Medical Scope Journal 2026;8(1):117-121
DOI: https://doi.org/10.35790/msj.v8i1.62805
URL Homepage: https://ejournal.unsrat.ac.id/index.php/msj

Reconstruction of Nasal Defect Caused by Rhinophyma with Excision and Full Thickness Skin Graft: A Case Report

Mendy J. Hatibie,[1] Marselus A. Merung,[2] Priscillia Kalitouw,[3] Stevy Suoth,[1] Toby H. Wiranegara[4]

[1]Division of Reconstructive & Aesthetic Plastic Surgery, Department of Surgery, Prof. Dr. R. D. Kandou Hospital, Manado, Indonesia
[2]Division of Oncology, Department of Surgery, Prof. Dr. R. D. Kandou Hospital, Manado, Indonesia
[3]Manembo-nembo Hospital, Bitung, Indonesia
[4]Department of Surgery, Faculty of Medicine, Universitas Sam Ratulangi, Manado, Indonesia
Email: mendy.hatibie@unsrat.ac.id; Toby_hadinata@yahoo.com
Received: July 13, 2025; Accepted: August 11, 2025; Published online: August 20, 2025

Abstract: Rhinophyma is a benign hypertrophic thickening and edema of the nasal pyramid skin caused by the growth of sebaceous glands, underlying connective tissue, and blood vessels. It is a fairly uncommon nasal disorder, affecting the nasal soft tissues and leading to nasal architecture disturbance, airway obstruction, and nasal aesthetic unit deformity. In cases of severe rhinophyma, surgical management is the first line of treatment, and full thickness skin graft (FTSG) is an additional option. This paper reports a nasal reconstruction with excision of rhinophyma, followed by FTSG as a defect reconstruction in Manado. A 53-year-old man complained about breathing, feeding, and nasal deformity problems for the last three years. About 25 years ago, the patient initially noticed a slowly thickening of the nose skin. Patient works for the army and gets a lot of sun exposure. Its bulk at presentation obstructed the nares (stage IV of rosacea) and insulted the appearance. The patient underwent surgical excision with a knife to shave off the aberrant tissue, with electrocauterization of the bleeding spots, followed by a FTSG from the left retroauricular as a donor site to cover the defect with good result. The diagnosis of rhinophyma was validated by histological analysis of the specimens. In conclusion, rhinophyma representing stage IV of rosacea, gives the nose and the rest of the face an unsightly appearance. It can be effectively treated with surgical excision and FTSG. Postoperative follow-up and supervision are necessary to ensure the optimal healing outcomes and that the patient is more confident with the result in concerns with functionality as well as appearance.
Keywords: rhinophyma; nasal defect reconstruction; full-thickness skin graft

INTRODUCTION

Rhinophyma is a benign hypertrophic thickening with edema of the nasal pyramid skin,[1] characterized by a large, bulbous, and erythematous-appearing nose,[2] due to the proliferation of sebaceous glands, underlying connective tissue, and blood vessels. Often associated to an advanced stage of rosacea, affecting the nasal soft tissues and resulting in disruption of the nasal architecture, airway obstruction, and disfigurement of the nasal aesthetic units.[3–7]

Rhinophyma is a very rare nasal disorder among African American populations and in Asia. The prevalence of rosacea is 5.46% with an estimated range between 0.092% and 2.41% per a 2018 meta- analysis. Women have acne rosacea 2–3 times more than men, however rhinophyma occurs almost exclusively in men primarily occurs in 40-70 years old,[1,2,6] with a male-female ratio of 12:1, while it's slightly present in black race.[4]

The overgrowth of sebaceous glands in nasal tissue and its etiology unclear. Without treatment, rhinophyma can be progressive and cause concern both with respect to function and cosmesis.[8] Rhinophyma may cause significant psycho-social morbidity, and treatment may improve patient self-confidence and psycho-logical well-being. Patients may be afraid to go out in public for fear of social stigmatization, as rhinophyma has erroneously been associated with alcoholism.[6]

Several treatment options are available such as surgery, dermabrasion, and laser therapy.[2] Surgical management in severe cases is the first line treatment for rhinophyma,[1] to debulk rhinophymatous hypertrophy through full-thickness excision of only a portion of the distorted surface and full thickness skin graft is another option for large rhinophymas.[1,9] A multi-specialty method to include dermatologists, plastic surgeons, ENT surgeons, and specialty trained nurses is necessary for successful management of these patients.[3] The surgery was performed by a board-certified plastic surgeon in an academic medical center. After the procedure, the patient reported satisfaction with the outstanding cosmetic result and respiratory improvement.

