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SURGICAL EXCISION IN THE MANAGEMENT OF RHINOPHYMA: A CASE REPORT

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ABSTRACT
Rhinophyma is the most severe and disfiguring manifestation of phymatous rosacea, characterized by progressive hypertrophy of sebaceous glands and connective tissue on the nasal skin. It often leads to both aesthetic and functional impairment. Various treatment options are available, with surgical excision considered the most definitive for advanced cases. This case report aims to highlight the clinical presentation, diagnostic approach, and the effectiveness of surgical excision combined with electrocautery as a treatment modality for rhinophyma. We report a case of a 49-year-old male presenting with progressive nasal enlargement, nodularity with sharply demarcated borders, an irregular surface, and a firm, slightly compressible consistency. Clinical and histopathological examination confirmed the diagnosis of rhinophyma. The patient underwent surgical excision followed by electrocauterization. The procedure was well-tolerated without intraoperative or postoperative complications. Follow-up showed satisfactory cosmetic improvement and no signs of recurrence. The management of rhinophyma varies depending on disease severity. In advanced cases, surgical excision remains the treatment of choice. It provides immediate debulking of hypertrophic tissue and restoration of nasal contour. Combined with electrosurgical techniques, this method offers good cosmetic and functional outcomes, minimal scarring, and a low recurrence rate. It addresses both functional obstruction and cosmetic disfigurement, contributing to improved quality of life.

Keywords: electrocautery; rhinophyma; sebaceous gland hyperplasia; surgical excision

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INTRODUCTION

Rhinophyma is the most common clinical manifestation of phymatous rosacea. It initially presents with hypervascularization, telangiectasia, and chronic hyperplasia of the sebaceous glands, followed by nodular enlargement and deformation of the nose. Rhinophyma is considered the final stage of chronic rosacea, especially phymatous rosacea (Cauhan R et al., 2020 ; Dick & Patel, 2023). Although rhinophyma can also affect the chin, ears, forehead, and eyelids, the nose remains the most frequently involved site. If left untreated, rhinophyma can result not only in significant cosmetic disfigurement of the nose but also in respiratory obstruction due to ptosis of the lower third of the nasal structure (DermNet, 2023).

Rhinophyma predominantly affects middle-aged to elderly white males. The estimated male-to-female ratio among patients with rhinophyma ranges from 5:1 to 30:1, which is thought to be related to increased androgenic activity in men. It most frequently affects individuals of Caucasian descent between the fifth and seventh decades of life and is rarely reported in populations from Africa, America, and Asia (Bolognia, J. L., 2019 ; Alobead, 2021). Rhinophyma is characterized by hypertrophic changes of the nasal skin, which present significant therapeutic challenges. In severe cases, surgical management is considered the

first-line treatment; however, this approach may be contraindicated in patients with heart failure, bleeding disorders, or allergies to anesthetic agents. In such cases, laser and light-based therapies have demonstrated effectiveness in treating generalized erythema and telangiectasia associated with rhinophyma. Common laser modalities include pulsed dye laser (PDL), copper vapor laser, CO_2 laser, and intense pulsed light (IPL), which target deeper blood vessels (Chellappan et al., 2020).

Combined techniques involving surgical excision and electrocautery allow for layer-by-layer removal of excess tissue, achieve adequate hemostasis, and help restore an aesthetically pleasing nasal contour (Dall'Oglio et al., 2024; Chellappan et al., 2020). Dermabrasion, radiofrequency, and loop cautery have also proven effective in producing a smooth and well-contoured appearance. Simple surgical excision using a scalpel to shave hypertrophic tissue, followed by electrocautery at bleeding points, is considered one of the most appropriate interventions for rhinophyma, as it provides excellent cosmetic results and a relatively short recovery period (Chellappan et al., 2020). This case report aims to describe the clinical manifestations, diagnostic process, and management of rhinophyma, while also highlighting simple excision combined with electrosurgical methods as a viable and effective alternative to more resource-intensive techniques, such as laser ablation, particularly in settings with limited access to advanced medical equipment.

