Vol. 36 / No. 3 / December 2024
Sinta 2 (Decree No: 200/M/KPT/2020)
Online ISSN : 2549-4082 ; Print ISSN : 1978-4279
Available online at https://e-journal.unair.ac.id/BIKK

Berkala Ilmu Kesehatan Kulit dan Kelamin

Case Report
Periodical of Dermatology and Venereology

Periungual Pyogenic Granuloma in Multiple Nails due to Isotretinoin

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ABSTRACT

Background: Isotretinoin, a first-generation nonaromatic retinoid approved in 1973 for severe nodulocystic acne treatment in the United States, has historically been associated with mucocutaneous adverse events. **Case:** The case involves a 22-year-old male with chronic plaque psoriasis who, after eight weeks of isotretinoin use, experienced swelling, pain, and bleeding in the periungual area of multiple fingers. Dermoscopic examination and follow-up assessments, including images, demonstrate the progression and eventual complete resolution of the periungual pyogenic granuloma following discontinuation of isotretinoin and topical application of fusidic acid and betamethasone combination. **Discussion:** The discussion delves into potential mechanisms linking isotretinoin to increased skin fragility and granulation tissue development, drawing on insights from experts like Baran and Piraccini. Additionally, we explore the role of angiogenic factors, particularly vascular endothelial growth factor (VEGF), in the context of psoriasis and its potential contribution to the development of pyogenic granuloma, with the aim of providing a comprehensive understanding of the underlying processes leading to this unique adverse event. **Conclusion:** In conclusion, this case report underscores the importance of recognizing and promptly addressing rare adverse events associated with medication errors. The successful resolution of the periungual pyogenic granuloma highlights the significance of timely intervention and appropriate management strategies in mitigating adverse outcomes.

Keywords: Adverse Events, Isotretinoin, Pyogenic Granuloma.

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| Article info |
Submited: 19-01-2024, Accepted: 14-08-2024, Published: 30-11-2024

BACKGROUND

13-cis-retinoic acid (13-cis-retinoic acid, or isotretinoin) is the first generation of nonaromatic retinoids, a derivative of b-carotene first synthesized in 1955. Since its approval for treating severe nodulocystic acne in the United States in 1973, isotretinoin has primarily been associated with mucocutaneous adverse events.[1,2] This case report sheds light on an unusual manifestation – periungual pyogenic granuloma – in a patient with chronic plaque psoriasis who inadvertently received isotretinoin instead of acitretin.[3,4]

CASE

A 22-year-old male with chronic plaque psoriasis was prescribed acitretin at a dose of 10 mg. During follow-up, the patient presented with swelling over the periungual area of the bilateral (B/L) ring fingers and left middle finger associated with pain and bleeding on contact. This adverse event occurred after eight weeks of isotretinoin use.

Examining the periungual area of the B/L ring fingers and the proximal nail fold of the left middle finger revealed a soft, tender, reddish papule with hemorrhagic crusting (Figure 1). Onychoscopy showed reddish homogeneous area with color variation from completely red to reddish-white areas, along with a collarette and hemorrhage (Figure 2). Other finger nails exhibited changes consistent with psoriasis (Figure. 3). The clinical diagnosis was pyogenic granuloma. Further investigation revealed that the patient had been using isotretinoin instead of acitretin. We stopped the isotretinoin use and initiated topical application of the fusidic acid and betamethasone combination. The lesion improved 10 days following

DOI : 10.20473/bikk.V36.3.2024.222-224

discontinuation of isotretinoin and completely resolved upon one month follow-up (Figure 4-6).

Figure 1. Multiple reddish papules with hemorrhagic crusting present on the periungual area of B/L ring fingers and proximal nail fold of the left middle finger.

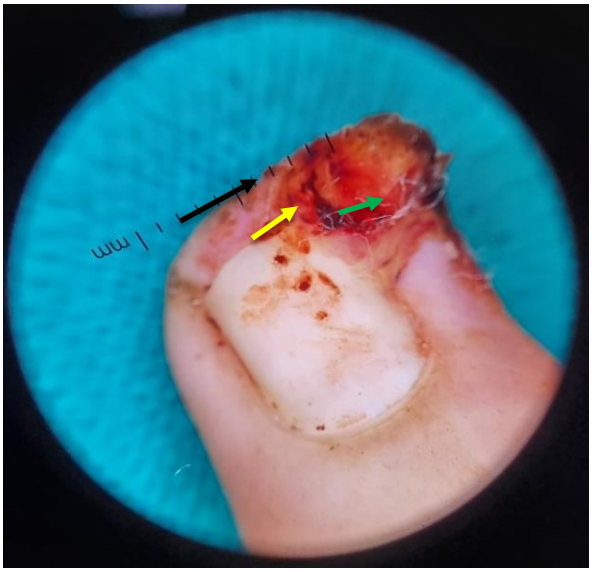

Figure 2. Reddish homogeneous area with color variation from completely red to reddish-white areas (black arrow), along with a collarette (green arrow) and hemorrhage (yellow arrow).

