

High-Frequency Electrosurgery for Rhinophyma: A Three-Case Series

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Abstract

Rhinophyma is a progressive dermatologic condition characterized by hypertrophy of sebaceous glands and connective tissue, leading to nasal deformity and significant psychosocial impact. We present three male patients with rhinophyma treated using high-frequency electrosurgery. All patients presented with progressive nasal enlargement causing cosmetic concern, and one case was associated with inflammatory lesions and discharge. High-frequency electrosurgery was performed under local anesthesia using a radiofrequency device, enabling precise tissue debulking with simultaneous coagulation. Postoperative healing was achieved within 2–4 weeks in all patients, with no major complications. At follow-up, all patients demonstrated satisfactory cosmetic outcomes, and only one patient developed minimal scarring that did not affect overall satisfaction. High-frequency electrosurgery provided effective removal of hypertrophic tissue with minimal collateral damage and rapid recovery. These findings suggest that high-frequency electrosurgery appears to be a practical, efficient, and relatively cost-effective treatment option in selected patients with rhinophyma. Further studies with larger patient groups and longer follow-up periods are needed to better define long-term outcomes and recurrence rates.

Keywords: Dermatologic surgical procedures, electrosurgery, radiofrequency, rhinophyma, rosacea

INTRODUCTION

Rhinophyma is a disfiguring condition characterized by progressive hypertrophy of the sebaceous glands and connective tissue of the nose and is considered an advanced stage of rosacea.¹ In addition to functional impairment, rhinophyma may cause significant psychosocial distress due to visible facial deformity.²

Various treatment options have been described for advanced rhinophyma, including dermabrasion, laser therapy, surgical excision, and electrosurgery.³ High-frequency electrosurgery enables simultaneous cutting and coagulation with minimal collateral tissue injury and may provide rapid wound healing with a low-risk of scarring.⁴

In this study, we report three patients with rhinophyma who were successfully treated with high-frequency electrosurgery.

Although high-frequency electrosurgery has previously been described as a treatment modality for rhinophyma, reports detailing procedural parameters, postoperative management, and short-term clinical outcomes remain limited. The present case series aims to contribute additional practical clinical experience regarding the reproducibility, safety, and cosmetic outcomes of this technique.

CASE REPORT

Three male patients with rhinophyma were treated with high-frequency electrosurgery using a Surgitron FFPF EMC RF Energy Source (3.8 MHz; Ellman International, Hicksville, NY, USA) under an infraorbital nerve block and local infiltrative anesthesia. All procedures were performed

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under local infiltrative anesthesia using 20 mg/mL lidocaine hydrochloride and 0.0125 mg/mL epinephrine (Jetokain®, ADEKA, Türkiye).

Procedures were performed in the cutting/coagulation mode, using power settings between 2 and 5, according to tissue thickness and intraoperative response. Hypertrophic tissue was gradually debulked in multiple passes until the desired nasal contour was achieved, while preserving the pilosebaceous units to facilitate spontaneous re-epithelialization and maintaining the underlying nasal framework. Tissue removal was performed conservatively to the level of the sebaceous gland units, while preserving the underlying nasal cartilage and contour. Procedure duration ranged from 30 to 45 minutes, and all procedures were performed by the same operator. Hemostasis was achieved using electrocoagulation with a ball electrode.

Postoperative care included daily dressing changes with topical mupirocin ointment for two weeks and oral paracetamol (500 mg twice daily) for one week. Complete epithelialization occurred within 2–4 weeks.

Cosmetic outcomes were evaluated retrospectively based on physician assessment, serial photographic comparison, and patient-reported satisfaction.

A 59-year-old male presented with progressive nasal enlargement of five years' duration and increased nasal discharge over the preceding four months. He denied facial pain, epistaxis, or systemic symptoms and reported a 40-pack-year smoking history.

Dermatological examination revealed a markedly enlarged, bulbous nose with inflammatory lesions and purulent discharge (Figure 1). The patient reported significant psychosocial distress due to the cosmetic deformity.

Topical metronidazole therapy improved pustules and discharge. However, nasal hypertrophy persisted, and high-frequency electrosurgery was performed.

The postoperative course was uneventful (Figure 2). During short-term follow-up, minimal scarring developed at the nasal tip, but it did not require additional treatment or significantly affect cosmetic satisfaction.

A 66-year-old male presented with a 20-year history of progressive enlargement of the nasal tip, causing cosmetic concern. He denied pain, discharge, or nasal obstruction.

Physical examination demonstrated hypertrophy of the distal nasal soft tissues with a characteristic rhinophymatous appearance without ulceration or signs of infection (Figure 3).

Following routine preoperative evaluation, high-frequency electrosurgery was performed using the same technique. The postoperative course was uneventful, with a favorable cosmetic outcome and no complications (Figure 4).

An 80-year-old male presented with progressive enlargement and erythema of the nasal tip, accompanied by acneiform lesions. He reported cosmetic dissatisfaction without pain or nasal obstruction.

His medical history was notable for type 2 diabetes mellitus, treated with metformin, and a rhinophyma surgery performed five years earlier. Dermatological examination revealed nodular thickening of the nasal tip with widened follicular openings and lobulated surface changes consistent with recurrent rhinophyma (Figure 5).