METHOD

This article is a case report study that provides diagnosis, clinical management, and patient follow up care. Data from this case report were obtained through anamnesis, physical examination, and supporting examinations conducted at Prof. Chairuddin P Lubis Hospital, Medan. The data obtained were then analyzed qualitatively and presented in narrative form. This case report presents a 49-year-old male with rhinophyma who was successfully treated using simple excision combined with electrosurgical methods. This case report will analyze individual case, and is expected to provide insights into clinical practice, especially regarding the problem of rhynophyma.

CASE REPORT

A 49-year-old male presented to the Dermatology Outpatient Clinic at Prof. Chairuddin Panusunan Lubis Hospital in Medan with a one-year history of a progressively enlarging, thickened, and swollen nasal nodule. He also reported persistent erythema and visibly enlarged pores on the affected area of his nose. The lesion had initially appeared as a corn kernel–sized papule and gradually increased in size. He denied any pruritus. The patient admitted to prolonged sun exposure due to frequent outdoor activities without ever using sunscreen, protective clothing, or other facial/body shields. He had not sought medical attention or used any topical or systemic treatments prior to presentation. There was no personal or family history of similar lesions, nor any history of diabetes mellitus, cardiovascular disease, or malignancy. He did, however, have a known history of hypertension and was adherent to his antihypertensive medication.

On physical examination, his general condition was good, and he was fully alert (Compos Mentis). Vital signs were within normal limits: blood pressure 130/80 mmHg, pulse rate 84 beats/minute, respiratory rate 20 breaths/minute, body temperature 36.8 °C, and nutritional status was appropriate for age and gender. Dermatologic inspection of the nose revealed a solitary, skin-colored nodule with sharply demarcated borders, an irregular surface, and a firm, slightly compressible consistency, measuring approximately 1.5 × 0.8 × 0.5 cm at the nasal region (Figure 1). Dermoscopic evaluation demonstrated a reticular pattern of linear vessels, nonspecific linear vessels, nonspecific dotted vessels in a patchy distribution,

branched linear vessels, and follicular pustules (Figure 2). Based on these findings, a differential diagnosis of rhinophyma, lupus pernio, and basal cell carcinoma was considered.

The patient was scheduled for laboratory investigations, including coagulation studies (prothrombin time and activated partial thromboplastin time) and fasting blood glucose. He was also planned for surgical excision of the lesion, followed by electrocautery and histopathologic examination. Laboratory results for PT, aPTT, and blood glucose were all within normal limits. After reviewing the proposed surgical procedure and potential risks, the patient provided written informed consent for excision and electrocautery.

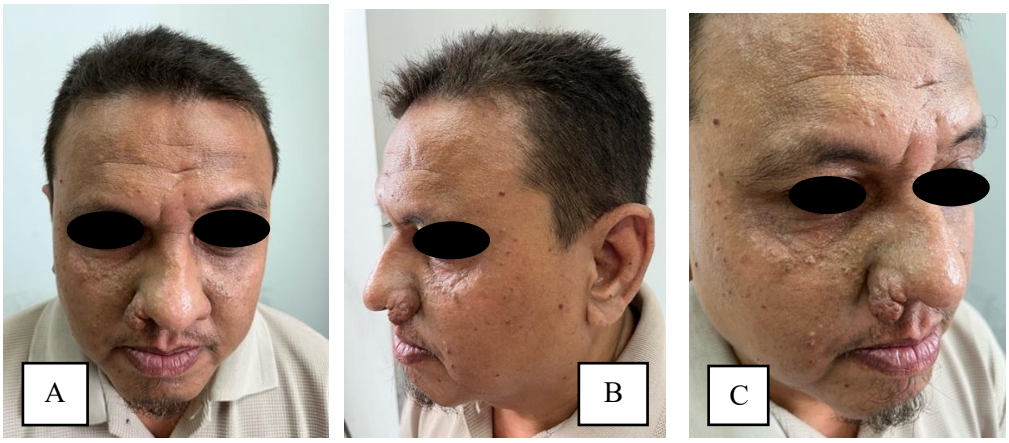

Figure 1. Clinical photograph of the patient during the initial visit. Dermatological examination revealed a skin-colored nodule with well-defined borders, an irregular surface, and a firm, slightly compressible consistency, measuring 1.5 × 0.8 × 0.5 cm, located on the nasal region (A–C).