The purpose of this paper is to report a nasal reconstruction with excision of rhinophyma, followed by FTSG as a defect reconstruction in Manado.

CASE REPORT

A 53-year-old man presented to Manembo-nembo hospital complaining of nasal deformity (Figure 1). The patient noticed slowly progressive thickening of the nose skin about 25 years ago. He claimed rapid growth of the mass in the last three years. His medical history revealed neither alcoholism nor any dermatological disease. On physical examination, there was a large, pedunculated, swollen, firm, irregular mass of 8 cm×7 cm×5 cm in size, occupying the area of the tip, dorsum and both alae of the nose (Figure 2). The nostrils and the mouth were partially obstructed, causing breathing and feeding difficulties. The remaining head and neck examination were normal. Its size at presentation caused cosmetic embarrassment and obstructed the nares. Because of his unaesthetic aspect, the patient was excluded from his family and his group of friends. His family doctor advised against the surgery due to the age. He scored 45 points at the Beck Depression Inventory that indicates a severe depression

Surgical excision was performed under local anesthesia using 2% lidocaine, which was injected into the nose. After the local anesthetic was infiltrated, the hypertrophied tissue was debulked using a number 10 scalpel. The excess tissue was removed layer by layer, with attention to preserve part of the basal appendages overlying the perichondrium to avoid the possibility of scarring. Hemostasis was achieved using bipolar electrocautery to reduce bleeding from the denuded area at a setting of 10-12 watts. Topical mupirocin ointment was applied to the wound, and the area was secured with a tie-over dressing.

The lesion was completely excised in monoblock by using sharp scalpel incision and electrosurgical knife assisted dissection under local anesthesia. The rhinophyma was incised until the perichondrium of the nasal structure is reached. The perichondrium and periosteum of the osteo-cartilaginous tissues were preserved (Figure 3).

Figure 1. A 53-year-old male patient with severe rhinophyma with a 25-year course

Figure 2. Preoperative photograph

Figure 3. Surgical procedure, the final wound surface

Figure 4. Samples after procedure

The dressing was removed after 72 hours, and the wound was left exposed to heal by secondary intention. The excised tissue was sent for histopathological study (Figure 4), and the diagnosis of rhinophyma was confirmed.

On histopathological examination of the biopsy specimens, hyperkeratosis of the epidermis and cystic expansion of ducts in dermis was observed. The sebaceous glands were increased in size and number. Fibrosis and chronic lymphoplasmacytic cell infiltration were observed around the ducts. Neoplastic cells were not seen. There were telangiectatic vessels throughout the structure and marked lymphocytic inflammatory reaction. The result from Patological anatomy, found skin tissue covered with epidermis, subepidermal visible connective tissue stroma including sebaceous glands and moderate cells of lymphocytes and histiocytes, as well as dilated blood capillaries. The follicular infundibulum is also dilated and filled with keratin debris. according to rhinophyma (stage IV rosacea) (Table 1).

After surgery, the patient came to our unit every day for two weeks to check the healing process. The patient never reported pain, neither immediately after surgery nor during the subsequent days. No recurrence was seen during follow-up period; one year after surgery, the result was functionally and cosmetically acceptable to the patient, with the recovery of social and family relationship and an improvement of the depressive state

DISCUSSION

Rhinophyma is benign hypertrophic thickening with edema of the nasal pyramid skin.[1] Rhinophyma is diagnosed clinically with erythema, telangiectasias, nodules, and lobules with a bulbous appearance with skin thickening in the nasal region.[6,7] The lower two-thirds of the nose is affected more than the upper third. There is no specific test for rhinophyma. Diagnostic confirmation is by histology.[3]

Rhinophyma can be classified into three clinical varieties: glandular (nasal enlargement due to hyperplasia of the sebaceous glands), fibrous (increased density of the nasal connective tissue with variable sebaceous hyperplasia), and fibroangiomatous (nasal enlargement due to edematous connective tissue with enlarged veins).[2] It is characterized by lobulated overgrowth of sebaceous glands and connective tissue; the peculiar morphologic characteristics of rhinophyma are: 1)

teleangectasia; 2) hypervascularity; 3) a thick nasal cutaneous layer; and 4) nodularity covered by atrophic skin with expanded pores.[4] No laboratory or radiographic tests are necessary for this condition. Clinical evaluation of the patient determines the type and grade of rhinophyma. The severity and sub-types of rhinophyma get classified in different ways.[3]