High-frequency electrosurgery was performed using the same technique. Preoperative electrocardiography demonstrated normal sinus rhythm without contraindications to the procedure. The postoperative course was uncomplicated,



Figure 1. Severe rhinophyma presenting with marked bulbous enlargement of the nose, inflammatory lesions, and purulent discharge before treatment

and a clinically acceptable cosmetic outcome was achieved (Figure 6).

All patients tolerated the procedure well, and no intraoperative complications were observed. Postoperative care included topical mupirocin therapy and closed dressings during the first two weeks. Complete epithelialization occurred within

2–4 weeks in all patients. At the 3- and 6-month follow-up visits, one patient developed minimal scarring; however, this did not significantly affect cosmetic satisfaction. No other complications were observed, and no recurrence was detected during short-term follow-up.



Figure 2. Postoperative appearance demonstrating significant reduction in nasal volume and improved contour following high-frequency electrosurgery

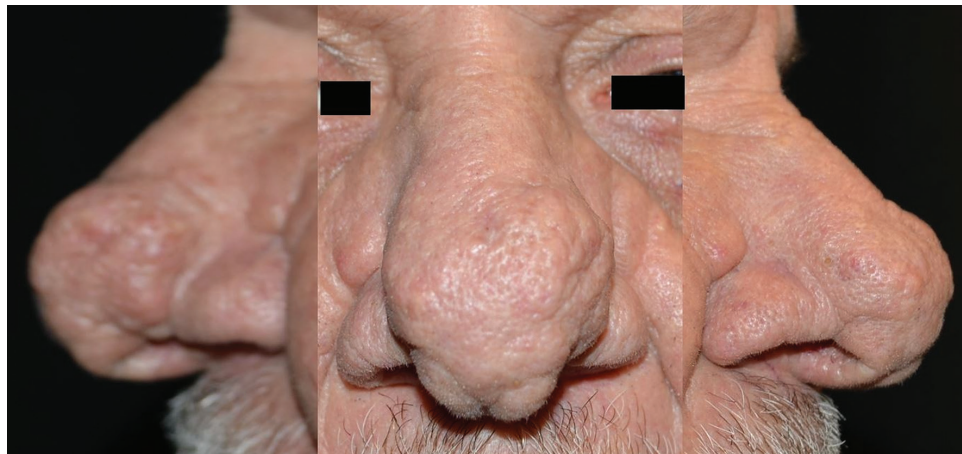


Figure 3. Moderate rhinophyma characterized by hypertrophy of the nasal tip without ulceration or secondary infection



Figure 4. Postoperative result showing favorable cosmetic outcome and restoration of nasal contour



Figure 5. Recurrent rhinophyma with nodular thickening, widened follicular openings, and lobulated surface changes



Figure 6. Postoperative appearance showing improved nasal contour after electrosurgical debulking

DISCUSSION

Rhinophyma is a chronic disfiguring condition that may cause significant psychosocial burden and often requires procedural treatment in advanced stages.^{1,2} Various surgical techniques have been described for the treatment of rhinophyma, including scalpel excision, dermabrasion, laser ablation, and high-frequency electrosurgery.³

Compared with CO₂ laser therapy, high-frequency electrosurgery may be a more cost-effective and accessible treatment option while providing satisfactory bleeding control and contour restoration.³ The technique enables simultaneous tissue cutting and coagulation, thereby improving hemostasis, reducing intraoperative bleeding, and promoting rapid wound healing with minimal collateral thermal injury.⁴ However, the procedure remains operator-dependent, and excessive

tissue removal may result in contour irregularities, scarring, pigmentary alteration, or thermal injury.⁴

Previous studies have reported favorable outcomes with high-frequency electrosurgery for rhinophyma treatment.⁵ Consistent with these reports, our patients demonstrated rapid epithelialization and favorable cosmetic outcomes, with minimal complications during short-term follow-up. Cosmetic outcomes were evaluated retrospectively based on physician assessment, serial photographic comparison, and patient-reported satisfaction. One patient developed minimal scarring at the nasal tip that did not significantly affect cosmetic satisfaction, and no recurrence was observed during short-term follow-up.

Another advantage of electrosurgery is its relatively low cost compared with laser-based therapies.⁶ Nevertheless, this study

has several limitations, including a small sample size; lack of a control group; retrospective, descriptive case-series design; short follow-up duration; lack of standardized measures of severity and cosmetic outcomes, and lack of histopathological evaluation, because occult malignancy may rarely coexist with rhinophyma.

CONCLUSION

High-frequency electrosurgery appears to be a practical, efficient, and relatively cost-effective treatment option in selected patients with rhinophyma. Further studies with larger patient groups and longer follow-up periods are needed to better define long-term outcomes and recurrence rates. Prospective studies with standardized outcome measures are needed to further validate these findings.

Footnotes

Informed Consent: Written informed consent was obtained from all patients for publication of the clinical images.

Authorship Contributions

Surgical and Medical Practices: E.K., Ş.Y., Concept: E.K., Ş.Y., S.B., Design: E.K., Ş.Y., S.B., Data Collection or Processing: E.K., G.Y., Ş.Y., S.B., Analysis or Interpretation: G.Y., Ş.Y., S.B., Literature Search: G.Y., S.B., Writing: E.K., G.Y., S.B.

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