

## CASE REPORT

# Rhinophyma – from clinical presentation to definitive treatment: a case-based approach

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## ABSTRACT

Rhinophyma is a chronic, progressive dermatological disorder characterized by hypertrophy and hyperplasia of sebaceous glands localized to the nasal region. It is frequently associated with phymatous rosacea in its advanced stages and manifests clinically with significant tissue overgrowth, leading to distortion of nasal contours and, in severe cases, functional impairment such as external nasal valve collapse and airway obstruction. Given the irreversible nature of the structural changes and the lack of spontaneous regression, surgical intervention remains the definitive treatment modality. A recent case of rhinophyma managed within our department provided valuable insights into its clinical features, diagnostic considerations, and therapeutic decision-making. This report presents the essential aspects of the case and reflects on the practical implications for effective management of this condition.

**KEYWORDS:** rhinophyma, surgical excision, rosacea, nasal deformity, sebaceous glands, electro-surgery.

## INTRODUCTION

Rhinophyma, its name rooted in the Greek terms “*rhis*” (nose) and “*phyma*” (growth), is characterized by a bulbous<sup>1</sup>, erythematous nasal enlargement that typically arises due to granulomatous infiltration associated with long-standing, untreated rosacea. Although uncommon, this condition is most often seen in individuals between the ages of 40 and 60, and it is rarely observed before the age of 30. Epidemiologically, it shows a marked predilection for Caucasian populations, with the highest incidence reported among those of Northern European descent<sup>2</sup>.

Rhinophyma is recognized as a progressive manifestation of phymatous rosacea, typically associated with advanced (stage III) disease<sup>3</sup>. While phymatous changes may present in various facial regions – including the chin, ears, forehead, and eyelids – the nose is by far the most common site of involvement<sup>4</sup>. Clinically, rhinophyma is characterized by nodular thickening and distortion of the nasal tissue due to hypertrophy of sebaceous glands. If left unmanaged, the condition can result in severe nasal disfigurement and may significantly compromise airway patency secondary to ptosis and collapse of the lower third of the nose.

The progression of rhinophyma is typically gradual, unfolding over several years. In its advanced stages, the condition extends beyond cosmetic disfigurement, potentially leading to significant impairments in respiratory mechanics and, in some instances, difficulties with alimentation.

Despite its characteristic appearance, rhinophyma can occasionally pose diagnostic challenges, particularly in its early or atypical forms, where it may mimic neoplastic, infectious, or infiltrative conditions of the nasal soft tissue. Differential diagnosis should include basal cell carcinoma, sebaceous carcinoma, sarcoidosis, and even lupus pernio, all of which may present with nodular nasal lesions. Histopathological confirmation may be necessary in ambiguous or rapidly progressive cases, especially when asymmetry, ulceration, or induration is present<sup>4</sup>.

The pathophysiology of rhinophyma remains incompletely elucidated, though chronic inflammation, vascular dysregulation, and fibrotic remodelling are known contributors. Hormonal factors, particularly androgenic influence on sebaceous gland activity, have also been implicated in its male predominance<sup>5</sup>. Lifestyle and environmental factors, such as alcohol consumption, spicy food intake, ultraviolet exposure, and extremes of temperature, may

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exacerbate the condition, although their role in disease onset remains controversial.

From a therapeutic standpoint, early recognition and intervention are key to preventing irreversible tissue damage and restoring nasal form and function. Medical therapies, including topical or systemic antibiotics, retinoids, and anti-inflammatory agents, are largely ineffective at halting or reversing established phymatous changes. Consequently, surgical intervention remains the mainstay of treatment in moderate to advanced cases. Modern surgical approaches, including CO<sub>2</sub> laser ablation, radiofrequency excision, scalpel reduction, and dermabrasion, have demonstrated favourable outcomes, allowing for both functional restoration and cosmetic improvement<sup>6</sup>.

Given its physical, functional, and psychosocial impact, rhinophyma represents more than a mere aesthetic concern. It necessitates a multidisciplinary management strategy and remains a topic of ongoing clinical interest due to its variable presentation and evolving therapeutic modalities. This paper aims to review the clinical features, etiopathogenesis, diagnostic considerations, and treatment options for rhinophyma, with an emphasis on current surgical approaches and outcome optimization.

