

## CASE REPORT

# Management of Rhinophyma

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*Cosmetic surgeons are often asked to evaluate and treat a host of different dermatologic diseases. Some conditions may fall outside the realm of what they see daily in their practice, as they are not very common. We were recently presented with a patient with rhinophyma, which is considered the most severe expression of acne rosacea. In its severe form, rhinophyma is quite disfiguring and can lead to significant mental anguish, depression, and social reclusiveness. The condition is stigmatized by such lay terms as whisky nose, rum nose, or potato nose. This article reviews the pathophysiology, clinical presentations, and medical and surgical management of rhinophyma.*

Grossly, rhinophyma is characterized by a tuberous and nodular hypertrophy of the nose, especially in its lower half. It varies in incidence based on sex and race. Although rosacea is much more common in women, rhinophyma occurs predominantly in men in their fifth to seventh decades of life. It is hypothesized that this is secondary to androgenic influences.<sup>1,2</sup> The disease is quite common in persons of Irish and English descent, but it is rarely seen in Asians or African Americans.<sup>1</sup> There are some reports of coincidental malignancy, especially occult basal cell carcinoma, discovered at the time of surgery.<sup>2-4</sup> There is very little statistical evidence to support association between alcohol and rhinophyma. The similarities between the facial telangiectasia of alcoholism and the facial flushing associated with rhinophyma or rosacea often cause confusion among the public leading to the stigma of this disease.<sup>3</sup>

### Etiology

Numerous studies have supported the spectrum of progression of rosacea to acne rosacea and the final

manifestation of rhinophyma.<sup>5-7</sup> Virchow is the first to have reported the correlation between acne rosacea and rhinophyma in 1846.<sup>1</sup> Consequently, the medical therapy for rosacea, such as the use of antibiotics, is used as an adjunct to surgical intervention and to prevent future recurrence. Bacterial colonization of sebaceous units is routinely seen in rhinophyma; however, it is unclear if this is an association or causation. Other inciting factors proposed have been the presence of the skin mite *Demodex folliculorum*, vitamin deficiency, stress, and increased activity of the 5- $\alpha$  reductase hormone.<sup>1,2</sup> Although alcohol and caffeine cause facial flushing secondary to their vasoactive effects, rosacea is the only confirmed etiology for rhinophyma.

### Pathology

In rhinophyma the skin is irregularly thickened. This is attributable to soft-tissue hyperplasia secondary to enlarged sebaceous glands and lymphedema. The follicles are prominent, and foul-smelling sebum can be expressed from them. Hypervascularity is the hallmark of the disease histologically and is responsible for the facial flushing.<sup>2</sup> There is an increase in sebaceous gland population. Inflammation leads to proliferation of fibrous tissue, plugged sebaceous ducts and their dilation, and the eventual nodular appearance of the disease. Basal cell carcinoma, squamous cell carcinoma, and sebaceous carcinoma can rarely be masked by the deformity of rhinophyma and have been found during biopsy of the specimen.<sup>2,8</sup> It is important to establish the diagnosis histopathologically as other entities such as angiosarcoma, sarcoidosis, or even metastatic lung cancer have been reported.<sup>4,8</sup>

### Case

A 67-year-old white man with a past medical history significant for hypertension, coronary artery disease, and rosacea presented to us with a chief concern of full-blown fungating rhinophymatous changes of his nose (Figure 1). He stated that he had been on

Received for publication May 2, 2011.

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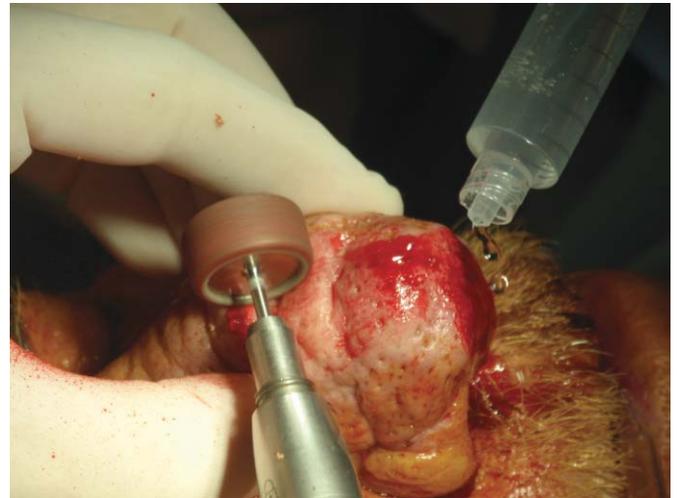
DOI: 10.5992/AJCS-D-11-00023.1



