

Case Report

Single-stage reconstruction of rhinophyma: a case report

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ABSTRACT

Rhinophyma, an advanced form of rosacea, is characterized by progressive nasal enlargement leading to significant cosmetic and functional impairments. This case report details the management of a 54-year-old male presenting with a 10-year history of nasal hypertrophy consistent with rhinophyma. The patient had surgery in steps that included using a flap from his forehead to rebuild the shape of his nose. Postoperative care included targeted antibiotic therapy and meticulous wound management. Over a nine-month follow-up period, the patient's recovery was satisfactory, with significant aesthetic and functional improvements. This case demonstrates the effectiveness of a systematic surgical strategy in treating advanced rhinophyma.

Keywords: Rhinophyma, Forehead flap, Nasal reconstruction, Surgical management

INTRODUCTION

Rhinophyma is a rare, progressive, and disfiguring dermatological condition characterized by hypertrophy of the sebaceous glands and connective tissue of the nose.¹ It is considered the most advanced stage of rosacea and primarily affects middle-aged to elderly men. The condition presents as a bulbous, lobulated nasal deformity with erythema, telangiectasia, and a thickened, nodular surface.² While its exact pathogenesis remains unclear, factors such as chronic inflammation, sebaceous gland hyperplasia, and vascular abnormalities are believed to contribute to its development.³ Rhinophyma causes significant cosmetic disfigurement and can lead to functional impairments, including nasal obstruction. Early diagnosis and appropriate management are crucial in preventing further progression. While medical therapy may help in the early stages, surgical interventions such as laser therapy, electrosurgery, and dermabrasion remain the mainstay of treatment.⁴ In severe cases requiring extensive tissue removal, reconstructive procedures such as a forehead flap can provide excellent functional and aesthetic outcomes.⁵ This case report highlights a rare presentation of rhinophyma, emphasizing its clinical

features, diagnostic approach, and successful reconstruction using a forehead flap.⁶

CASE REPORT

A 54-year-old male patient presented to the ENT department with a history of progressive nasal enlargement over the past 10 to 12 years. He was a known case of depression and was on regular medication. The patient reported increasing nasal disfigurement consistent with rhinophyma, which led him to seek medical attention. On consultation, surgical excision was advised, and he was admitted for further Treatment. There was no history of hypertension, diabetes mellitus, previous surgeries, or drug allergies.

The patient was afebrile on general examination with a pulse rate of 90 beats per minute, blood pressure of 140/80 mmHg, and SpO₂ of 98% on room air. Systemic examination revealed a clear chest bilaterally on auscultation, a soft and non-tender abdomen, and a conscious and oriented mental state with no neurological deficits. The patient was already on psychiatric medications, including sodium valproate 200 mg (1-0-1), trihexyphenidyl hydrochloride 2 mg (1-0-0),

fluoxetine (1-0-0), anxiopose 2 mg (0-0-1), and risperidone (Manoris 2) (0-0-2½). Laboratory investigations showed a random blood sugar of 121 mg/dl, and the COVID-19 antigen test was negative. On clinical examination, the patient had a large, lobulated, and erythematous mass affecting the nose. The growth was nodular with visible sebaceous hyperplasia. There was visible distortion of the nasal architecture and external nasal valves, with the underlying cartilaginous support softening. Airway compromise was evident, particularly during supine positioning.

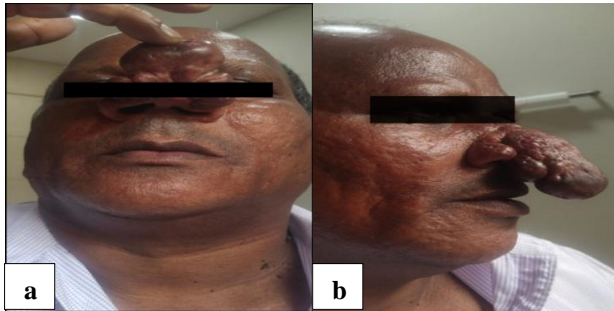


Figure 1 (a and b): Pre-operative images.

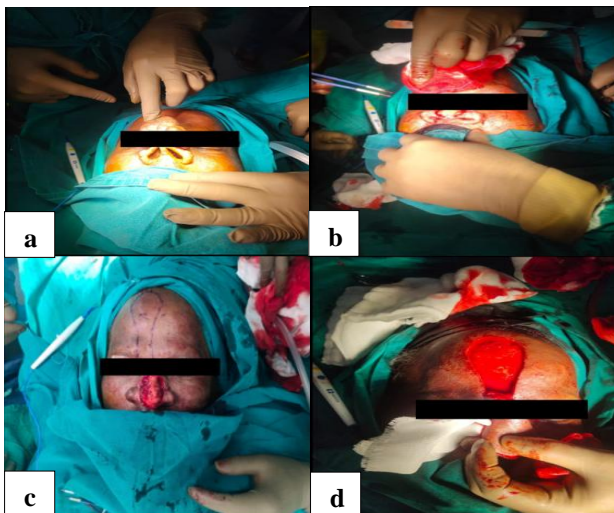


Figure 2 (a-d): Peri-operative images.

