

Case Report

Combined electrosurgery and coblation in advanced rhinophyma: A case report

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Summary

Advanced rhinophyma is usually treated surgically to remove excess tissue and restore the normal shape of the nose. Several techniques, such as electrosurgery, laser resurfacing, coblation, and dermabrasion, may be used alone or in combination depending on disease severity and patient factors. We report the case of a 67-year-old male with type 2 diabetes mellitus and hypertension who presented with giant rhinophyma. Considering the patient's comorbidities and the increased risk of postoperative complications, a surgical approach resulting in minimal intraoperative bleeding was considered essential. Although coblation alone is often effective for tissue reduction with limited bleeding, in this case, it was insufficient due to the excessive volume of hypertrophic tissue, so we combined electrosurgical and coblation approaches to remove tissue carefully, control bleeding, preserve nasal structure, and minimize scarring and delayed healing in a patient with poorly controlled diabetes.

Key words: coblation, combined surgical approach, electrosurgery, rhinophyma



Academic editor: Galya Stavreva
Received: 10 January 2026
Accepted: 24 February 2026
Published: 14 April 2026

Citation: Yildiz M, Duhlenki B (2026) Combined electrosurgery and coblation in advanced rhinophyma: A case report. Journal of Biomedical and Clinical Research 19: 173–181. <https://doi.org/10.3897/jbcr.e184319>

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Introduction

Rhinophyma is a rare and deforming skin condition characterized by the gradual thickening of the nasal tissue caused by enlargement of the sebaceous glands and fibrotic changes. It is a severe form of rosacea that develops gradually and often causes both cosmetic and functional issues (Two et al. 2015). Clinically, it appears as a bulbous, nodular nose with enlarged pores, which can impair nasal airflow (Crawford et al. 2004).

The condition mainly affects men aged 50 to 70, with a male-to-female ratio reported as high as 12:1. Its exact cause is unclear, but chronic inflammation, vascular changes, and abnormal sebaceous activity are key factors, with possible contributions from genetics, environment, and alcohol (Wilkin et al. 2002; Elewski et al. 2011).

Beyond aesthetics, rhinophyma can cause psychosocial distress, including social stigma and reduced quality of life. Treatments for rosacea range from medical management in early stages to surgical correction in advanced cases (van Zuuren et al. 2015; Tüzün et al. 2014; Clarós et al. 2018; Goh et al. 2020).

Surgery can be effective but carries risks, especially in diabetic patients, who face impaired healing, higher infection risk, and delayed tissue regeneration due to hyperglycemia (Guo and Dipietro 2010). Careful glycemic control, precise surgical technique, and close postoperative follow-up are essential to reduce complications and improve outcomes (Benyo et al. 2021).

Case presentation

We present a clinical case from the Department of Otorhinolaryngology at the Dr. G. Stranski University Hospital – Pleven. A 67-year-old man was admitted in January 2025, presenting with nasal deformity and redness persisting for several years, as well as difficulty with eating (Fig. 1). The patient had not previously consulted a specialist and had not undergone any treatment. His known comorbidities included type 2 diabetes mellitus and arterial hypertension. There was no family history of rhinophyma (Curnier and Choudhary 2002; Schweinzer et al. 2017).



Figure 1. Preoperative clinical appearance of rhinophyma (a, b). Images demonstrate the disease severity before surgical treatment.

Our clinical examination showed a cauliflower-like nose involving the nasal dorsum, tip, and alae, with hyperemic skin and telangiectasias. No endonasal pathology was identified. These findings suggest advanced rhinophyma as described in dermatology and ENT (Crawford et al. 2004). Paraclinical investigations showed no abnormalities except for poorly controlled diabetes (blood glucose level: 12.6 mmol/L) (Guo and Dipietro 2010).

Surgical management

Given the patient's comorbidities, a combined surgical approach was chosen to minimize bleeding and reduce postoperative complications. Electroexcision combined with coblation (Fig. 2) was performed to remove rhinophymatous tissue affecting the dorsum, tip, and alae of the nose (Selig et al. 2013). Coblation allowed tissue ablation at relatively low temperatures, minimizing thermal injury and intraoperative bleeding (Timms et al. 2011).

