

Management of Rhinophyma with Radio Frequency: Case Series of Three Patients

Swagata A. Tambe, Chitra S. Nayak, Priyal Gala, Uddhao Zambare, Amol Nagargoje
Department of Dermatology, Topiwala National Medical College and BYL Nair Hospital, Mumbai, India

Abstract

Rhinophyma is the most common form of phymatous rosacea, typically seen in men. It may appear *de novo* (without preceding inflammatory changes) or occur in patients with preexisting papulopustular rosacea. It is characterized by slow, bulbous, reddish-purple, painless enlargement of lower two-third of nose with rugose peau d'orange surface resulting from the enlargement of the sebaceous glands and subcutaneous tissue, which does not resolve spontaneously. Though benign, it causes lot of cosmetic and psychological concern. Commonly used treatment modalities include debulking by surgical excision, electrosurgery, carbon dioxide laser ablation, cryosurgery, or dermabrasion. Here we report a case series of three patients with Grade 3 rosacea as per National Rosacea Society grading, treated by radio frequency with good improvement.

Keywords: Radio frequency, rhinophyma, rosacea

Key message: Radio frequency is a fast, easy to handle, low-cost, and efficient treatment for disfiguring rhinophymas with insignificant thermal damage, minimal pain, fast wound healing, and good results with minimal scarring.

INTRODUCTION

Rhinophyma, first described in 1845 by Ferdinand von Hebra, represents the most severe expression of the final stage of acne rosacea. It is characterized by a benign, slowly growing enlargement of the lower third of the nose with irregular thickening and grotesque nodular hypertrophy of nasal skin, although the bony and the cartilaginous framework of the nose are unaffected. Occasionally, extremely hypertrophic lesion can cause functional impairment in terms of nasal airway obstruction. Persistent intraoperative bleeding because of the exceptional vascularity of the nose and avoidance of thermal injury to cartilage (when using thermal modalities) are of concern while treating this condition with the available surgical modalities.

CASE HISTORY

Case 1

A 57-year-old man presented with asymptomatic lobulated swellings hanging from both the alae of nose since 8 years, preceded by redness of malar area and photosensitivity.

Few years after resolution of redness, the patient noticed lobulated swellings over both the alae of nose with bulbous enlargement of the tip of the nose. These swellings gradually increased in size leading to distortion of contour of nose. Cutaneous examination revealed soft to firm lobular swelling with irregular surface over both alae of nose with bulbous enlargement of the tip of the nose [Figure 1A–C].

Case 2

A 46-year-old man presented with lobular swelling on the tip of the nose with cosmetic disfigurement since 4 years. The patient did not give history suggestive of redness on face, inflammatory lesions on the face, or photosensitivity. Cutaneous examination revealed bulbous enlargement of tip and under surface of nose with peau d'orange

Address for correspondence: Dr. Swagata Tambe,
DNB Dermatology, Assistant Professor,
19/558, Udyan Society, Nehru Nagar, Kurla East,
Mumbai 24.
Contact No: 91-9769381308, 022-25226141
E-mail: swagatatambe@gmail.com

Access this article online

Quick Response Code:



Website:
www.jcasonline.com

DOI:
10.4103/JCAS.JCAS_16_18

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Tambe SA, Nayak CS, Gala P, Zambare U, Nagargoje A. Management of rhinophyma with radio frequency: Case series of three patients. *J Cutan Aesthet Surg* 2019;12:136-40.

appearance and dilated follicular openings extruding sebum on pressure [Figure 2A–C].

Case 3

A 47-year-old man presented with three nodular swellings on the dorsum of the nose, causing cosmetic disfigurement since 6 years. No history of photosensitivity

or inflammatory lesions before the appearance of nodular swellings was reported. Cutaneous examination revealed three lobulated nodules on the dorsum of nose extending onto the bridge and apex of the nose [Figure 3A–C].