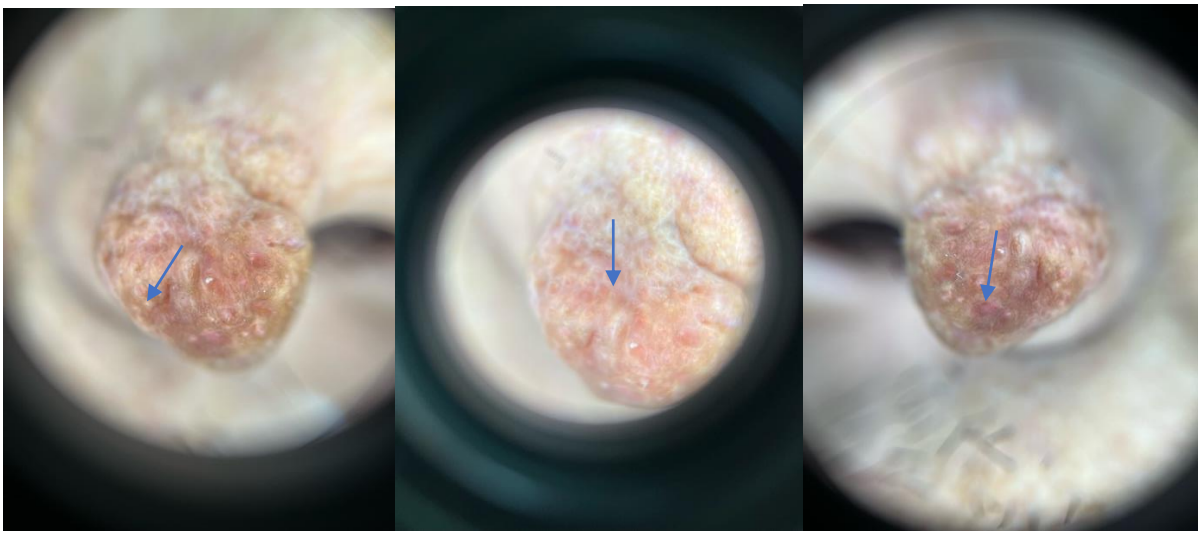

Figure 2. Dermoscopic findings. Dermoscopic examination revealed reticular linear vessels, nonspecific linear vessels, nonspecific dotted vessels in a patchy distribution, linear vessels with branches, and follicular pustules (A–C).

At the next follow-up visit, surgical excision and electrocauterization were performed to remove the lesion. Prior to the procedure, the patient received a detailed explanation regarding the surgical plan and was asked to sign an informed consent form. The excision procedure began with patient education and the obtaining of informed medical consent. Preparations included setting up the patient, surgical instruments, and medical personnel, along with

infection prevention measures through strict aseptic and antiseptic techniques at the operative site. The surgical field was covered with sterile drapes, and incision lines were marked using a sterile skin marker. Local anesthesia was administered via infiltration of 2% lidocaine, and the area was allowed to rest for 5–10 minutes to ensure optimal anesthetic effect. Once adequate numbness was confirmed, excision was performed using a No. 15 scalpel blade mounted on a No. 3 handle. The surgical wound was irrigated with 0.9% NaCl, topical antibiotic ointment was applied, and the site was dressed with sterile gauze.

The electrocauterization procedure involved destroying or dissecting the pathological lesion using a low-voltage electrode needle applied directly to the tissue. The affected area appeared grayish with coagulated, charred tissue. The burned tissue was cleared using sterile gauze or a curette, and the procedure was repeated until the lesion was completely removed. Hemostasis was achieved using electrofulguration or bipolar electrocoagulation. After completion, standard decontamination, handwashing, and postoperative care protocols were followed.

