

## Penile Granulomas Induced by Isotretinoin

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### Introduction

Pyogenic granuloma (PG) is a common, acquired, benign vascular tumor arising on skin and mucous membranes [1]. Isotretinoin, a retinoid used in the treatment of moderate to severe acne, is associated with several adverse events, including PG development [2]. We report a case who developed two penile PGs following treatment with oral isotretinoin for acne.

### Case Presentation

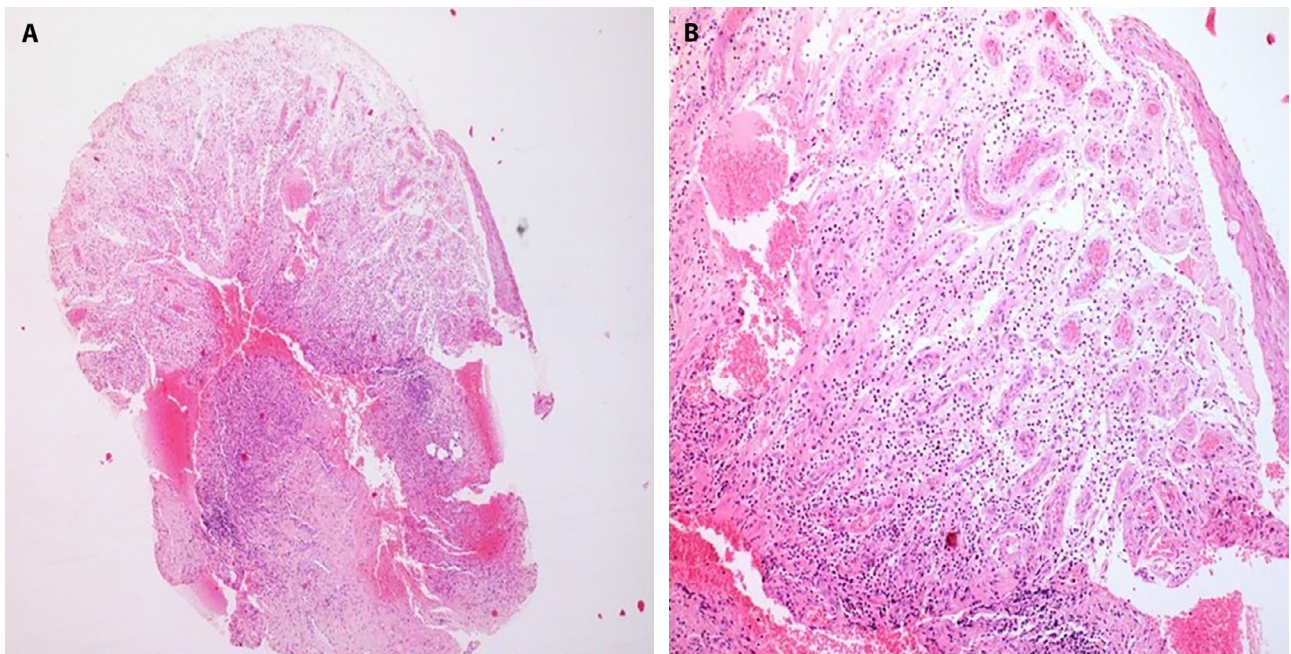
A 29-year-old male patient presented to our outpatient dermatology clinic with a 3-month history of two smooth, erythematous, exophytic lesions on the penis; the first on the glans (Figure 1A), and the second near the frenulum of the penis (Figure 1B). The patient reported that the lesions were asymptomatic, except for some occasional bleeding, and had gradually increased in size over the past few months. He

denied trauma or prior contact with chemicals or allergens before the lesion development. The patient had a history of moderate to severe acne and had completed a 6-month course of oral isotretinoin treatment approximately 3 months prior to the lesions onset. During treatment with isotretinoin, he noticed the abrupt onset of a hemorrhagic nodule on the lateral nail fold of the right big toe, initially considered to be an ingrown nail. However, after surgical excision of the lesion, it was histologically confirmed to be a PG.

Clinical examination of total skin and mucous membranes was otherwise unremarkable. Serologic testing for hepatitis B, C, HIV and VDRL/TPHA were negative. Swab cultures from lesional skin for aerobic and anaerobic bacteria were also negative. Shave biopsies of both lesions were obtained. Differential diagnoses included genital warts, amelanotic melanoma, and squamous cell carcinoma. Histopathological examination revealed a lobular proliferation of congested capillary vessels. There was a superficial mucosal erosion, while the underlying stroma was edematous with a mixed



**Figure 1.** A. Erythematous, glistening, well-demarcated, infiltrated plaque on the glans of the penis in a 29-year-old patient previously treated with oral isotretinoin. B. A second red, fleshy nodule with a broad base near the frenulum of the penis in the same patient.



**Figure 2.** A, B. Shave biopsy showing lobular configuration of proliferating congested capillary vessels (H&E, x40 and x100 respectively).

perivascular inflammatory infiltrate (Figure 2, A and B). These findings were consistent with PG. The lesions were surgically excised, and histologic examination confirmed the original diagnosis of PG. No recurrence was observed on 6-month follow-up.

## Conclusions

One plausible explanation for the occurrence of post-isotretinoin PG in our case could be the epidermal barrier impairment caused by isotretinoin, further potentiated by

localized trauma and infection, predisposed by sexual practices or poor hygiene of the area, leading to granulation tissue production [3,4].

In the literature, there are very few cases of isotretinoin-induced PGs. Most of them were periungual (lateral and distal nail folds), but there were also cases arising on the head, trunk, or upon prior acneic lesions [2,3]. There is only one report of multiple anogenital PGs in a young female that appeared during isotretinoin treatment, requiring dose modification [5]. However, in our case, the development of PGs occurred three months after the completion of isotretinoin treatment.

The present case highlights the need to consider PG in our differential diagnostic approach of vascular lesions of the skin and mucous membranes, including the genitals, in patients treated with isotretinoin. More studies are needed for a better understanding of the pathophysiology of PG occurrence after treatment with isotretinoin.

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