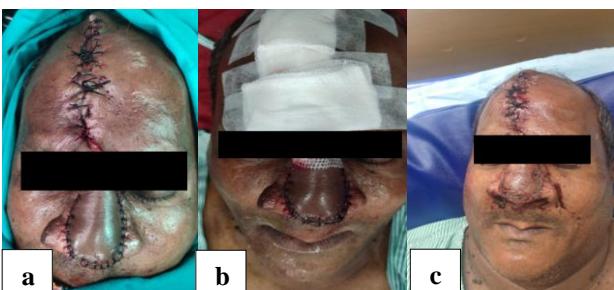


Figure 3 (a-c): Post-operative images.

Management involved a two-stage reconstructive approach due to the significant mass effect from the lesion, which had caused softening and distortion of the nasal

cartilage, particularly in the alar region, posing a high risk of postoperative alar collapse. In the first stage, a paramedian forehead flap was harvested and transposed to the nasal wound bed to provide robust soft tissue coverage, ensuring vascular integration and adequate healing of the grafted site.

Following the initial stage of surgical management, the patient was prescribed a postoperative treatment that included tablet Augmentin Duo 625 mg twice daily for 5 days, tablet Vibact twice daily for 5 days, tablet Enzoflam twice daily for 3 days, and tablet Trental 400 mg twice daily for 5 days. The patient was advised to maintain strict wound care and to take complete rest to promote timely healing. The patient was scheduled for a regular follow-up for nine months to assess the integration of the graft and the viability of the paramedian forehead flap. The patient followed up after a month, and the pedicle was excised, considering the aesthetic aspect. Thereafter, the patient was followed up at 3 and 6 months. The wound healed well without any evidence of infection or complications, and the patient showed steady recovery, restoring the near-normal external contour of the nose.

This case demonstrates the successful management of advanced rhinophyma with significant nasal disfigurement. The grafting to bolster compromised nasal structures with a paramedian forehead flap for soft tissue coverage resulted in functional and aesthetic restoration.



Figure 4 (a-c): Follow-up images.

DISCUSSION

On a comparative analysis of similar case reports and surgical reviews, the study by Tambe et al and Zhang et al presented cases involving auricular cartilage grafts with forehead flaps.^{7,8} Our approach used a two-stage reconstruction instead of a three-stage process, with strategic timing to minimize complications and optimize healing. In these cases, we addressed both structural reinforcement and soft tissue coverage, but the decision to stage the inset of the forehead flap after vascular integration demonstrates a tailored approach to ensure flap viability. In contrast, reports analyzed by Lazzeri et al and Arikian et al focused on excisional management without reconstruction, prioritizing the removal of obstructive rhinophymatous tissue.^{9,10} These cases, while effective in restoring airway patency or appearance, lacked the comprehensive reconstructive plan evident in our case.

Our patient had significant airway compromise and structural weakening, particularly in the alar region, necessitating preventive reinforcement to avoid alar collapse. This proactive approach differs from simpler excisional techniques, which might not be sufficient in advanced cases with nasal valve collapse.

Furthermore, our patient's psychiatric background and long-standing history of untreated rhinophyma (10–12 years) add a psychosocial dimension not elaborated in

previous reports. The case required not only surgical intervention but also coordinated care involving psychiatry and anesthesiology, especially considering the patient's ongoing psychiatric medications. The case also underscores the importance of individualized, stage-wise planning, balancing aesthetic, functional, and psychological outcomes, reinforcing comprehensive multidisciplinary management's relevance in severe rhinophyma.

Table 1: Literature.

Authors	Age, gender	Patient profile	Clinical features	Surgical management	Reconstruction method	Comparison with our case
Tambe et al⁷	67 years, male	Severe rhinophyma	Nasal obstruction, cosmetic deformity	Shave excision	Three-stage forehead flap with auricular cartilage graft	Similar technique and graft use. Our case was younger (54 years) and managed in two stages. Both cases addressed similar functional and aesthetic goals.
Menick et al¹¹	N/A	Review article	N/A	N/A	A forehead flap was discussed as the gold standard	Supports our flap choice. Highlights forehead flap versatility in large nasal defects like ours.
Arikan et al¹⁰	65 years, male	Giant rhinophyma	Severe disfigurement, social withdrawal	Sharp dissection + electrosurgery	None reported	No cartilage/flap was used. Our approach is more complex and tailored to airway compromise and structural instability.
Vural et al¹²	72 years, male	Massive rhinophyma	Marked nasal obstruction	Shaw scalpel excision	None reported	Simpler method focusing on obstruction. Our case involved both airway and aesthetic reconstruction with staged repair.
Lazzeri et al⁹	N/A	Systematic review	N/A	Various techniques	Comparison of outcomes for flaps/grafts	Endorses cartilage support + flap use in severe deformity, aligning with our strategy.
Zhang et al⁸	56 years, male	Nasal reconstruction on post-excision	Complex nasal defect	Surgical excision	Auricular cartilage + full-thickness graft + local flap	Similar age group and use of cartilage. Our case used a paramedian forehead flap for better volume/coverage.
Our study	54 years	Psychiatric history, nasal enlargement over 10–12 years	Lobulated, nodular mass with sebaceous hyperplasia, distorted alar architecture, and airway compromise	Surgical excision	Two-stage: paramedian forehead flap	Unique for functional airway impact, structural collapse risk, and psychiatric comorbidity. Comprehensive staged repair planned.

CONCLUSION

This case demonstrates the successful management of advanced rhinophyma using a phased surgical strategy that included paramedian forehead flap restoration. The

operation not only restored nose form and function, but it also relieved the patient's airway obstruction.

The positive outcome emphasises the need for individualised surgical planning and intensive postoperative care in treating difficult rhinophyma.

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