Figure 3. Surgical excision and electrocauterization procedures (A&B). Documentation following the excisional biopsy procedure (C&D).

The excisional biopsy served a dual purpose—therapeutic removal of the lesion and obtaining tissue for histopathological examination. Following the excision, the tissue sample was sent to the Department of Anatomical Pathology for further analysis. Postoperative treatment included a 7-day course of medications: cefadroxil 500 mg tablets twice daily, mefenamic acid 500 mg tablets three times daily, ranitidine 150 mg tablets twice daily, and topical gentamicin 0.1% cream applied to the lesion twice daily. The patient was advised to return for weekly follow-up appointments.

Histopathological Findings shows *Macroscopic examination*: A single tissue fragment measuring 1.5 × 0.8 × 0.5 cm was received, skin-colored, with a soft and elastic consistency with *microscopic examination*: A section of tissue revealed sebaceous gland proliferation and hypertrophy, along with dermal thickening. The dermis was composed of myxoid and edematous connective tissue with sebum plugging among the sebaceous glands. Areas of fibrosis, dilated lymphatic vessels, and moderate lymphocytic infiltration were observed. The epidermal layer appeared within normal limits.Conclusion: Histopathological features are consistent with phymatous rosacea.

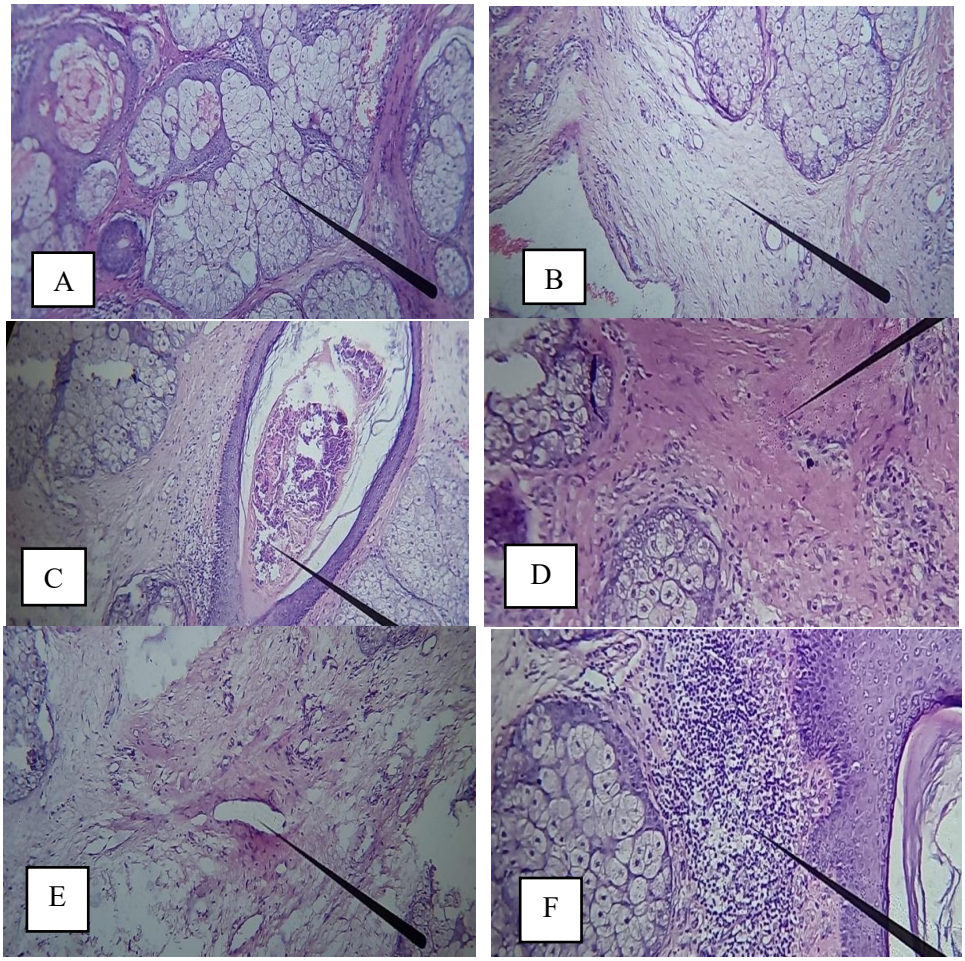

Figure 4 Histopathological examination revealed sebaceous gland proliferation and hypertrophy with dermal thickening (A). The dermis was composed of myxoid and edematous connective tissue (B) with sebum plugging between sebaceous glands (C). Areas of fibrosis, lymphatic vessel dilation, and moderate lymphocytic infiltration were also observed (D–F).

On fourth follow-up, via teledermatology, the patient reported that the postoperative wound had dried, with only residual erythematous patches on the nasal area, without any signs of secondary infection.

Figure 5. Patient documentation via teledermatology showing progressive wound drying, with no edema, bleeding, or signs of secondary infection (A–C).

The patient was educated to use sun protection when engaging in outdoor activities, including both physical protection (e.g., hats) and chemical protection (sunscreen), to prevent

recurrence. The patient was also advised to avoid triggers such as spicy foods, alcohol, and stress. The prognosis is quo ad vitam: good; quo ad functionem: questionable to good; quo ad sanationem: questionable to good.

DISCUSSION

Rhinophyma is the most common clinical manifestation of phymatous rosacea. It initially presents with hypervascularization, telangiectasia, and chronic hyperplasia of the sebaceous glands, followed by nodular enlargement and deformity of the nose. Based on the severity of the deformity, rhinophyma is considered the end stage of chronic acne rosacea. (Amiri S.V., 2025 ; Olafsdottir et al., 2025; Griffiths et al., 2023). Rhinophyma typically occurs in individuals over the age of 40 and is more common in men than in women, with a ratio of 5:1. Although it can also develop on the chin, ears, forehead, and eyelids, the nose is the most frequently affected site (Alobead Z et al., 2021; Benyo S et al., 2021).

