Palisaded Neutrophilic Granulomatous Dermatitis as the Initial Manifestation of Rheumatoid Arthritis

Dermatite Granulomatosa Neutrofílica em Paliçada como Manifestação Inicial de Artrite Reumatoide

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Palavras-chave: Artrite Reumatoide; Dermatite; Doenças Autoimunes; Granuloma; Neutrófilos

Rheumatoid arthritis (RA) is an autoimmune disease that can be associated with cutaneous manifestations, most commonly rheumatoid nodules. Other dermatological findings include vasculitis, pyoderma gangrenosum, Sweet syndrome, and reactive granulomatous dermatitis, which encompasses both palisaded neutrophilic granulomatous dermatitis (PNGD) and interstitial granulomatous dermatitis.[1]

Palisaded neutrophilic granulomatous dermatitis is a rare neutrophilic dermatosis often linked to autoimmune disease (notably RA and systemic lupus erythematosus) and less frequently to hematologic malignancy, infection, or drugs.[2,3] Although its clinical spectrum is broad, PNGD typically appears as symmetrical papules, plaques, or nodules on the extensor limbs, with central ulceration or crust.[4] Histopathological examination is essential to establish the diagnosis. Response to treatment is variable and focuses on controlling the underlying systemic disease; reported options include corticosteroids, dapsone, or hydroxychloroquine.[1]

We present a case of PNGD with an unusual clinical pattern that represented the initial manifestation of RA.

A 71-year-old woman with a history of arterial hypertension, atrial fibrillation, and dyslipidemia – on long-standing therapy – was referred to Dermatology for asymptomatic lesions evolving over six months, with a progressive increase in number and size. The eruption began on the right upper limb and later spread to the face and left upper limb. She denied systemic symptoms. Approximately three months after the cutaneous onset, she developed bilateral inflammatory-type polyarthralgia. Examination revealed polyarthritis of metacarpophalangeal joints, proximal and distal interphalangeal joints of the hands, and metatarsophalangeal joints. The diagnosis of RA was established, supported by positive rheumatoid factor (34.2 U/mL) and anti-cyclic citrullinated peptide antibodies (82.0 U/mL), despite the atypical distal interphalangeal involvement.

A dermatologic examination revealed multiple symmetric violaceous nodules (2 - 5 cm) on the elbows, a solitary lesion on the right arm and wrist, and another on the glabellar region (Fig. 1). Additionally, a reticulated erythema was observed on the extensor surfaces of the upper limbs, along with urticaria-like lesions on the anterior forearms. Palisaded neutrophilic granulomatous dermatitis was suspected and skin biopsies were performed. Histopathology showed a

