SKIN

SKINmages

The Off-Label Use of Isotretinoin for Treatment of Rhinophyma

Nicole E. Chin, BA[1], Robert S. Chin, BS[2], Andrea Hui Austin, MD[3]

[1] Loyola University Chicago Stritch School of Medicine, Maywood, IL
[2] Virginia Commonwealth University School of Medicine, Richmond, VA
[3] Bay Area Cosmetic Dermatology, San Francisco, CA

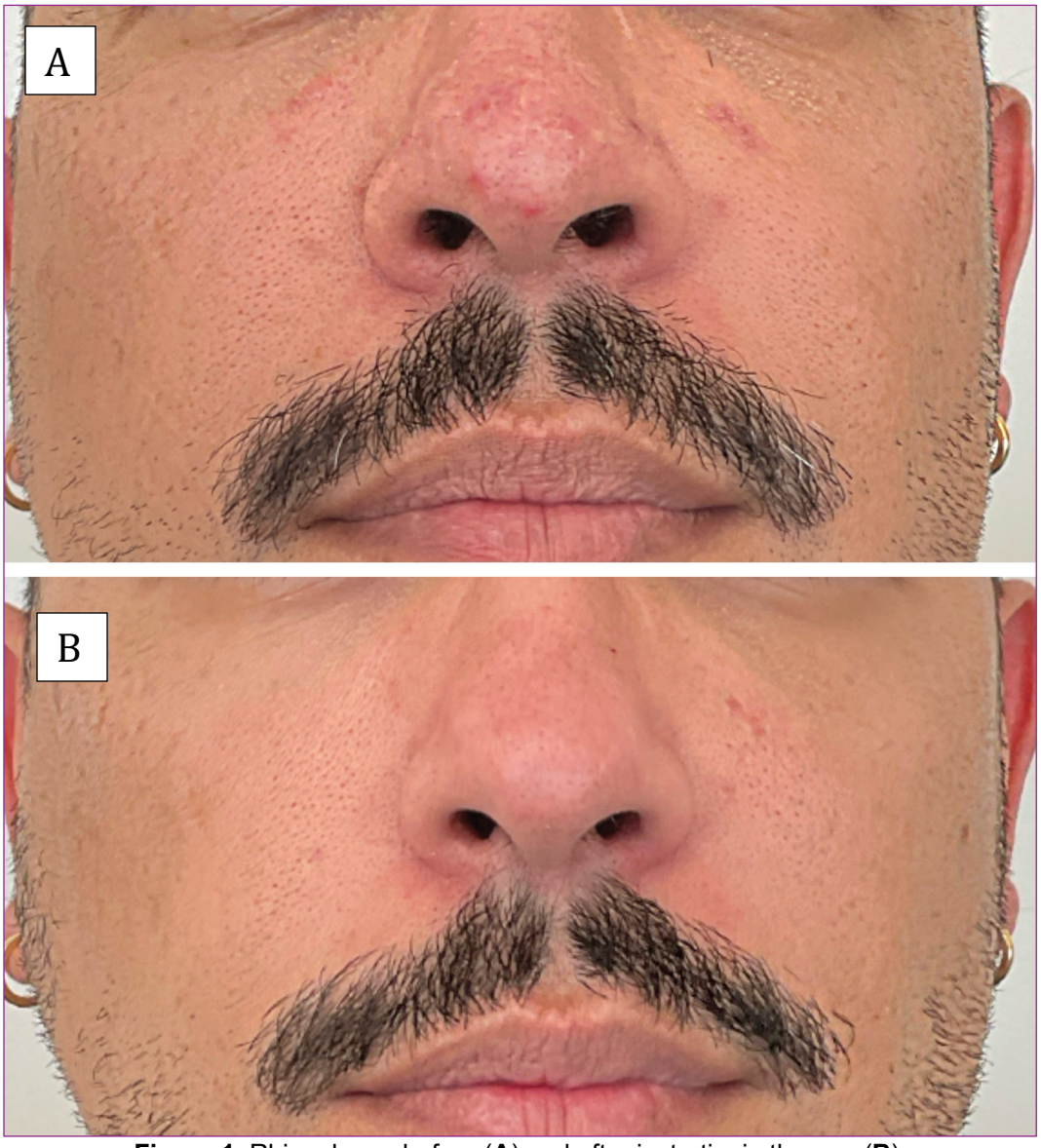

Figure 1. Rhinophyma before (**A**) and after isotretinoin therapy (**B**).

