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IMAGES IN RHEUMATOLOGY

Beyond rheumatoid nodules in rheumatoid arthritis

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BACKGROUND

Rheumatoid arthritis (RA) is a chronic systemic, autoimmune, inflammatory disease that primarily involves synovial joints, affecting around 0.5-1% of the world population[1]. Non-articular organs, including the skin, may also be affected, particularly in patients with severe joint disease. Despite rheumatoid nodules being the most common cutaneous manifestation, occurring in 20-30% of seropositive RA patients, other skin conditions may arise, posing diagnostic challenges[2].

CASE REPORT

A 71-year-old woman with seropositive RA presented to our Rheumatology department for a follow-up appointment. She was diagnosed at the age of 58, based on polyarthritis, elevated inflammatory markers and positive rheumatoid factor (1140 UI/mL, range <20 UI/mL) and anti-citrullinated peptide antibodies (166 U/mL, range <7 U/mL). Following a treat-to-target approach, she achieved remission with subcutaneous methotrexate 25 mg per week and intravenous tocilizumab 8 mg/kg every 4 weeks. Eight years after the initial diagnosis, she developed a mildly pruritic dermatosis of the elbows, that worsened over two years. On physical examination, multiple erythematous-violaceous papules and both superficial and subcutaneous nodules, partially mobile, with elastic consistency and painless to palpation, symmetrically distributed on the elbows and forearms (Figure 1). Rheumatoid nodules were initially considered, however due to atypical clinical presentation, she was referred to the Dermatology department, where an incisional skin biopsy was performed. Histopathology revealed an interstitial granulomatous infiltrate (Figure 2), not suggestive of rheumatoid nodules. Clinicopathological correlation allowed for the diagnosis of palisaded neutrophilic granulomatous dermatitis (PNGD). X-ray showed mild soft tissue swelling (Figure 3). She was treated with clobetasol cream on an as-needed basis with improvement of symptoms. At 1 year follow-up, almost complete resolution of the dermatosis was observed (Figure 4).

DISCUSSION

PNGD is a rare inflammatory dermatosis of unknown cause, often asymptomatic, presenting as skin-colored to erythematous papules or plaques on extremities, particularly extensor surfaces[2,3]. These features make it difficult to distinguish from rheumatoid nodules in RA patients, leading to undertreatment and increased morbidity. High clinical suspicion and referral to Dermatology are crucial. Key differences include PNGD's possible pruritus and softer consistency, whereas rheumatoid nodules are non-pruritic, firmer, and develop on pressure points like hands and fingers. Another relevant differential diagnosis is accelerated nodulosis, commonly seen in RA patients on methotrexate, characterized by rapid growth of rheumatoid nodules[(3)]. PNGD is commonly associated with RA, systemic lupus erythematosus, or systemic vasculitis, and has not been

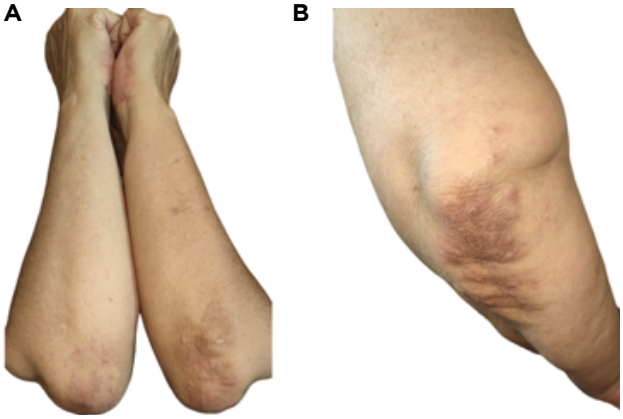

Figure 1. a) Extensor surface of the forearms. Multiple erythematous-violaceous papules and nodules, sometimes subcutaneous, tending to coalesce into plaques, with a hard-elastic consistency and mobile, symmetrically distributed on the elbows. b) Close-up image.