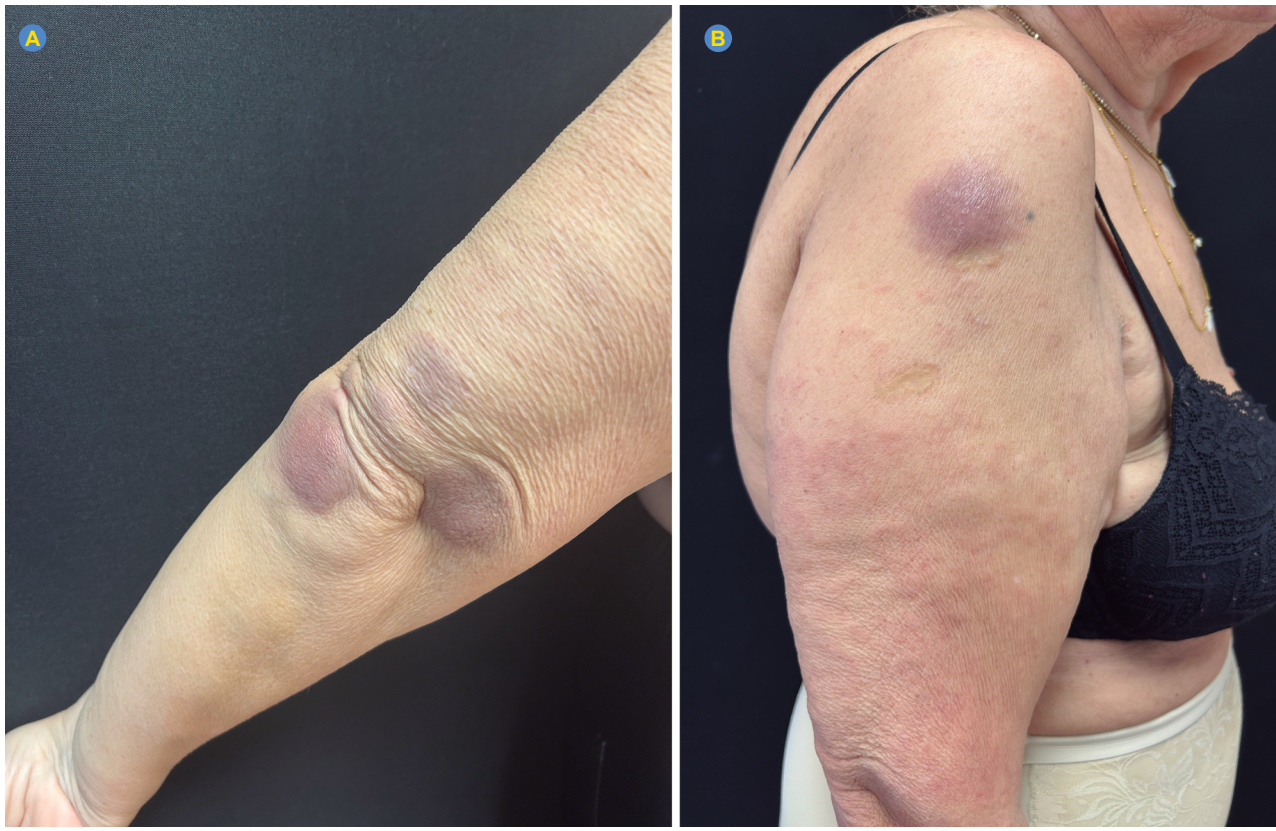

Figure 1 – Violaceous nodules on the right elbow and anterolateral aspect of the right arm (A); reticulated erythema on the distal half of the extensor surface of the right upper limb (B)

lympho-histioplasmacytic and neutrophilic infiltrate in the dermis extending into the hypodermis, with large areas of necrobiosis surrounded by histiocytes, focally arranged in a palisaded pattern, confirming PNGD. A targeted work-up to exclude other causes (connective-tissue disease, malignancy, and drug-related etiologies) was negative; given the temporal relationship, the dermatosis was considered associated with RA.

The patient was initially treated with prednisolone, followed by methotrexate. Due to persistent cutaneous lesions, hydroxychloroquine was later added to the treatment.

Palisaded neutrophilic granulomatous dermatitis is a rare dermatological entity often associated with systemic autoimmune disease. In this patient, it preceded the clinical manifestations of RA, highlighting the need to include PNGD among the possible cutaneous presentations of RA and to recognize its variable morphology – including multiple large nodules and facial involvement.

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AUTHOR CONTRIBUTIONS

JR: Collection of clinical data, literature review, drafting of the manuscript.

RR: Collection of clinical data, critical review of the manuscript.

JN, JA: Critical review of the manuscript.

All authors approved the final version to be published.

PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in October 2024.

DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

PATIENT CONSENT

Obtained.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest related to this work.

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REFERENCES

1. Diaz MJ, Natarelli N, Wei A, Rechdan M, Botto E, Tran JT, et al. Cutaneous manifestations of rheumatoid arthritis: diagnosis and treatment. J Pers Med. 2023;13:1479.
2. Yang C, Tang S, Li S, Ying S, Zhu D, Liu T, et al. Underlying systemic diseases in interstitial granulomatous dermatitis and palisaded neutrophilic granulomatous dermatitis: a systematic review. Dermatology. 2023;239:287-98.
3. Bangalore Kumar A, Lehman JS, Johnson EF, Cantwell HM, Sartori Valinotti JC, Sokumbi O, et al. Reactive granulomatous dermatitis as a clinically relevant and unifying term: a retrospective review of clinical features, associated systemic diseases, histopathology and treatment for a series of 65 patients at Mayo Clinic. J Eur Acad Dermatol Venereol. 2022;36:2443-50.
4. Sarıkaya Tellal E, Ilhan Erdil D, Gore Karaali M, Aksu AE, Erdemir VA, Polat AK, et al. Interstitial granulomatous dermatitis and palisaded neutrophilic granulomatous dermatitis: retrospective clinicopathological analysis of 16 cases. Dermatol Pract Concept. 2023;13:e2023129.

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