INTRODUCTION

Rhinophyma is a phenotypic subtype of rosacea, characterized by progressive thickening and distortion of the nasal tissue, often resulting in a bulbous and erythematous appearance of the nose. This condition can impact a patient's quality of life, as it is associated with decreased nasal patency, difficulty with nasal breathing, and reduced self-esteem.[1] Current treatment options for rhinophyma consist of topical treatments, CO2 and Erbium-YAG laser therapy, electroloop cautery, and dermabrasion. However, procedural treatments carry risks of scarring and dyspigmentation, and medical treatments often have limited impact on established rhinophyma.

The pathophysiology of rhinophyma is complex, involving inflammatory and vascular factors. It is believed that local vasodilation contributes to the characteristic symptoms. The initial vasodilation and increased presence of mast cells cause fluid leakage as well as pro-inflammatory symptoms in the dermal interstitium. Rhinophyma has also been associated with prominent sebaceous hyperplasia which manifests as nasal tissue enlargement and deformity.[2,3]

Isotretinoin, a retinoid derivative of vitamin A, reduces sebaceous gland activity, decreases sebum production, and normalizes keratinization. Current research highlights a relationship between sebaceous gland activity and the inflammatory characteristics of rosacea.[4] Given isotretinoin's mechanism of action, we hypothesized that isotretinoin could reduce sebaceous hyperplasia and inflammation associated with rosacea, potentially improving early rhinophymatous change.

CASE REPORT

A 39-year-old man presented with a slowly enlarging nose, which he noticed worsening over the past few years. He had a past medical history of papulopustular rosacea, which was previously managed well with a twice-daily topical rosacea combination gel containing ivermectin 1%, metronidazole 1%, and niacinamide 4% (Aveidaoxia, SKNV, Pompano Beach, FL). On comparison photos **(Figure 1)**, his inferior nasal tissues, including the bilateral nasal ala and tip, had significantly expanded and reddened over the past two years. We prescribed oral isotretinoin 20mg, once a week. Within four weeks, his nasal tissues significantly decreased in size and redness. Notably, almost all his facial rosacea papules and pustules had resolved. The patient was pleased with this outcome and plans to continue low-dose once-weekly oral isotretinoin for the foreseeable future.

DISCUSSION

The results from this case suggest isotretinoin as a possible alternative to topical treatments for severe rosacea and related subset conditions such as rhinophyma. The dosage of 20 mg prevents the risk of potential side effects commonly seen in patients taking isotretinoin for severe acne cases. The low dose (20 mg weekly) is expected to reduce the likelihood of systemic adverse effects typically associated with higher isotretinoin doses used for acne, and its once-weekly schedule may improve patient compliance among those initially hesitant to pursue isotretinoin for an off-label treatment.

By targeting the mechanisms present in rosacea, we were also able to target the rhinophyma subset leading to benefits in both

conditions. Continuous photographic monitoring allowed us to acknowledge the need for an altered approach to his treatment allowing for a timely intervention with this patient.

CONCLUSION

Low-dose isotretinoin may represent a cost-effective and lower risk option for patients seeking alternatives to procedural rhinophyma treatments. Current literature is scarce on the usage of isotretinoin for prevention of rosacea-associated conditions such as rhinophyma. However, this case provides a hopeful direction in expanding upon the benefits of isotretinoin.

Conflict of Interest Disclosures: None

Funding: None

Corresponding Author:
Andrea Hui Austin, MD
Bay Area Cosmetic Dermatology
2299 Post St. #312
San Francisco, CA 94115
Phone: 415-292-6350
Email: info@weloveskin.com

References:

1. Fink C, Lackey J, Grande DJ. Rhinophyma: A Treatment Review. *Dermatol Surg*. 2018;44(2):275-282. doi:10.1097/DSS.0000000000001406
2. Aloi F, Tomasini C, Soro E, Pippione M. The clinicopathologic spectrum of rhinophyma. *J Am Acad Dermatol*. 2000;42(3):468-472. doi:10.1016/S0190-9622(00)90220-2
3. Sadick H, Goepel B, Bersch C, Goessler U, Hoermann K, Riedel F. Rhinophyma: Diagnosis and Treatment Options for a Disfiguring Tumor of the Nose. *Ann Plast Surg*. 2008;61(1):114-120. doi:10.1097/SAP.0b013e31815f12d2
4. Lee SH, Lee SB, Heo JH, et al. Sebaceous glands participate in the inflammation of rosacea. *J Eur Acad Dermatol Venereol*. 2020;34(3). doi:10.1111/jdv.16055