Figure 3. Psoriatic nail changes in the left little finger.

Figure 4. Pyogenic granuloma improved 10 days following the discontinuation of isotretinoin.

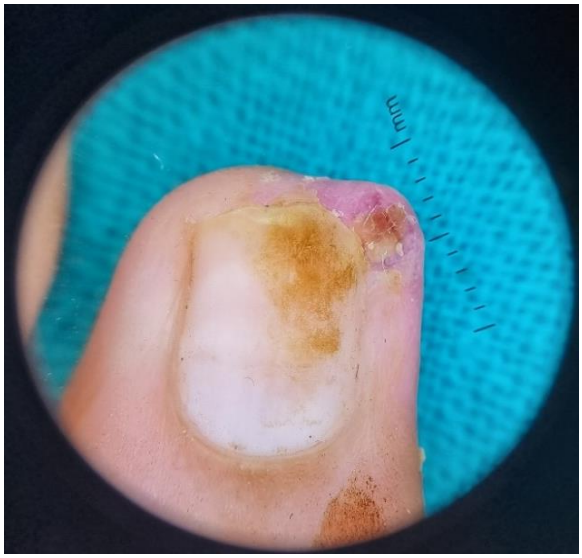

Figure 5. Dermoscopy of the lesion (Dermlite dl4 10x) 10 days following the discontinuation of isotretinoin.

Figure 6. Complete resolution on follow-up after 1 month.

DISCUSSION

Pyogenic granuloma (PG) is a rapidly growing benign vascular tumor of unknown etiology, commonly presenting as red or purple smooth papules on the fingers. These lesions tend to bleed easily and are often caused by minor trauma. Baran postulated that retinoids, including isotretinoin, can increase skin fragility in the periungual tissue, predisposing individuals to the development of granulation tissue after local trauma or infection. Piraccini et al. proposed that retinoids can cause onycholysis, leading to a localized foreign body reaction in the proximal nail fold and promoting the formation of pyogenic granuloma.[5,6,7]

In summary, this case report sheds light on a rare adverse event: periungual pyogenic granuloma in a patient with chronic plaque psoriasis mistakenly treated with isotretinoin instead of acitretin. The patient's symptoms, including swelling and bleeding, emerged after eight weeks of isotretinoin use. The prompt discontinuation of isotretinoin and the initiation of topical treatment resulted in complete resolution of the lesion within one month. Follow-up assessments, including dermoscopy and observation of psoriatic nail changes, provided valuable insights. The discussion explored potential mechanisms, linking isotretinoin to increased skin fragility and the development of granulation tissue. The mechanisms and risk factors associated with this uncommon phenomenon require further research.

Authors' contributions

The research was designed and conceptualized by DA and SB. DA gathered the information. DA, SB, AL, and KP collaboratively wrote the entire manuscript. AL, SB, and AL reviewed the manuscript. All authors read and approved the final manuscript.

Funding

The authors did not receive any funding to assist with the preparation of this manuscript.

Competing interests

The authors declare that they have no conflict of interest

REFERENCES

1. Curtis KL, Lipner SR. Vitamins for the Management of Nail Disease: A Literature Review. Skin Appendage Disord. 2024 Apr;10(2):104-122.
2. Lopez-Castillo D, Curto-Barredo L, Sánchez-Schmidt JM, Pujol RM. Multiple Eruptive Pyogenic Granulomas on the Proximal Nail Folds Following Cast Immobilization: A Case Report with Nail Unit Ultrasound Findings. Acta Derm Venereol. 2020;100(6):adv00071.
3. Ramamoorthy L, Somasundaram A, Monisha GA. Periungual pyogenic granuloma-like lesions due to capecitabine. CosmoDerma 2023;3:150.
4. Erduran, F. The clinical characteristics and outcomes of the patients with pyogenic granuloma: A retrospective study of 144 patients. Annals of Medical Research. 2024;31(1), 39–42.
5. Keshavarzi A, Dahmardehei M, Emami A, Ghadimi T, Bouzari B. Management of Pyogenic Granulomas Following Burn Wounds. World J Plast Surg 2021;10(3):117-120.
6. Yigit D, Karaosmanoglu N. Nail changes in patients receiving systemic isotretinoin therapy. Sci Rep 2024 26;14(1):25561.
7. Wu JJ, Kavanaugh A, Lebwohl MG, Gniadecki R, Merola JF. Psoriasis and metabolic syndrome: implications for the management and treatment of psoriasis. J Eur Acad Dermatol Venereol. 2022;36(6):797-806.