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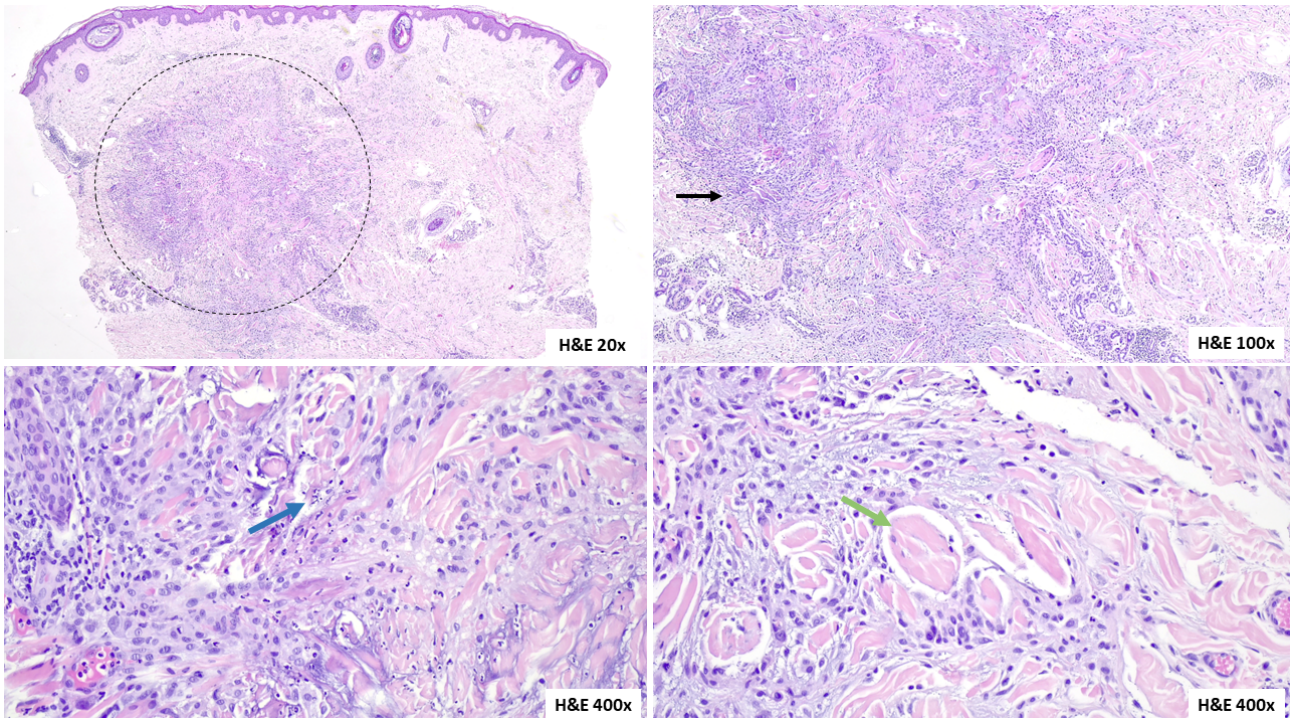

Figure 2. Histology (H&E). Interstitial granulomatous infiltrate (circle) with a tendency for palisaded arrangement (black arrow), accompanied by occasional neutrophils in karyorrhexis (blue arrow) and collagen degeneration (green arrow), with deposition of filamentous basophilic material.