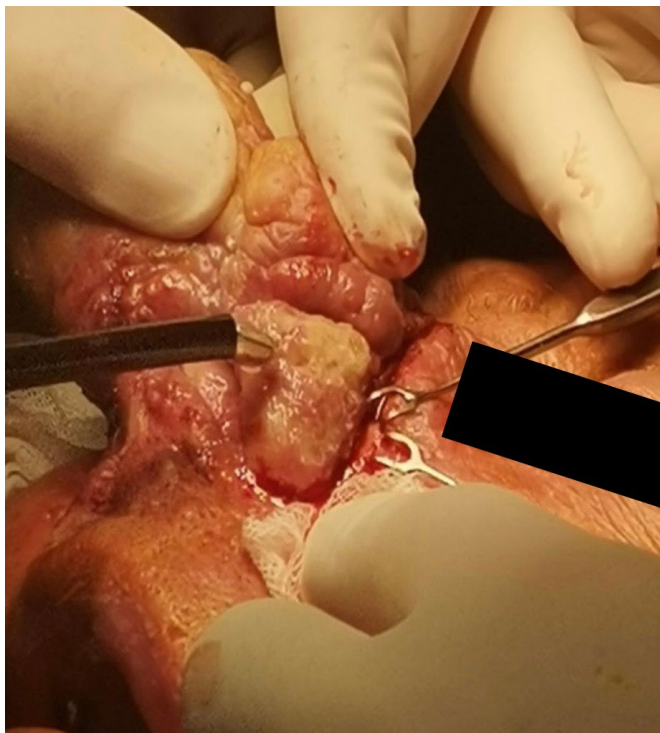


Figure 2. Intraoperative coblation

During the intervention, the anatomical integrity and shape of the nasal cartilages were preserved (Fig. 3), with no intraoperative complications, which is a critical principle in rhinophyma surgery. We applied coblation along the edges, followed by electrosurgery (Fig. 4) to elevate the giant rhinophyma and allow precise visualization of the healthy nasal framework. Preservation of residual dermal tissue was prioritized to promote spontaneous epithelialization and avoid flap reconstruction, which can be problematic in diabetic patients (Guo and Dipietro 2010).

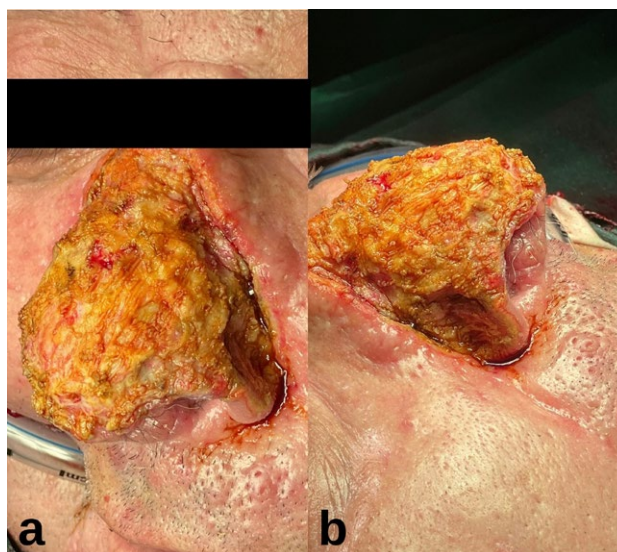


Figure 3. Intraoperative appearance during surgical treatment (a, b). Images demonstrate exposure of underlying cartilaginous structures and resection margins, as well as the surgical field immediately following removal of the rhinophymatous tissue.

