Isotretinoin Induced Periungal Pyogenic Granuloma Resolution with Combination Therapy

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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 eruptive pyogenic granulomas of the periungual fingers in an adolescent male undergoing systemic retinoid therapy for severe recalcitrant nodulocystic acne, highlighting this important but rarely reported adverse effect of systemic retinoid therapy. 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,2 indinavir, and epidermal growth factor receptor inhibitors.

History of Present Illness

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 periungual third and fourth fingers extending from the hyponychium distally down through the nail grooves with extension proximally to the blisters of the terminal part of the nail (Figure 1). Within 2 weeks, lesions appeared abrupt 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, resulting in partial resolution of the lesions. After the patient experienced no significant response to therapy, he was referred to our dermatology office for evaluation.

Management & Clinical Course

At the time of the periungual 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 hematopoetic, 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 periungual nails. Local treatment to the fingernails was initiated with topical tretinoin 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 periungual 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).

Discussion

Excess granulation tissue and pyrogenic granulomas have been described in both previous acne scars and periungual locations.4 Literature review illustrates rare reports of this adverse event. In addition, the mechanism by which retinoids cause excess granulation tissue of the skin is not well known. According to the available literature, a course of occlusive therapy with topical steroids and antibiotics under occlusion for two to three weeks is the first line treatment for periungual pyogenic granulomas.5 In our patient’s case, this local treatment along with discontinuation of oral isotretinoin was ineffective in resolving the painful nailfold pyogenic granulomas. Intralesional triamcinolone and silver nitrate over a period of six weeks led to complete resolution of these irritating lesions.

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.6 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

Conclusion

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 pyrogenic granulomas. Literature supported first line medical treatment for pyogenic granulomas includes topical high potency corticosteroids such as triamcinolone-21-fluoropropionate.6,8 Surgery for these pyogenic granulomas includes shave excision with electrosurgical curettage, pulsed dye laser, and solerotherapy utilizing monochromatic oleate.

Ultimately a combination of intralesional corticosteroids with silver nitrate led to complete resolution of periungal pyrogenic granulomas in our patient. We hope that this case report will assist others in the future recognition and management of this rare but painfully adverse effect of oral retinoid therapy for severe nodulocystic acne.

References