Rhinophyma presents clinically as soft tissue hypertrophy of the nose, erythema, telangiectasia, nodules, and bulbous lobules. Three classification and grading systems for rhinophyma have been developed based on severity and tissue involvement. According to Clark et al., rhinophyma is categorized into four groups: (1) limited involvement of the nasal tip with a “lobular” appearance, (2) involvement of the distal half of the nose, tip, and ala, (3) involvement of the distal half, tip, and alar nodules, and (4) diffuse involvement including the nasal dorsum and nasofacial sulcus. El Azhary et al. classify rhinophyma into three grades: minor (telangiectasia and mild thickening or textural change), moderate (nasal thickening with early lobule formation), and major (prominent hypertrophy of the nose and lobules). Additionally, the Rhinophyma Severity Index (RHISI) assesses severity across six levels: a score of 0 indicates no rhinophyma, while scores from 1 to 4 indicate mild to severe skin thickening with lobules and fissures. The maximum score of 6 reflects giant rhinophyma, characterized by marked asymmetry, multiple cysts, or prominent vascularization. An additional point may be given for extreme findings (Bofares KM., 2022).

Ultraviolet (UV) radiation exacerbates rosacea by increasing reactive oxygen species (ROS), which trigger inflammation, dermal matrix degradation, and angiogenesis through upregulation of MMPs, VEGF, and FGF. This chronic inflammatory response contributes to phymatous changes that may progress to rhinophyma, a severe complication marked by sebaceous gland hyperplasia and nasal tissue hypertrophy. (Geng RSQ., 2024). Histopathological classification of rhinophyma by Jansen and Plewig divides the condition into four types based on tissue characteristics and morphology. The glandular type features prominent sebaceous gland hyperplasia, presence of Demodex mites, dense distribution of VIP-R positive cells, and expression of intermediate filaments and neuroglandular antigens. The fibrous type shows diffuse connective tissue hyperplasia with variable sebaceous gland hyperplasia, large deposits of elastotic material damaged by sun exposure, vessel dilation, and absence of pilosebaceous structures, with positive staining for factor XIII. The fibroangiomatous type presents with copper-red to deep red swollen noses, superficial ectatic veins, pustules, fibrosis, telangiectasia, and inflammatory lesions, with less prominent sebaceous hyperplasia. The actinic type is characterized by nodular elastic tissue masses, sebaceous gland proliferation, ductal dilation, thick sebum expression, and presence of gram-positive Corynebacterium and Demodex folliculorum, with sparse distribution of yeast organisms (Bofares KM., 2022).