All three patients had Grade 3 rosacea as per the National Rosacea Society (NRS) grading. Skin biopsy in

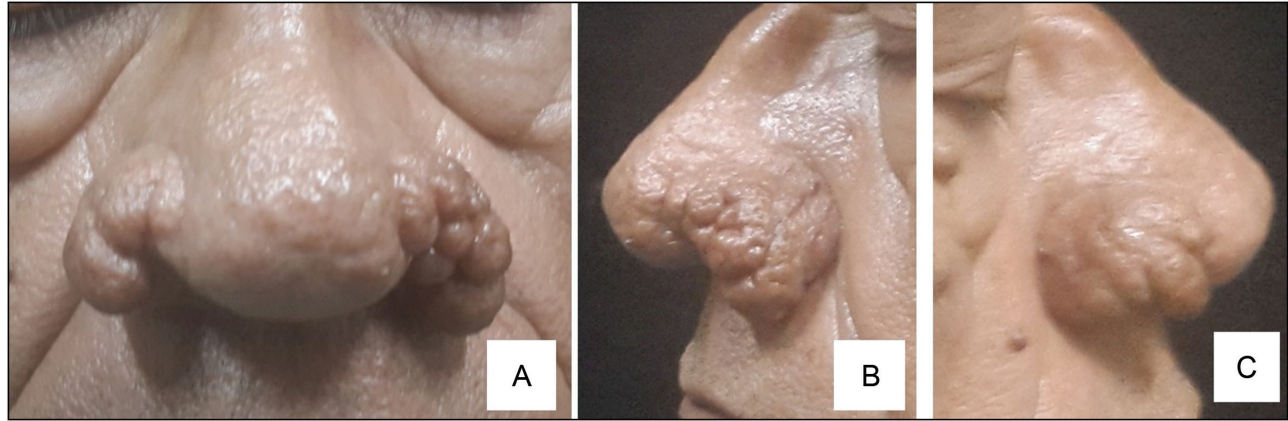


Figure 1: Case 1: soft to firm lobular swelling with irregular surface over both alae of nose with bulbous enlargement of the tip of the nose, frontal view (A), left lateral view (B) and right lateral view (C)

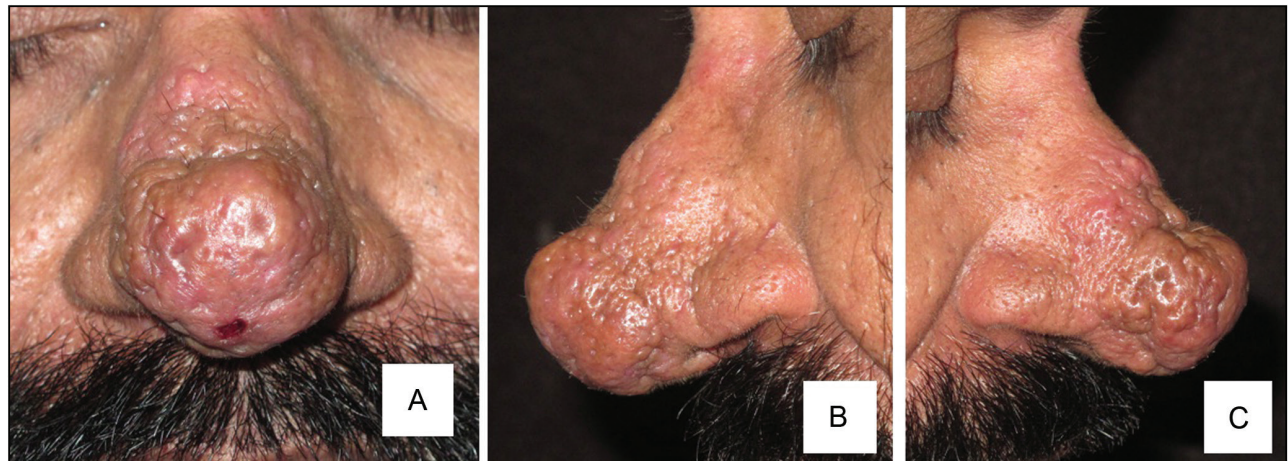


Figure 2: Case 2: bulbous enlargement of tip and under surface of nose with peau d'orange appearance and dilated follicular openings, frontal view (A), left lateral view (B) and right lateral view (C)



Figure 3: Case 3: three lobulated nodules on the dorsum of nose extending onto the bridge and apex of the nose, frontal view (A), left lateral view (B) and right lateral view (C)