**Figure 1.** Preoperative frontal view, 67-year-old male with rhinophyma.

tetracycline for many years, which had allowed for chemical suppression of his disease. However, recently after having a 5-vessel coronary artery bypass graft, the patient was placed on coumadin. As tetracycline was interfering with the stability of his international normalized ratio values, it was discontinued. Patient stated that he immediately noted exacerbation of symptoms, and within a few months from the time of discontinuation of tetracycline, he developed the presenting deforming lesion of his nose. The patient had no evidence of airway compromise directly related to his condition. He denied any pain or bleeding. The patient, therefore, came to us for management of this problem.

On examination, the patient had an enlarged nasal tip and alae with erythema, dilated pores, and telangiectasias of the nose and cheeks. The nose was lobulated, uniformly firm in consistency, nonpulsatile, nontender, and devoid of ulceration.



**Figure 2.** Application of dermabradar and irrigation.

The patient received all preoperative laboratory workups and evaluations, and his care was coordinated with cardiology, hematology, and dermatology. His cardiologist discontinued the coumadin 5 days before the procedure. Instead, the patient was placed on subcutaneous heparin injections. The patient was instructed to take half the dose of the heparin the day before the surgery. Coagulation studies were within normal values on the day before the operation.

With the patient under intravenous sedation, the nose was infiltrated with lidocaine 1% with epinephrine 1:100,000 to achieve ring-block and minimize bleeding.

Starting with a no. 10 blade, superficial decortication was performed. Strict hemostasis was maintained to limit significant blood loss. This was achieved primarily with the use of electrocautery and epinephrine-soaked sponges. Next, tissue sculpting was performed tangentially with the use of a dermabradar (Figures 2 and 3).



**Figure 3.** Tissue sculpting performed with dermabradar.



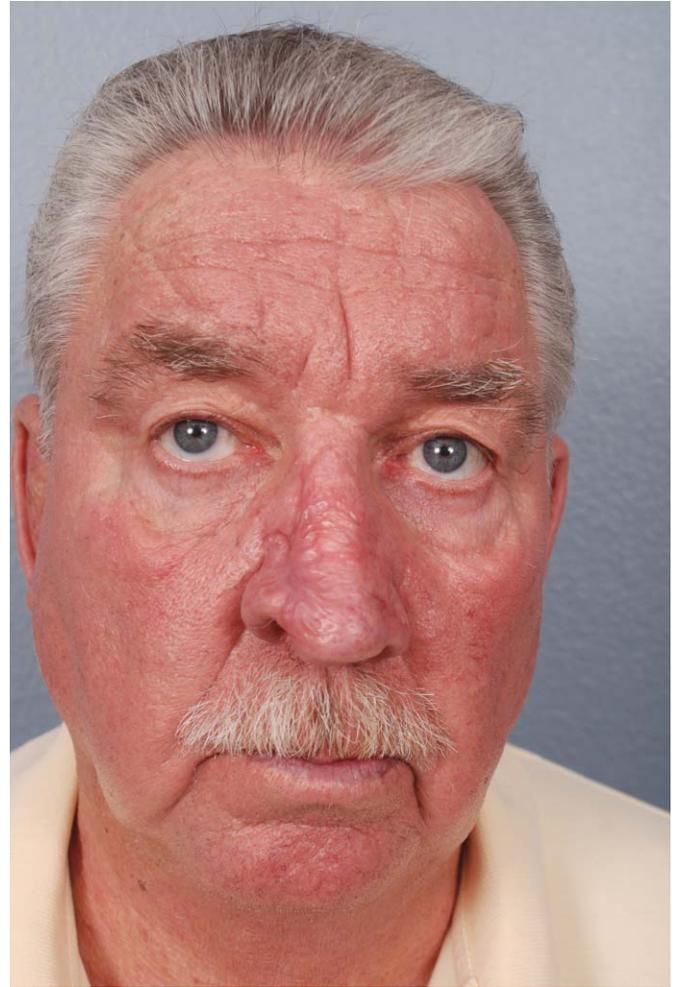
**Figure 4.** Immediately after dermabrasion and before the application of Aquaphor ointment.