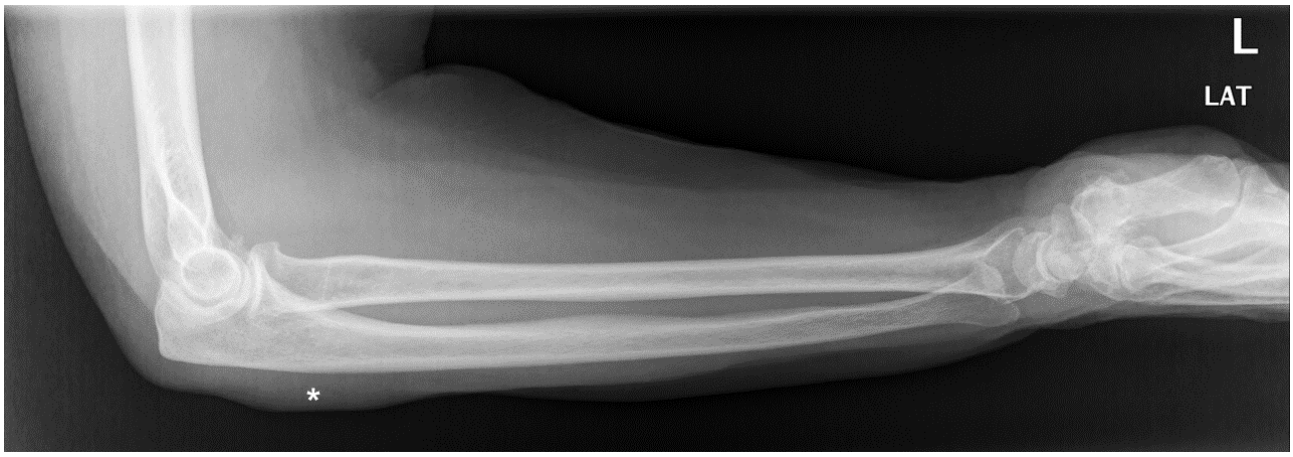

Figure 3. X-ray of the elbow and forearm, lateral view. Mild soft tissue swelling on the extensor surface of the proximal forearm (*).

reported in association with methotrexate[4]. In our patient, the slow progression, clinical presentation, and skin biopsy ruled out accelerated nodulosis.

Prognosis for these conditions is generally favorable, though recurrence can occur[2]. PNGD often resolves spontaneously or after controlling the underlying disease. Treatment options may include topical, intralesional, or systemic corticosteroids, dapsone, and hydroxychloroquine. Symptomatic rheumatoid nodules can be treated with local glucocorticoid injections and anesthetics, or surgically removed if severe[5].

This case report underscores the association between rheumatoid arthritis and neutrophilic dermatoses, specifically palisaded neutrophilic granulomatous dermatitis, and emphasizes the importance of a multidisciplinary approach by Rheumatology and Dermatology in the diagnosis and management of this condition.

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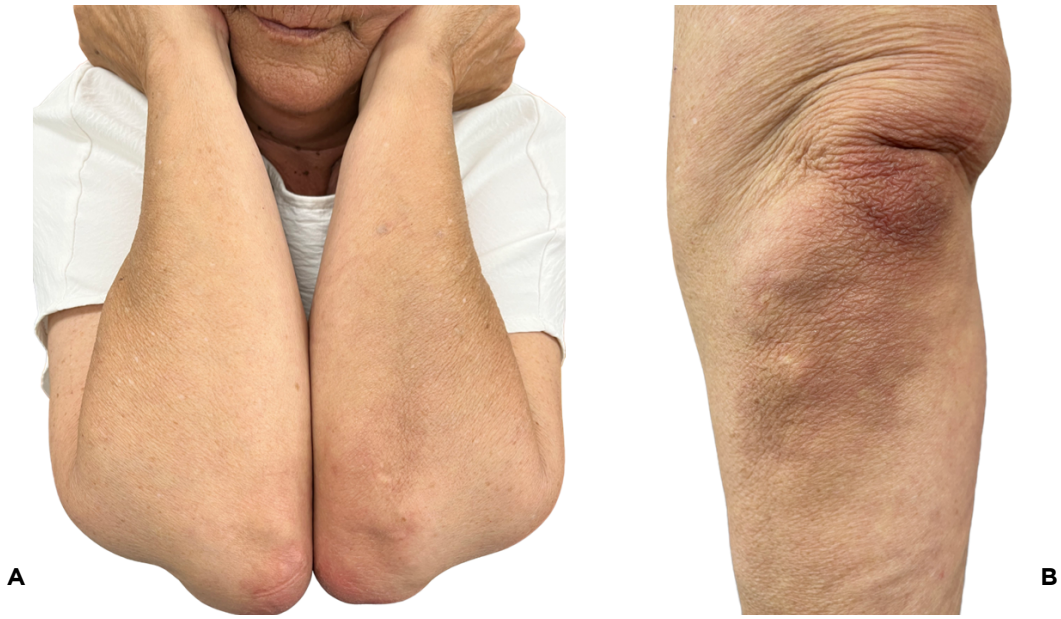

Figure 4. a) Extensor surface of the forearms. Almost complete resolution of skin lesions after treatment with clobetasol cream. b) Close-up image.

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