Rosacea is the precursor condition to the later development of rhinophyma.[3] The etiology is unknown, It has been reported that the excess of steroid hormones (androgens), gastric disorders, spicy foods, stress, caffeinated products, and alcohol may contribute to this disease.[4] The principal pathogenesis related to an unregulated superficial vascular vasodilation and inflammatory factors, Induction of local transforming growth factor (TGF1) also leads to fibrosis and thickening of the skin. The increased edema predisposes the skin to be colonized by a parasite called Demodex Folliculorum, which may contribute to the etiology of the disease.[1,5] Several hypotheses include potential roles, for environmental factors and microorganisms such as Demodex folliculorum and *Helicobacter pylori*.[2] Such as *Helicobacter pylori* through production of vasodilating agents, and serum gastrin or nitrous oxide may promote transient erythema. Antibody production against collagen VII, elastin, and Demodex folliculorum mite can contribute to the development of papulopustular rosacea.[6]

Rhinophyma is a severe form of rosacea and is graded with the RHISI classification (Table 1).[6] In this case, rhinophyma is considered to be the fourth stage of evolving rosacea as described by Rebora.[10] It is defined as the fourth stage of acne rosacea, an inflammatory dermatologic condition that often begins between the ages of 20 and 30 as facial flushing which is exacerbated by vasoactive substances such as caffeine and spicy foods.[1]

Table 1. Rhinophyma severity index (RHISI)[6,7]

Rhinophyma Severity Scale (RHISI)	
Score*	**Description**
0	No evidensce of rhinophyma
1	Mild skin thickening
2	Moderate skin thickening
3	Strong skin thickening, small lobules
4	Lobules with fissures
6	Giant rhinophyma
Maximum one extra point	Presence of strong asymmetry, multiple cysts or strong vessels
*Maximum score: 6 points	

More pertinent to the earlier stages of rosacea, patients should learn to avoid certain stimuli to decrease vasodilatory skin flushing and persistent erythema. Patients should avoid the following: environmental stimuli such as extreme hot and cold temperatures and sunburns, emotional stimuli from excessive stress and anxiety, physiological stimuli such as caffeine and alcohol in addition to spicy foods and heavy exercise, and exogenous stimuli including chemical peels and other facial irritants. Due to increased transient epidermal water loss, moisturizer use is increasingly important in these patients.[3]

Rhinophyma may cause significant psycho-social morbidity, and treatment may improve patient self-confidence and psycho-logical well-being. Patients may be afraid to go out in public for fear of social stigmatization, as rhinophyma has erroneously been associated with alcoholism.[6]

The medical treatments with antibiotics or retinoids (i.e. isotretinoin to suppress sebum secretion) are useful only in the very early stages.[10] Advanced rhinophyma treatment requires surgical measures to remove tissue. The principal aim of surgery is to reduce the hypertrophied sebaceous glands and re-contour the nose. Secondarily, techniques are used to promote re-epithelialization of the nose.[3] The primary mode of treatment. Indications for surgical treatment are correction of the aesthetic deformity and secondary nasal airway obstruction. Surgical principles include removal of phymatous tissue and preservation of the nasal aesthetic subunits.[6]

The nasal aesthetic subunits consist of the nasal tip, nasal ala, nasal sidewalls, nasal dorsum, soft triangle, and columella. Preserving these subunits optimizes the aesthetic outcome.[6]

Treatment of rhinophyma can be very challenging and involve a combination of different treatment options.[2] Several treatment options are available such as surgery, dermabrasion, and laser therapy.[2,7] Surgical management in severe cases is the first line treatment for rhinophyma[1], to debulk rhinophymatous hypertrophy through full-thickness excision of only a portion of the distorted surface.[9]

Scalpel excision or "cold knife" excision is a more cost and time effective procedure treatment modality with less post-operative complications; however, it risks poor hemostasis intraoperatively. Patient satisfaction is common post-therapy regardless of the treatment method. Over 89% of patients would recommend undergoing treatment for rhinophyma irrespective of treatment type. Treatment options vary, and choice of treatment can be dependent on practitioner and patients' treatment goals.[6]