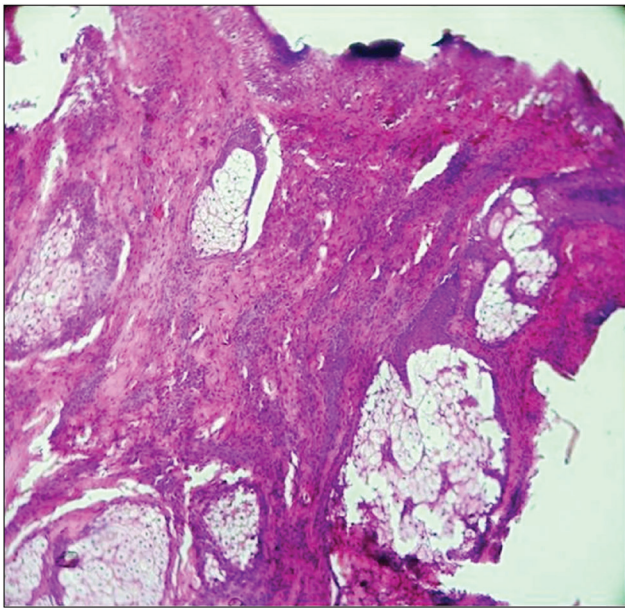


Figure 4: Skin biopsy showed sebaceous gland hyperplasia with diffuse dermal fibrosis suggestive of rhinophyma (Hematoxylin and Eosin stain, x100)

them revealed sebaceous gland hyperplasia with diffuse dermal fibrosis confirming the diagnosis of rhinophyma [Figure 4].

They were treated with monopolar radio frequency (RF). Procedures were performed under local anesthesia with 2% lignocaine and adrenaline solution. Area was prepared with povidone-iodine solution, and radio-frequency unit was used in cut/coagulate blended waveform mode at power control dial between 2 and 3 with an 8-mm loop. Procedure was carried out in two stages. In the first stage of debulking, substantial amount of tissue was removed and later in contouring stage, normal anatomical shape ensuring symmetry was recreated. Postoperatively, the patients were prescribed oral and topical antibiotics with collagen dressing. All three patients showed good results with minimal scarring [Figures 5–7].

DISCUSSION

Rhinophyma occurs almost exclusively in middle aged to elderly men with a male/female ratio of 5:1 to 30:1.^[1] Clinically, it may show a combination of features including erythema, telangiectasia, thickening, and coarsening of the nasal skin texture. Hypertrophy of sebaceous glands results in tumor-like expansion of the nasal tissue. Inflammation and fibrosis ensue, and patients may complain of an offensive sebaceous discharge from dilated pores (pits). It can result in localized or generalized deformity of the nose, which often causes cosmetic embarrassment.

NRS has described three grades of rosacea, which are as follows: Grade 1: patulous follicles but no contour changes, Grade 2: change in contour without a nodular



Figure 5: Case 1: improvement after two sessions of two RF

component, and Grade 3: change in contour with a nodular component.^[2]

Medical treatment options for rhinophyma are very limited. Isotretinoin suppresses sebum secretion and causes minimal reduction in rhinophyma. Surgical treatments include partial- or full-thickness excision with or without skin grafting or flap reconstruction, dermabrasion, and excision with heated scalpels and loops. Other options are cryosurgery, electrosurgery, and ultrasonic scalpel. Carbon dioxide (CO₂), erbium:yttrium–aluminum–garnet, and argon lasers have been used in the management of rhinophyma.^[3]

Efficacy and safety of various treatment modalities is variable, review of recent literature suggests a combination of these modalities gives excellent cosmetic outcome.

Deep excision facilitates complete removal of diseased tissue that ultimately reduces the risk of recurrence in contrast to commonly applied methods relying predominantly on superficial lesion removal with



Figure 6: Case 2: improvement after 3 months

subsequent spontaneous reepithelialization. The application of a dermal substitute to create a neodermis covered by split-thickness autologous skin grafting may serve as a functionally and aesthetically appropriate model without requiring full-thickness skin grafts or local flaps.^[4]

Novel approach for radical debulking of rhinophyma termed “the subunit method,” which addresses three fundamental problems of the rhinophymatous nose, that is, hypertrophic sebaceous tissues, excess skin (from the “tissue expander” effect), and destruction of support, has been used in five patients with good outcome.^[5]

Debulking surgeries can be combined with fractional CO₂ laser^[6] or electrosurgery.^[7]

Rhinophyma has also been treated with combination of dermabrasion, decortication, and application of fibrin glue, which has given very good results.^[8]



Figure 7: Case 3: improvement after 3 months

CO₂ laser can be used in both ablative and fractional mode in the treatment of rhinophyma.^[3]

