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Clinical Image

Erythema Nodosum Due to Tuberculosis: When the Skin Speaks for the Infection

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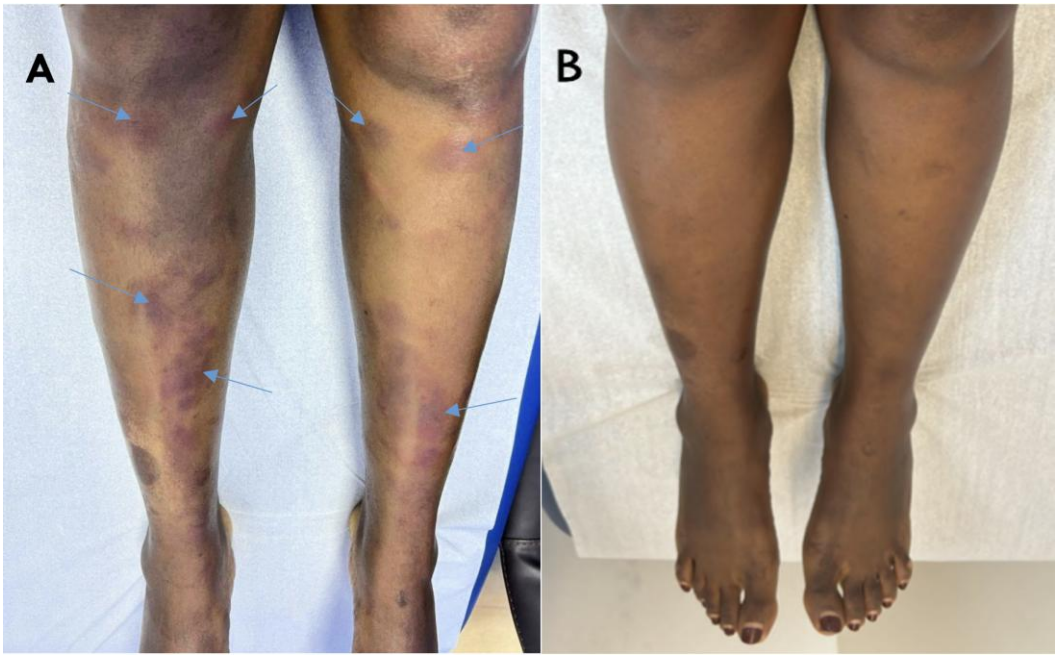

Figure 1: A. Shows images of erythematous nodular lesions on the lower limbs (blue arrows). B. No injuries to the lower limbs after three weeks of treatment.

A 33-year-old woman (Fitzpatrick phototype VI) presented with a two-year history of recurrent episodes of painful nodular lesions predominantly affecting the anterior aspects of both lower legs. The lesions appeared in flares lasting several weeks and evolved into bruise-like (contusiform) discoloration before partial spontaneous regression. The episodes were accompanied by low-grade fever, fatigue, arthralgia, and difficulty walking due to pain. Physical examination revealed multiple tender, erythematous subcutaneous

nodules symmetrically distributed over the anterior tibial surfaces (Figure 1A). No ulceration, posterior calf predominance, scarring, or draining sinuses were observed.

Laboratory test results showed a slightly elevated erythrocyte sedimentation rate (30 mm/hour), while complete blood count, C-reactive protein, liver and kidney function tests, antistreptolysin O titer, antinuclear antibodies, and HIV serology were unremarkable. The chest X-ray showed no evidence of active pulmonary disease. The interferon-gamma release assay (IGRA) was positive, indicating infection with Mycobacterium tuberculosis in this tuberculosis-endemic environment.

Skin biopsy demonstrated septal panniculitis with septal widening and lymphohistiocytic inflammatory infiltrate without vasculitis, lobular panniculitis, granulomatous inflammation, or necrosis, consistent with erythema nodosum. The histopathological assessment was performed by an experienced anatomical pathologist. Although histological images were originally archived, the digital file was irretrievably lost following a clinic software update; therefore, only the formal pathology description is available.

Erythema nodosum is a septal panniculitis considered a delayed hypersensitivity reaction to systemic triggers, including infections, autoimmune diseases, drugs, and tuberculosis [1]. In endemic regions, tuberculosis remains an important etiological consideration. The recurrent pattern observed in this patient likely reflected persistent antigenic stimulation [2, 3]. In tuberculosis-endemic regions, EN may represent a tuberculid, a hypersensitivity reaction to mycobacterial antigens without demonstrable organisms in the skin [4]. Distinguishing EN from erythema induratum of Bazin (EIB) is essential because EIB is typically considered a lobular panniculitis with vasculitis and may represent a more direct localized infectious process. Clinical distribution (anterior tibial involvement without ulceration) and histopathological features (septal panniculitis without vasculitis) were decisive in this differentiation.

Given the positive IGRA, slightly elevated erythrocyte sedimentation rate, systemic symptoms, epidemiological context, compatible histopathology, and exclusion of alternative causes, tuberculosis-associated erythema nodosum was diagnosed. The decision to initiate full four-drug anti-tuberculosis therapy was based on the classification of probable active extrapulmonary tuberculosis manifesting as a tuberculid, in accordance with recommendations from the World Health Organization for management of suspected active tuberculosis in endemic settings [5]. Marked clinical improvement was observed within three weeks, with complete resolution of lesions (Figure 1B). After two months, treatment was switched to rifampicin and isoniazid for a further four months. At the six-month follow-up, the patient remained asymptomatic without recurrence. The rapid and sustained therapeutic response further supports the causal relationship.

This case highlights the importance of recognizing erythema nodosum as a potential cutaneous manifestation of tuberculosis, particularly in endemic regions, where early identification may prompt appropriate systemic investigation and treatment.

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Research Ethics Committee Approval: The patient provided written informed consent for participation, and the study was conducted in accordance with the ethical guidelines outlined in the Declaration of Helsinki.

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Conflicts of Interest: None.

Supplementary Materials: None.

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