Histopathological examination in this case confirmed rhinophyma, characterized by hypertrophic sebaceous glands and connective tissue with signs of chronic inflammation. Histopathology is essential as it may reveal squamous cell carcinoma, basal cell carcinoma, or

other angiomatous tumors that clinically mimic rhinophyma. In accordance with the literature, this case showed proliferation and hypertrophy of sebaceous glands with dermal thickening. The dermis consisted of myxoid and edematous connective tissue with sebum plugging between sebaceous glands. There was evidence of fibrosis, lymphatic vessel dilation, and moderate lymphocytic infiltration (Rodrigues-Braz D et al., 2021; Griffiths et al., 2023). The differential diagnosis included rhinophyma, lupus pernio, and basal cell carcinoma. Lupus pernio presents as hardened purple or reddish plaques primarily affecting the central face, including the nose and cheeks, and may also involve the ears, and rarely, the dorsum of the hands and feet. It is a manifestation of sarcoidosis, a chronic inflammatory disease of unknown etiology, thought to represent an immune response to unidentified antigens (Geng RSQ et al., 2024; Rodrigues-Braz D et al., 2021). Basal cell carcinoma (BCC) is the most common type of skin cancer, originating from basal cells that produce new skin. BCC usually develops in sun-exposed areas and grows slowly (Sharma A et al., 2022; Bofares KM et al., 2022).

Surgical excision is one of the most effective treatments for rhinophyma. Management involves various treatment combinations. Medical therapy includes oral isotretinoin and antibiotics such as tetracyclines, erythromycin, and topical metronidazole, which may be beneficial in early stages (Sharma A et al., 2022; Geng RSQ et al., 2024). However, oral medications are usually ineffective in established rhinophyma, and surgery is often required. Treatment options include excisional surgery, dermabrasion, tissue debulking with microdebrider, ablative carbon dioxide laser therapy, electrosurgery, and electrocautery. There is currently no standardized protocol for managing rhinophyma (Bofares KM et al., 2022; Rodrigues-Braz D et al., 2021).

Rhinophyma is a benign condition characterized by an enlarged, bulbous nose with prominent pores. It is usually associated with untreated rosacea. In this case report, we utilized a combined approach of simple surgical excision and electrocautery as an alternative management option for rhinophyma (Bolognia,et al., 2019; Madan S et al., 2023). This procedure is easy to perform and produces significant outcomes. One advantage of this method is the absence of complications such as scarring or post-operative hyperpigmentation, as noted during long-term follow-up (Fei W et al., 2022). The extent of tissue growth and disease severity can help determine the preferred management approach. The chosen treatment modality and the clinician's expertise are expected to yield better outcomes (Kara YA et al., 2021; Stefanou E et al., 2022). The prognosis for this patient is *quo ad vitam*: good, *quo ad functionem*: questionable to good, and *quo ad sanationem*: questionable to good.

CONCLUSSION

The management of rhinophyma is complex due to its varying degrees of severity and the availability of multiple treatment modalities. Rhinophyma represents a severe form of rosacea and is assessed using the RHISI. The choice of treatment varies and its effectiveness depends on the severity of the disease and the therapeutic goals. Excisional techniques and laser therapy are commonly employed. A surgical subunit approach may be indicated in severe cases of rhinophyma, particularly when there is functional nasal impairment, as it facilitates the restoration of structural support and contour. Patients who undergo treatment generally report favorable cosmetic and functional outcomes postoperatively.

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