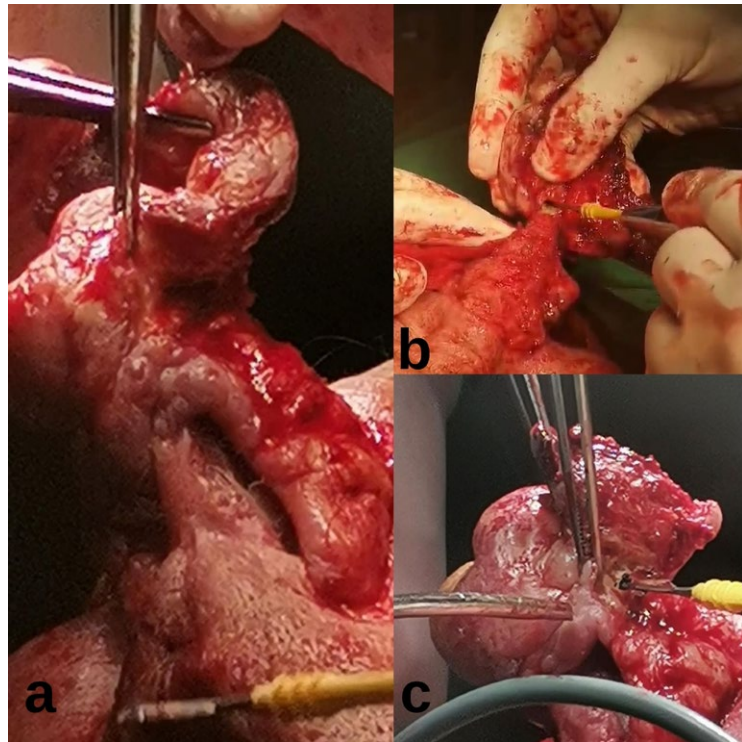


Figure 4. Intraoperative appearance during electrosurgical treatment (a–c). Images illustrate the electrosurgical approach to hypertrophic tissue, showing controlled resection, visualization of the underlying nasal framework, and precise application of electrosurgery in proximity to the hypertrophic tissue while preserving adjacent healthy tissue to minimize collateral thermal injury.

In the early postoperative period, local epithelializing agents (Fig. 5) were applied. These local agents had a strong effect on healing during the postoperative period (Figs 7–9).

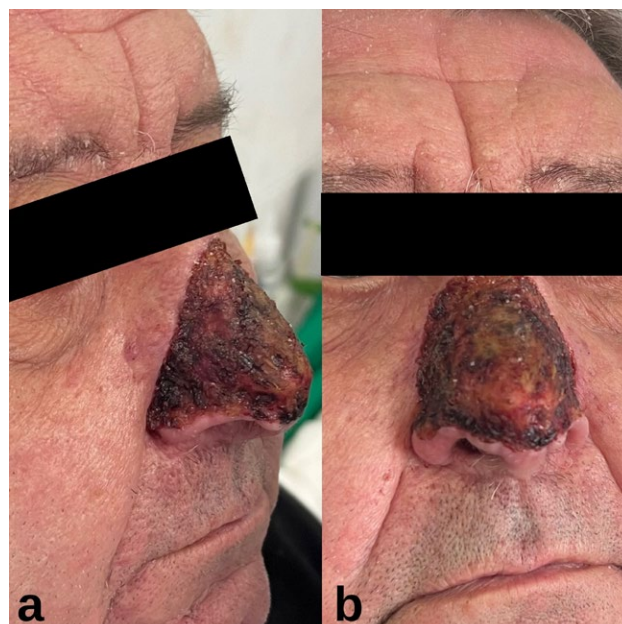


Figure 5. Wound epithelialization following surgical treatment (a, b). Postoperative images demonstrated progressive epithelialization of the wound during healing.

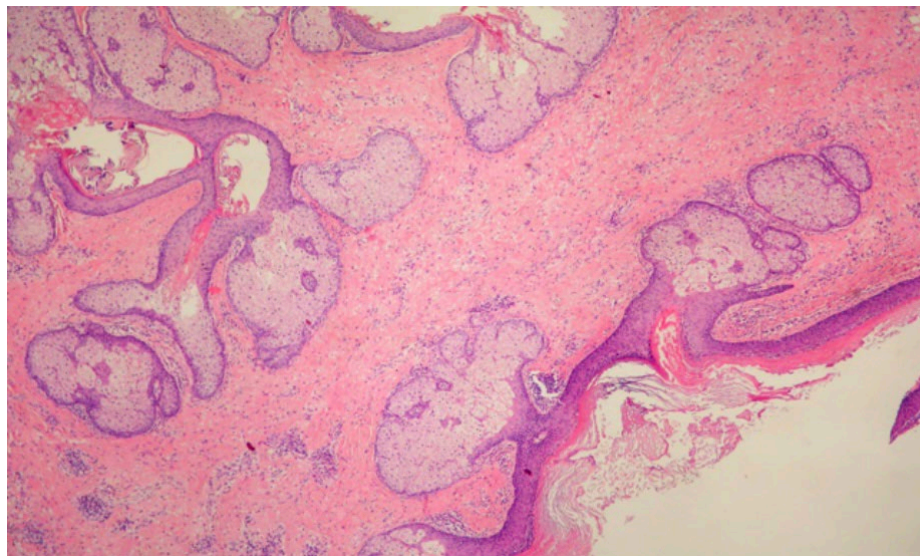


Figure 6. Histopathological specimen. Section from surgical excision showing marked sebaceous gland hyperplasia with enlarged lobules and dilated follicular structures. (Hematoxylin-eosin $\times 40$).



