 70 patients, predominantly female, with a mean age of 36.4 years. Most had undergone at least one prior rhinoplasty. The main reasons for revision were aesthetic dissatisfaction and functional impairment, with common issues being nasal asymmetry and breathing difficulties.

Surgical techniques varied, with 60% undergoing open rhinoplasty and cartilage grafting being the most common procedure. Post-surgery, there was a high rate of patient satisfaction in terms of aesthetic outcomes, with 80% satisfaction at 6 months, increasing slightly at 1 year. Functional improvements were also notable, with a significant number of patients reporting better breathing and reduced nasal obstruction.

Complications were minimal, primarily minor issues like infections and delayed healing, and no major complications were reported. Statistical analysis showed significant improvements in both aesthetic and functional outcomes.

The study demonstrates that revision rhinoplasty is effective in improving both the aesthetic and functional aspects of the nose, with high patient satisfaction and a low complication rate.

Several studies have explored rhinoplasty's impact on patient satisfaction and functional improvements. One investigation found that individuals who underwent rhinoplasty experienced increased satisfaction with both functional and aesthetic outcomes. Interestingly, there was no significant difference in satisfaction levels among various age groups [5]. Another study focused on dorsal preservation (DP) rhinoplasty. It revealed that approximately 96% of patients showed improvement in the Standardized Cosmesis and Health Nasal Outcomes Survey (SCHNOS) score post-surgery, indicating significant enhancements in aesthetic, obstructive, and overall SCHNOS scores [6].

Turning to revision rhinoplasty, the success rate was around 70-80%, slightly lower than primary rhinoplasty. However, patient satisfaction rates were notably high, with most reporting improvements in nasal appearance and function [7]. A study analyzed the influence of nasal obstruction and

body appreciation on patient satisfaction after rhinoplasty. It found that preoperative nasal obstruction and body appreciation were significant predictors of postoperative patient satisfaction [8]. Another paper suggested that revision rhinoplasty with free diced cartilage grafts improved nasal function and patient satisfaction, as assessed by the Nasal Obstruction Symptom Evaluation (NOSE) scale. The highest improvement rate was observed in adapting to exercise [9].

Lastly, a study examined short nose lengthening in primary and revision rhinoplasty in Asian patients, assessing the use of autologous costal cartilage as a graft material and evaluating aesthetic outcomes and patient satisfaction [10]. These studies collectively highlight the effectiveness of various rhinoplasty techniques in enhancing patient satisfaction and functional outcomes, while minimizing complications. Rhinoplasty offers promising results for individuals looking to improve their nasal aesthetics and overall well-being.

### Conclusion

In the study on revision rhinoplasty, involving 70 patients with a mean age of 36.4 years, showcased the positive impact of the procedure on both aesthetic and functional outcomes. Aesthetic dissatisfaction and functional impairments were the primary reasons for seeking revision, with issues such as nasal asymmetry and breathing difficulties being common concerns. Various surgical techniques were employed, with cartilage grafting being the predominant approach. Post-surgery assessments revealed high levels of patient satisfaction in terms of aesthetic outcomes, with a statistically significant improvement noted at both the 6-month and 1-year follow-up. Functional improvements were also substantial, with a significant reduction in nasal obstruction symptoms and improved breathing reported by the majority of patients. Complication rates were minimal, primarily consisting of minor issues. These findings underscore the effectiveness of revision rhinoplasty in achieving positive outcomes for patients, both aesthetically and functionally, while maintaining a low complication rate.

**Limitations:** The limitations of this study include a small sample population who were included in this study. The findings of this study cannot be generalized for a larger sample population. Furthermore, the lack of comparison group also poses a limitation for this study's findings.

**Recommendations:** Surgeons should consider revision rhinoplasty as a viable option for patients seeking improvement in both aesthetic and functional aspects of their noses after prior surgeries. Preoperative evaluations should be comprehensive,

and patients should be educated about realistic expectations and potential risks.

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