## CASE REPORT

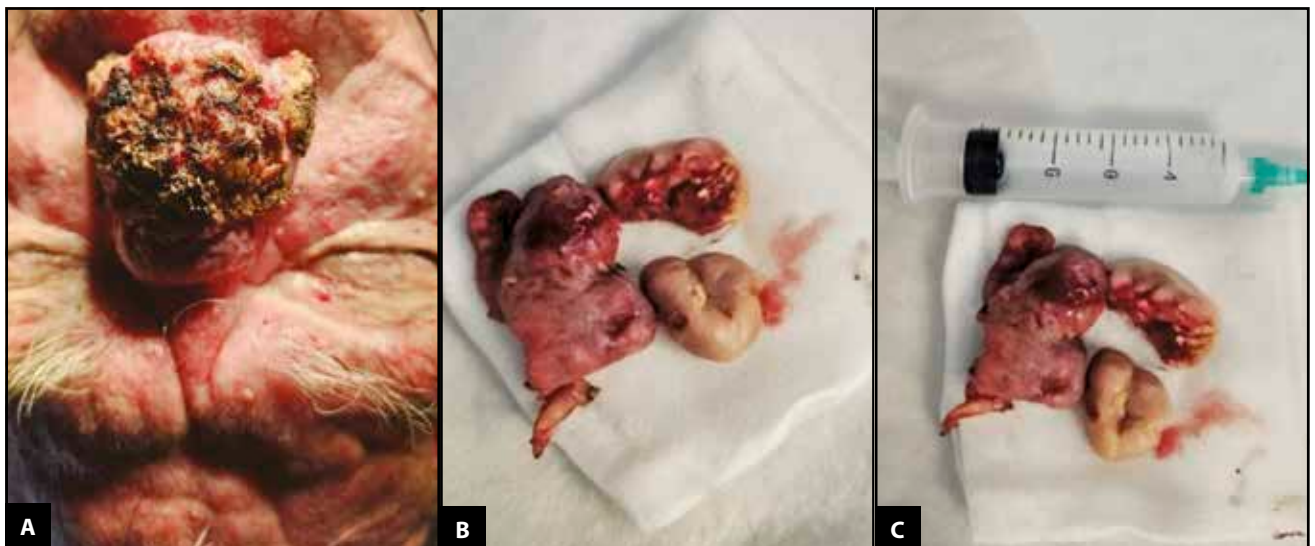
A 62-year-old male patient presented to the Department of Otorhinolaryngology with progressive nasal enlargement and deformity that had developed over several years (Figure 1). The patient reported nasal obstruction, intermittent local discomfort, and increasing psychosocial distress due to the aesthetic impact. Clinical examination revealed a bulbous, lobulated, erythematous nasal mass with thickened skin and prominent sebaceous glands, features consistent with rhinophyma.



**Figure 1.** Frontal view of a patient with advanced rhinophyma. The nose presents marked hypertrophy, nodular deformation, and thickened, erythematous skin with prominent sebaceous lobulation.

The nasal tumor was traversed by multiple glandular openings, from which sebum was expressed upon pressure. The patient did not report pain; however, the physical manifestations of the condition had a considerable impact on his self-esteem and social engagement. Diagnostic evaluation was based on clinical examination.

Therapeutic management involved surgical excision of the hypertrophic nasal tissue (Figure 2 A, B, C), complemented by electrosurgical techniques under general anes-



**Figure 2.** A. Immediate postoperative aspect following combined surgical treatment of rhinophyma. B, C. Macroscopic views of excised rhinophymatous tissue.

thetia, and postoperative management was carried out on an outpatient basis. This method employs high-frequency electrical energy to selectively perform tissue cutting, coagulation, or vaporization, tailored to the surgical objective.

Immediately postoperatively, the surgical wound was carefully cleansed using povidone-iodine (Betadine) solution diluted 1:10 with sterile saline. This antiseptic preparation was applied using sterile gauze to ensure gentle decontamination of the wound surface, aiming to minimize microbial contamination while avoiding cytotoxic effects associated with undiluted povidone-iodine. The area was then left exposed briefly to allow excess antiseptic to evaporate before applying a non-adherent dressing. No signs of adverse reactions or local irritation were noted during the immediate postoperative period.

Wound care during the first four postoperative days consisted of daily gentle cleansing of the surgical area using sterile saline solution, without friction or mechanical trauma. To maintain an optimal moist environment conducive to tissue regeneration, non-adherent greasy dressings (such as Jelonet® or Atrauman®) were applied. These dressings do not adhere to the wound and allow for adequate gas exchange.

During the first two postoperative days, the wound was decontaminated by local application of povidone-iodine diluted 1:10 with sterile saline, as an antiseptic measure, followed by the application of a protective dressing. After this initial phase, in the absence of signs of infection, antiseptics were discontinued to avoid delaying the epithelialization process.

Dressings were changed daily under sterile conditions, and the patient was instructed to avoid touching the area, as well as exposure to dust, excessive heat, or sunlight. No cicatrizing or moisturizing creams were applied during this period, in order not to interfere with the natural formation of

the crust and the initiation of epithelial regeneration.

From postoperative day five, following the formation of crusts and early signs of epithelialization, topical application of Cicatrix cream was initiated and continued twice daily for 30 days. Cicatrix contains key active ingredients such as *Centella asiatica* extract and allantoin, recognized for their anti-inflammatory, wound-healing, and scar-preventive properties. In addition to Cicatrix, the patient also used Bepanthen® cream (dexpanthenol) to support hydration of the regenerating tissue and promote epithelial repair. The two products were applied alternately - one in the morning and the other in the evening - under medical guidance.

Once full epithelialization was achieved and the skin entered the remodelling phase (approximately 10–14 days postoperatively), the patient was instructed to apply a broad-spectrum sunscreen (SPF 50+) daily, in order to protect the new tissue from ultraviolet exposure and prevent post-inflammatory hyperpigmentation or discoloration of the scar. The combined regimen contributed to favourable wound healing, with no signs of infection, delayed healing, or hypertrophic scarring, and led to a satisfactory aesthetic and functional outcome at the 30-day follow-up.