Ablative CO₂ laser has been used for debulking surgery. It is a relatively safe and precise surgical tool for rhinophyma ablation, healing process is quick without excessive scarring. Unfortunately, “dry field” conditions are not always possible to achieve during operation because of the limited coagulative properties of the CO₂ laser toward dilated blood vessels. In advanced stages of rhinophyma to increase safety of the procedure, several sessions of

the laser therapy might be necessary to remove all the hypertrophic tissues.^[9,10] Side effects are rare and include pain during procedure, hypopigmentation, and scarring.^[3]

RF uses high-frequency current to achieve a bloodless field in the treatment of rhinophyma, which enables efficient and quick removal of hypertrophied tissue and an essentially pain-free recovery.^[11,12] It uses a low-voltage slightly damped current that vaporizes the tissue with minimal thermal damage,^[13] which is well suited for the outpatient setting and allows the surgeon to clearly see and control the tissue destruction. It also enables preservation of the lower part of the pilosebaceous unit giving a good cosmetic outcome.

CO₂ laser and RF treatment have been used in the management of rhinophyma with comparable efficacy. RF is less expensive than laser treatments and takes half the time of laser.^[14] The excision of hypertrophic tissue by RF is performed in a bloodless manner and can be repeated several times if necessary.^[15]

Overabundant removal of tissue by any of these methods may cause cartilage exposure and damage.

All patients in our case series achieved a good aesthetic outcome, which was defined as a near-to-normal nasal contour with absent or minimal scarring.

RF is a fast, easy to handle, low-cost, and efficient treatment of disfiguring rhinophymas with insignificant thermal damage, minimal pain, fast wound healing, and good results with minimal scarring.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Wiemer DR. Rhinophyma. *Clin Plast Surg* 1987;14:357-65.
2. Danby FW. Rosacea, acne rosacea, and actinic telangiectasia. *J Am Acad Dermatol* 2005;52:539-40.
3. Madan V, Ferguson JE, August PJ. Carbon dioxide laser treatment of rhinophyma: a review of 124 patients. *Br J Dermatol* 2009;161:814-8.
4. Selig HF, Lumenta DB, Kamolz LP. The surgical treatment of rhinophyma-complete excision and single-step reconstruction by use of a collagen-elastin matrix and an autologous non-meshed split-thickness skin graft. *Int J Surg Case Rep* 2013;4:200-3.
5. Hassanein AH, Caterson EJ, Erdmann-Sager J, Pribaz JJ. The subunit method: a novel excisional approach for rhinophyma. *J Am Acad Dermatol* 2016;74:1276-8.
6. Kassir R, Gilbreath J, Sajjadian A. Combination surgical excision and fractional carbon dioxide laser for treatment of rhinophyma. *World J Plast Surg* 2012;1:36-40.
7. Kahn SL, Podjasek JO, Dimitropoulos VA, Brown CW Jr. Excisional debulking and electrosurgery of otophyma and rhinophyma. *Dermatol Surg* 2016;42:137-9.
8. Clarós P, Sarr MC, Nyada FB, Clarós A. Rhinophyma: our experience based on a series of 12 cases. *Eur Ann Otorhinolaryngol Head Neck Dis* 2018;135:17-20.
9. Olszewska E, Sieškiewicz A, Łuczaj J, Walenczak I, Rogowski M. [CO₂ laser treatment of rhinophyma]. *Otolaryngol Pol* 2008;62:628-30.
10. Bassi A, Campolmi P, Dindelli M, Brusolino N, Conti R, Cannarozzo G, *et al.* Laser surgery in rhinophyma. *G Ital Dermatol Venereol* 2016;151:9-16.
11. Aferzon M, Millman B. Excision of rhinophyma with high-frequency electrosurgery. *Dermatol Surg* 2002;28:735-8.
12. Erisir F, Isildak H, Hacıyev Y. Management of mild to moderate rhinophyma with a radiofrequency. *J Craniofac Surg* 2009;20:455-6.
13. Naranjo R. Elecrocirugia. In: Camacho F, De Dulanto F, editors. *Cirugia Dermatologica*. Madrid, Spain: Grupo Aula Medica; 1995. pp. 253-9.
14. Greenbaum SS, Krull EA, Watnick K. Comparison of CO₂ laser and electrosurgery in the treatment of rhinophyma. *J Am Acad Dermatol* 1988;18:363-8.
15. Nelson B, Fuciarelli K. Surgical management of rhinophyma. *Cutis* 1998;61:313-6.