Figure 7. Clinical appearance at 45 days following surgical treatment. Postoperative image demonstrated persistent nasal crust formation at the nasal tip.

Histopathological examination

Microscopic examination showed a polypoid skin lesion with hyperkeratotic epidermis, enlarged hair follicles, sebaceous gland hyperplasia, keratin-filled hair follicles, and pericyclic inflammation. The dermal stroma showed marked collagenization with fibroblast proliferation (Fig. 6), findings characteristic of rhinophyma.

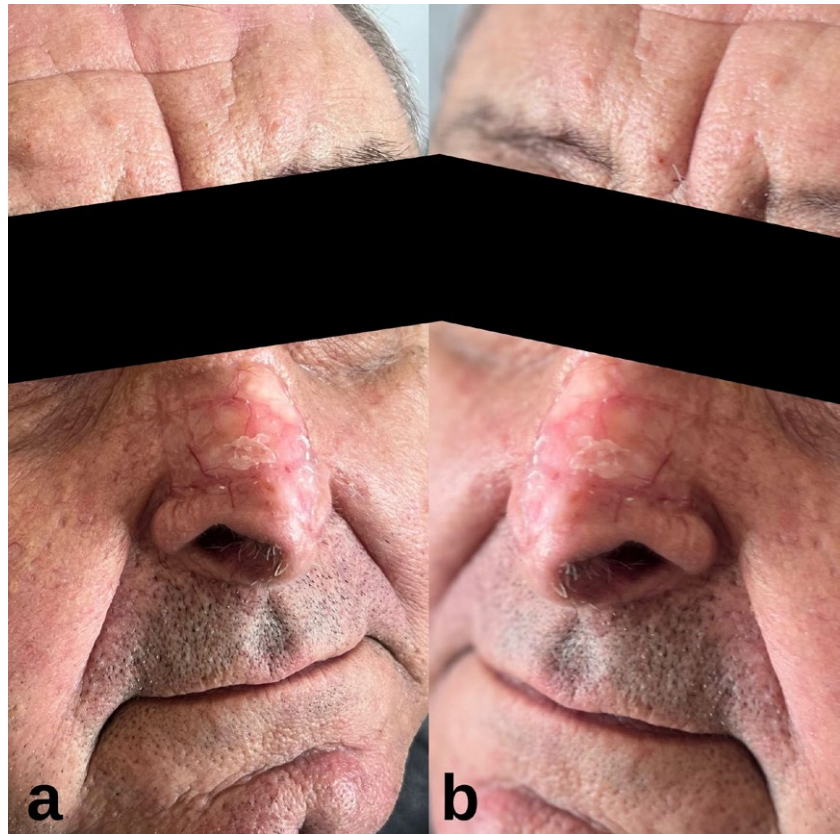


Figure 8. Clinical appearance at 3 months after surgical treatment (a, b). Postoperative images demonstrating sustained absence of nasal crust formation.

