BRIEF ARTICLES

Isotretinoin induced nail fold pyogenic granuloma resolution with combination therapy: A case report and review of the literature.

Jonathan G. Bellew, DO[1,2,3]; Chad Taylor, DO[3]; Jaldeep Daulat, DO[3]; Vernon T. Mackey, DO[1]

[1]Advanced Desert Dermatology
[2]Midwestern University
[3]Mohave Centers for Dermatology and Plastic Surgery

ABSTRACT

Pyogenic granulomas are vascular hyperplasias presenting as red papules, polyps, or nodules on the gingiva, fingers, lips, face and tongue of children and young adults. Most commonly they are associated with trauma, but systemic retinoids have rarely been implicated as a causative factor in their appearance. We present a case of spontaneous eruption of multiple pyogenic granulomas of the bilateral peri-ungal fingers in an otherwise healthy adolescent male undergoing isotretinoin therapy for severe nodulocystic acne. These pyogenic granulomas did not resolve spontaneously with discontinuation of isotretinoin, or first line therapeutic modalities. Their resolution did occur with administration of intralesional steroids and ablation with silver nitrate.

INTRODUCTION

Pyogenic granulomas represent vascular hyperplasias of unknown etiology.[1] They are characterized by rapid growth with friability and associated pain. Morphologically they present as a solitary red papule, polyp, or nodule that frequently ulcerates and bleeds excessively with minor trauma. They may develop at any age but are more common in children and adolescents.[1] Although idiopathic, approximately one-third develop after trauma. Most common sites include the gingiva, fingers, lips, face and tongue.[2] Pyogenic granulomas have been reported in association with systemic retinoids,[3] indinavir, and epidermal growth factor receptor inhibitors. Other associations include fluctuating hormonal states such as during pregnancy or with oral contraceptive treatment.[1] We present a case of eruptive pyogenic granulomas of the peri-ungal fingers in an adolescent male undergoing systemic retinoid therapy for severe recalcitrant nodulocystic acne, highlighting this important but rarely reported adverse effect of systemic isotretinoin therapy.

CASE REPORT

A 15-year-old male presented to our dermatology clinic with multiple painful bright red papulonodules located at the dorsal surface of the distal portion of the peri-ungal third and fourth fingers extending from the hyponychium distally down through the nail grooves with extension proximally to the

Figure 1. Multiple painful papulonodules at the distal bilateral nail folds of the fingernails.

Figure 2. Pyogenic granulomas improving two weeks following discontinuation of isotretinoin therapy.

Figure 3. Resolution of pyogenic granulomas two months post discontinuation of isotretinoin and successful treatment with intralesional triamcinolone and topical silver nitrate.

bilateral portion of the nail walls (Figure 1). The lesions appeared abruptly and were enlarging over several weeks. Associated pain with easy bleeding on minor trauma was reported in the lesions. The patient denied significant trauma or prior contact with chemicals or allergens before the outbreak. His primary care provider initiated treatment with trimethoprim-sulfamethoxazole twice daily for two weeks. After the patient experienced no significant response to therapy, he was referred to our dermatology office for evaluation.

At the time of the peri-ungal eruption on the distal fingernails, the patient was undergoing isotretinoin therapy for severe nodulocystic acne with significant scarring. He was in his fifth month of isotretinoin therapy with a cumulative dose of 140 mg/kg. He began isotretinoin therapy at a dose of 40 mg daily (0.52 mg/kg/day) for the first month and his dose later increased to 80 mg daily (1.04 mg/kg/day). Prior to undergoing isotretinoin therapy the patient was treated for three months with topical benzoyl peroxide, tretinoin,
clindamycin, and oral doxycycline without clinically significant improvement. Monthly laboratory evaluations during isotretinoin therapy were within normal range with no abnormalities in the hematopoietic, renal, or hepatic systems.

The patient's nodulocystic acne was much improved after five months of isotretinoin therapy having reached the targeted cumulative isotretinoin dose between 120 to 150 mg/kg, thus we elected to discontinue this medication in light of the patient's painful eruption on the distal peri-ungal nails. Local treatment to the fingernails was initiated with topical mupirocin 2% ointment in the morning and ketoconazole 2% cream at night to prevent secondary infection. Two weeks later at follow-up, the patient exhibited smaller peri-ungal lesions with improved mobility and less pain (Figure 2). One month after discontinuation of isotretinoin the lesions persisted. Intralesional triamcinolone

injections (2.5 mg/ml), administered two weeks apart over six weeks followed by a single treatment of topical silver nitrate subsequently resolved the lesions (Figure 3).

CONCLUSION

Excess granulation tissue and pyogenic granulomas have been described in both previous acne scars and peri-ungal locations.[4] Literature review illustrates rare reports of this adverse event.[4,5] In addition, the mechanism by which retinoids cause excess granulation tissue of the skin is not well known. A course of occlusive therapy with topical steroids and antibiotics under occlusion for two to three weeks is the first line treatment for peri-ungal pyogenic granulomas.[5] In our patient's case, local treatment with topical antimicrobials along with discontinuation of oral isotretinoin was ineffective in resolving the painful nailfold pyogenic granulomas. Due to the severity and extent of this patient's pyogenic granulomas, intralesional steroids were chosen rather than topical steroids. Intralesional triamcinolone and silver nitrate over a period of six weeks led to complete resolution of these irritating lesions.

DISCUSSION

In 1983, Campbell et al. first reported the association between systemic retinoid therapy and excess granulation tissue in patients being treated for cystic acne and psoriasis.[3] At that time, Campbell felt that the response was idiosyncratic and unrelated to either the daily dose of retinoid or the total cumulative dose. The available literature to date supports the occurrence of excess granulation tissue within existing acne lesions, but an even rarer occurrence has been the association of systemic retinoid therapy and excessive granulation tissue occurring at non-acne locations such as the nail folds of the fingers and toes.[6]

It has been reported that the resolution of excess granulation tissue secondary to systemic retinoid therapy occurs on withdrawal of isotretinoin.[7] Unfortunately for our patient, discontinuation of isotretinoin and prevention of secondary infection in areas of excess granulation tissue was insufficient in resolving these lesions. To date, there is no consensus evidence based approach to the treatment of isotretinoin induced pyogenic granulomas. Literature supported first line medical treatment for pyogenic granulomas includes topical high potency corticosteroids such as clobetasol under occlusion.[8] Surgical treatment of pyogenic granulomas includes shave excision with electrodessication and curettage, pulsed dye laser, and sclerotherapy utilizing monoethanolamine oleate.[9,10]

Ultimately a combination of intralesional corticosteroids with silver nitrate therapy resulted in complete resolution of peri-ungal pyogenic granulomas in our patient. We hope that this case report will assist others in the future recognition and management of this rare but painful adverse effect of oral retinoid therapy for severe nodulocystic acne.

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Corresponding Author:
Jonathan G. Bellew,
Advanced Desert Dermatology
Peoria, AZ
JonathanBel@pcom.edu

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