The subunit surgical approach is reserved for the most severe rhinophyma exhibiting functional nasal problems and facilitates enhancing support and structure. Patients receiving treatment universally report both cosmetic and functional improvements post-operation.[6] Short-term results of surgical treatment of rhinophyma provide patients with an improved cosmetic appearance. Few long-term studies show the probability of recurrence. Recurrence is potentially due to the maintenance of the pilosebaceous unit during partial excisions combined with a relapse in the condition. More data is necessary to draw further conclusions.[3]

Rhinophyma requires an interprofessional team approach, including physicians, specialists, specialty-trained nurses, and pharmacists, all collaborating across disciplines to achieve optimal patient results. All team members must maintain accurate records of their interactions and interventions so that all interprofessional teammates can access updated and accurate information regarding the case. Nurses, pharmacists, and other providers must openly communicate with the treating clinicians and specialists so that any necessary interventions can be implemented promptly.[3]

There was an overall 10.2% recurrence rate, 3.7% complication rate, and 0.0% revision rate. Complete satisfaction was reported in 78%–85% of patients, with 92.51% of patients recommending the surgery. [6]

CONCLUSION

Rhinophyma represent stage IV of rosacea, gives the nose and the rest of the face an unsightly appearance. Medical management generally has disappointing results, except in the very early stages of photomatic change. The histopathological exam is very useful to establish a certain diagnostic and lesions progression.

Rhinophyma can be effectively treated with a simple surgical excision and FTSG. The surgical excision using a scalpel to shave off the abnormal tissue with electrocauterization, as it results in an excellent cosmetic outcome and has short recovery time.

The surgery was performed by a board-certified plastic surgeon in an academic medical center. After the procedure, postoperative follow-up and supervision are necessary to ensure the optimal healing outcomes and that the patient is more confident with the result in concerns with functionality as well as appearance. The patient reported satisfaction with the outstanding cosmetic result and respiratory improvement

Conflict of Interest

The authors affirm no conflict of interest in this study.

REFERENCES

1. Chellappan B, Castro J. Management of severe rhinophyma with electrocautery dermabrasion – A case report. Int J Surg Case Rep. 2020;72(1):511-4. Doi: 10.1016/j.ijscr.2020.06.039
2. Al Hamzawi NK, Al Baaj SM. large rhinophyma treated by surgical excision and electrocautery. Case Rep Surg.

2019;2019:2395619. Doi:10.1155/2019/2395619
3. Dick MK, Patel BC. Rhinophyma. Treasure Island (FL): StatPearls Publishing. August 8, 2023. Accessed August 8, 2023. https://www.ncbi.nlm.nih.gov/books/NBK544373/
4. Cabrini G, La Torre P, Buonamico A, Quaternato G, Neri L, Neri G. A case report of giant rhinophyma. Otorhinolaryngol Head Neck Surg. 2019;4(1):1-3. Doi: 10.15761/ohns.1000194
5. Merigo E, Cella L, Oppici A, Fornaini C. Laser-assisted surgery and bioscaffold for the treatment of rhinophyma. Indian J Dermatol Venereol Leprol. 2018;84(5):629-31. Doi: 10.4103/ijdvl.IJDVL_781_16
6. Chauhan R, Loewenstein SN, Hassanein AH. Rhinophyma: prevalence, severity, impact and management. Clin Cosmet Investig Dermatol. 2020;13(2):537-51. Doi:10.2147/CCID.S201290
7. Zheng YP, He XF, Zhang YF, Geng LX, Zhang HM, Wan H, et al. Five-blade scratcher for treating severe rhinophyma: A retrospective study. World J Clin Cases. 2024;12(20):4180-90. D oi:10.12998/wjcc.v12.i20.4180
8. Fink C, Lackey J, Grande DJ. Rhinophyma: A treatment review. Dermatol Surg. 2018;44(2):275-82. Doi: 10.1097/DSS.0000000000001406
9. Ramsdell WM. Two alternative approaches to "treating severe rhinophyma: a stepwise approach." Dermatologic Surgery. 2023;49(2):208-9. Doi: 10.1097/DSS.0000000000003686
10. Torresetti M, Scalise A, Di Benedetto G. Acellular dermal matrix for rhinophyma: Is it worth it? A new case report and review of literature. Int J Surg Case Rep. 2019;59(1):120-3. Doi: 10.1016/j.ijscr.2019.05.013