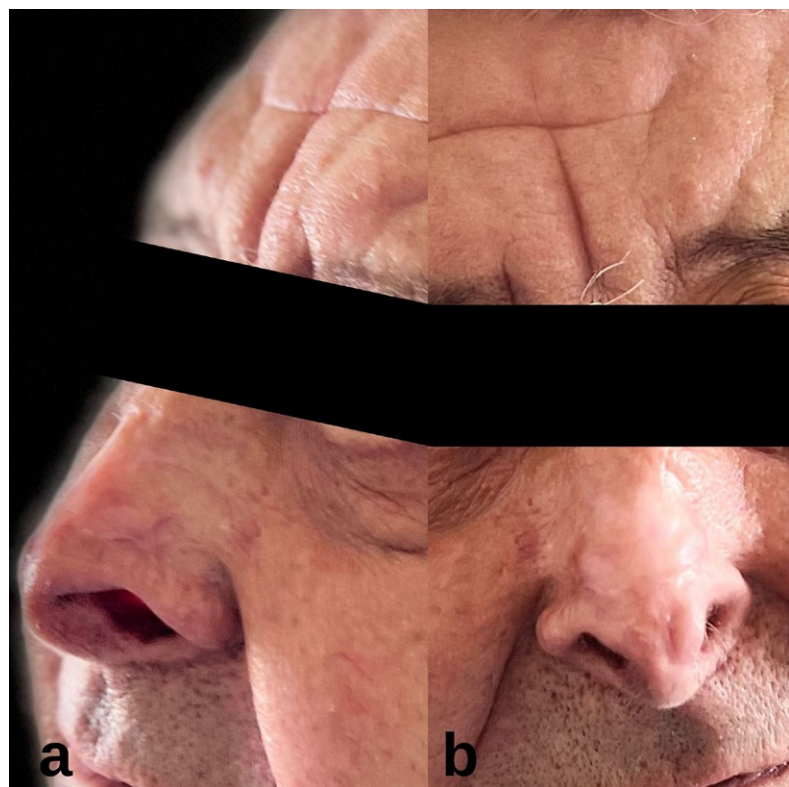


Figure 9. Clinical appearance at 8 months following surgical treatment (a, b). Postoperative images demonstrate stable long-term healing with a satisfactory cosmetic outcome.

Discussion

Surgery remains the treatment of choice for advanced rhinophyma, as medical therapy is ineffective once significant tissue hypertrophy and fibrosis have developed. Different surgical techniques have been described, including scalpel excision, electrosurgery, laser resurfacing, dermabrasion, radiofrequency surgery, and coblation, used alone or in combination depending on disease severity and patient factors (Bogetti et al. 2002; Curnier and Choudhary 2002; González et al. 2018). Cold steel excision allows rapid debulking but is associated with substantial intraoperative bleeding and limited hemostatic control. Laser techniques provide good precision and hemostasis but may be time-consuming in giant rhinophyma and carry a risk of thermal injury and delayed healing, particularly in patients with impaired wound repair (Janis and Harrison 2014). Dermabrasion is mainly suitable for contour refinement and is insufficient as a primary method in advanced cases.

Electrosurgery offers effective tissue reduction with reliable hemostasis, while coblation enables low-temperature tissue ablation with minimal collateral thermal damage and reduced bleeding. Coblation alone, however, may be inadequate for removing excessive tissue volume in giant rhinophyma.

In the present case, poorly controlled diabetes mellitus and arterial hypertension increased the risk of bleeding, infection, and delayed wound healing (Guo and Dipietro 2010). Therefore, a surgical strategy focusing on hemostasis, preservation of viable dermis, and avoidance of reconstructive flaps was essential. The combined use of electrosurgery for efficient debulking and coblation for precise contouring and margin control allowed safe removal of the hypertrophic tissue while preserving nasal architecture.

This approach minimized thermal injury, promoted spontaneous epithelialization, and yielded satisfactory functional and aesthetic outcomes without postoperative complications. In high-risk patients with advanced rhinophyma, a combined electrosurgical and coblation technique represents a safe and effective option that balances efficiency with optimal healing.

Conclusion

Rhinophyma is an advanced form of rosacea marked by progressive hypertrophy and deformation of the nasal tissues, leading to functional impairment and psychosocial distress (Two et al. 2015). Surgery remains the best treatment in advanced cases (Curnier and Choudhary 2002). Modern techniques such as electrosurgery, laser resurfacing, coblation, and dermabrasion offer effective tissue reduction, improved hemostasis, favorable aesthetic outcomes, and faster recovery (Madan et al. 2009; Husein-ElAhmed and Armijo-Lozano 2013; Wikström and Lapins 2018). A combined surgical approach may be particularly advantageous in high-risk patients, such as those with diabetes, by minimizing bleeding, tissue damage, and postoperative complications.

Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statements

The authors declared that no clinical trials were used in the present study.

The authors declared that no experiments on humans or human tissues were performed for the present study.

Informed consent from the humans, donors or donors' representatives: We obtain permission from the patient to share before and after pictures as results.

The authors declared that no experiments on animals were performed for the present study.

The authors declared that no commercially available immortalised human and animal cell lines were used in the present study.

Artificial Intelligence (AI) use

The authors accept full responsibility for the content of the manuscript, including the disclosure of any use of AI.

No AI tools were used in the preparation of this manuscript.

Funding

No funding was reported.

Author contributions

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Data availability

All of the data that support the findings of this study are available in the main text.

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