At the end of the operation Aquaphor (petrolatum 41%, Beiersdorf Inc, Wilson, Conn) was applied to wounds. Bacitracin ointment and Xeroform (Petrolatum gauze; TycoHealthcare/Kendall, Mansfield, Mass) can be used alternatively. The patient was instructed to apply Aquaphor twice a day to keep the wound moist until epithelialization occurred (Figure 4). Healing was uneventful and was complete within 8 weeks with no complication (Figure 5). The patient is currently on tetracycline 500 mg twice a day for suppression.

Long-term follow-up evaluation yielded complete patient satisfaction without consideration for further reduction or scar modification. Options for cosmetic revision would include additional fractionated carbon dioxide laser, dermabrasion, full-thickness skin grafting, or median forehead flap reconstruction for complete tissue replacement.

### Discussion

Rhinophyma rarely regresses without intervention. Medical therapy is often used in conjunction with



**Figure 5.** Reepithelialization is complete at 8 weeks after the procedure.

surgery. Antibiotics such as metronidazole or tetracyclines, including doxycycline and minocycline, have been used to treat bacterial colonization or infection associated with plugged sebaceous ducts.<sup>5,7</sup> These antibiotics are also used postoperatively as prophylaxis to suppress the disease. The antibiotics are usually prescribed for 6 to 12 weeks, the duration and dose depending on the severity of the rosacea. Further courses are often needed as the antibiotics do not cure the disorder. Metronidazole cream or gel can be used intermittently or long term on its own for mild cases and in combination with oral antibiotics for more severe cases. Azelaic acid cream or lotion (Allergan, Irvine, Calif) is also effective, applied twice daily to affected areas.

The use of retinoids has been advocated to reduce the volume of sebaceous tissue. Oral isotretinoin (Accutane; Roche Pharmaceuticals, Nutley, NJ) at low doses has shown value for this purpose. Topical generic

tretinoin gel, on the other hand, while also effective, may lead to further skin irritation.<sup>1</sup> Calcineurin inhibitors, such as tacrolimus ointment and pimecrolimus cream, are reported to help some patients with rosacea.

Use of ionizing radiation has been reported in the literature, but it has mostly been abandoned out of the concern for promoting skin malignancies.<sup>9</sup>

Ultimate cure can only be achieved with surgery when the disease has progressed to rhinophyma.<sup>2,8</sup> A wide range of surgical approaches to rhinophyma has been described. These techniques all have dermaplaning and sculpting of the hypertrophied tissue in common.<sup>1,10</sup> The key element in all techniques is the preservation of the pilosebaceous appendages to allow for spontaneous reepithelialization. If rhinophyma is infiltrating and requires deep excision, then skin grafting or local flaps may be required for coverage. Surgical techniques include cold excision with a scalpel, the use of an ultrasonic knife,<sup>11</sup> cryosurgery with liquid nitrogen, electrocautery, and dermabrasion.<sup>10,12</sup> Most recently, ablative treatments with a carbon dioxide or Er:YAG laser have demonstrated good clinical outcomes with significantly less recovery time and adverse effects compared with traditional techniques.<sup>13,14</sup> Additionally, in treatment of skin redness and telangiectasia of rosacea, traditional treatment using diathermy or thermolysis systems have been superseded by less painful, safer, and more effective light therapies. These are more expensive modalities and include pulse-dye lasers, copper bromide, krypton and potassium-titanyl-phosphate lasers, and intense pulsed light systems.

Postablative measures are directed at hemostasis and wound healing. Human fibrin glue (Tissucol/Tisseel; Baxter Healthcare, Wetlake Village, Calif) can be sprayed onto the wound at the conclusion of operation to act as a dressing as well as to control bleeding. Postoperatively, Aquaphore, bacitracin, or Xeroform are applied to wound to help maintain moisture and to promote epithelialization.

### Conclusion

Proper knowledge of the pathophysiology and treatment modalities of rhinophyma, along with strict adherence to fundamentals of surgery, such as

hemostasis, should allow cosmetic surgeons to safely and effectively treat this disfiguring disease.

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