Histopathological analysis confirmed sebaceous gland hyperplasia and dermal fibrosis, consistent with rhinophyma.

The patient's postoperative evolution was favourable (Figure 3A). Complete re-epithelialization was achieved within approximately three weeks, with no signs of infection or abnormal scarring (Figure 3B, C). At the one-month follow-up, the patient demonstrated significant improvement in both the aesthetic appearance and nasal function. The skin regained a more natural texture and coloration, and the nasal architecture was successfully restored. The patient also reported increased self-confidence and social comfort.



**Figure 3.** A. Postoperative aspect at day 7 following combined surgical treatment of rhinophyma. B, C. Postoperative appearance at 30 days following combined surgical management of rhinophyma.

## DISCUSSIONS

Rhinophyma is a progressive and disfiguring condition that may lead to nasal airway obstruction due to tissue hypertrophy. In moderate to severe cases, medical management proves largely ineffective, and surgical intervention remains the cornerstone of treatment.

Rhinophyma is considered the terminal stage of a chronic inflammatory skin disorder primarily affecting the central facial area. Previously mislabelled as 'acne rosacea', this outdated term fails to reflect the distinct etiology of the condition. Epidemiological data indicate a prevalence ranging from 0.5% to 10%<sup>7</sup>, influenced by geographic and ethnic factors. Individuals with fair complexion, particularly those of Celtic origin from Northern Europe, appear to be more susceptible. Although rosacea generally affects women more frequently, rhinophyma is predominantly observed in men, especially between the ages of 40 and 50<sup>7,8</sup>. The disease may follow a progressive course through several clinical phases – initial flushing, persistent erythema with telangiectasia, inflammatory lesions such as papules and pustules, and finally, tissue hypertrophy leading to phymatous changes. Notably, these stages do not always occur sequentially, and advanced forms like rhinophyma may arise without preceding inflammatory signs.

Medical therapy is generally ineffective in reversing established phymatous changes, especially in moderate to advanced cases. As a result, surgical management remains the cornerstone of treatment. Various surgical techniques, including scalpel excision, dermabrasion, electrosurgery, CO<sub>2</sub> laser ablation, and radiofrequency methods, can achieve excellent functional and cosmetic results when appropriately selected and performed by experienced specialists<sup>9,10</sup>. The goal of surgery is not only to restore nasal contour and function, but also to reduce the psychological burden carried by affected individuals.

Although current treatment methods are largely successful in managing the physical manifestations of the disease, the underlying pathogenic mechanisms remain a subject of ongoing investigation. Future research should focus on identifying early biomarkers for disease progression and exploring potential medical therapies that may prevent or mitigate tissue hypertrophy before irreversible damage occurs.

Our clinical experience supports the use of a combined surgical approach in the treatment of rhinophyma to achieve optimal functional and aesthetic outcomes. Surgical excision of excess nasal tissue, complemented by electrosurgery and loop electrocautery dermabrasion, offers effective control of intraoperative hemostasis and contributes significantly to the final cosmetic result<sup>10,11</sup>. Electrocautery dermabrasion, while less invasive and typically requiring only a single operative session, must be performed with precision to avoid thermal injury to surrounding tissues<sup>12</sup>.

Cold scalpel excision remains a cost-effective and efficient option, offering precise tissue removal, better preserva-

tion of pilosebaceous units, and faster re-epithelialization. However, its limitations, particularly in achieving adequate hemostasis and maintaining surgical field visibility, can be addressed by integrating electrocautery techniques<sup>13</sup>.

By combining both modalities, we were able to enhance surgical precision, minimize complications, and improve postoperative healing. This integrative approach may represent a practical and effective standard for managing moderate to severe cases of rhinophyma.

## CONCLUSIONS

Rhinophyma represents a rare yet significant subtype of rosacea, characterized by progressive sebaceous gland hyperplasia and connective tissue overgrowth, most commonly affecting the nasal region. Although benign, its clinical impact is often profound due to aesthetic deformity and, in some cases, functional nasal obstruction.

This case highlights the importance of early surgical intervention in advanced rhinophyma, which remains the mainstay of treatment when medical therapy fails. Electrosurgical excision proved to be an effective approach for tissue debulking and nasal contour restoration, with favourable aesthetic and functional outcomes.

Postoperative care is equally important, playing a crucial role in wound healing and scar prevention. The combined use of Cicatrix and Bepanthen® creams, along with broad-spectrum sun protection, supported optimal tissue regeneration and prevented hypertrophic scarring. The patient's evolution was favourable, with no complications and excellent cosmetic results at follow-up.

This case underlines the value of an individualized, multidisciplinary approach – encompassing dermatologic, surgical, and postoperative strategies – in the successful management of rhinophyma. Continued research is needed to optimize long-term outcomes and evaluate the efficacy of topical agents in enhancing postoperative recovery.

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