An atypical presentation of tuberculous gumma heralding a diagnosis of lymph node tuberculosis: Hindsight is 20/20

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INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis* that, in its primary form, usually affects the lungs; cutaneous TB accounts for only 1% to 2% of all cases of TB.[1] Cutaneous TB can be acquired exogenously or endogenously.[2,3] Exogenous forms include tubercular chancre and TB verrucosa cutis; endogenous forms include lupus vulgaris, scrofuloderma, and metastatic tuberculous abscess (also known as tuberculous gumma [TG]).[3]

TG is very rare and results from the hematogenous spread of the bacilli; it usually affects malnourished children and immunocompromised adults, but cases have also been described in immunocompetent adults.[4]

CASE REPORT

Herein, we present the case of a patient with a TG associated with lymph node TB.

A 70-year-old woman came to our attention for the sudden onset of a violaceous nodule with initial central ulceration on the dorsal surface of the right forearm (Fig 1). The nodule was approximately 5 cm in diameter and was warm and intensely tender on palpation.

The patient had a history of splenectomy during her childhood due to idiopathic thrombocytopenic purpura.

In the previous few months, she had suffered from malaise and weight loss and had undergone a whole-body computed tomography scan, which had revealed multiple lymphadenopathies on both sides of the diaphragm. With the clinical suspicion of lymphoma, a lymph node biopsy had been performed, but it did not show any evidence of neoplastic cells.

Abbreviations used:

PCR: polymerase chain reaction
TB: tuberculosis
TG: tuberculous gumma

A biopsy of the skin lesion was performed and revealed a dense inflammatory infiltrate involving the dermis and hypodermis, composed of lymphocytes, eosinophils, and sparse mononuclear histiocytes with clear, foamy, or eosinophilic cytosol, without the clear formation of granulomas (Fig 2, *A* and *B*). Moreover, the dermis displayed edema, collagen degeneration, and intense neoangiogenesis. Ziehl–Neelsen, periodic acid–Schiff, and Gomori–Grocott stains failed to reveal any microorganisms.

A few days later, the patient reported tenderness in the right axilla, where a large mass was palpable. An ultrasound was performed and revealed a large, colliquated mass, almost 10 cm in diameter, engulfing the internal mammary artery. The patient was then admitted to the infectious diseases ward. A full-body computed tomography scan showed multiple lymphadenopathies in the right axilla, in the

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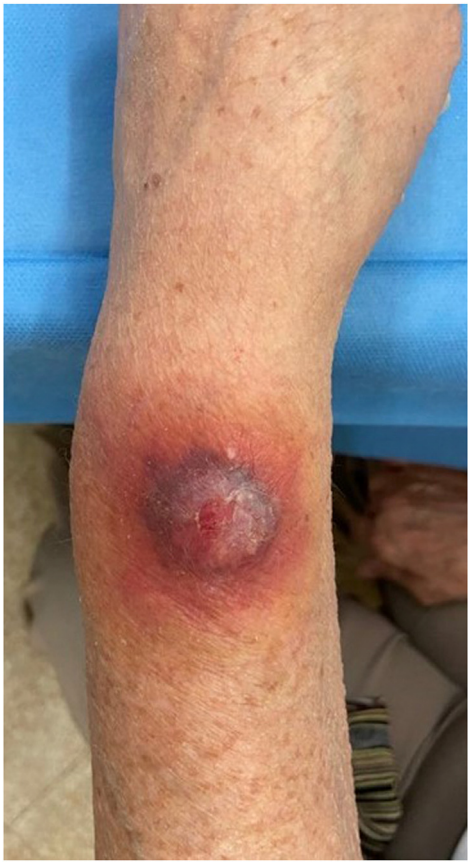

Fig 1. Violaceous, nodular lesion with initial central ulceration on the patient's right forearm.

mediastinal lymph nodes, and at the hepatic hilum, while no focal pulmonary lesions or pleural effusion were demonstrated.

A QuantiFERON-TB Gold test (LIAISON, DiaSorin) was performed, with a positive result. Cultures performed from a biopsy from the colliquated lymph node were positive for rifampicin-sensitive *M. tuberculosis*.

A diagnosis of lymph node TB with secondary cutaneous spread in the form of TG was made, and the patient followed a 6-month course of antitubercular therapy with isoniazid, rifampicin, pyrazinamide, and ethambutol. In a few weeks, the skin lesion resolved completely, leaving an atrophic scar (Fig 3); a follow-up computed tomography scan executed at the end of the treatment showed the complete remission of the lymphadenopathies.

DISCUSSION

TG is typically characterized by indolent, fluctuating, subcutaneous nodules draining caseous secretions[1-3]; histopathologic features include necrotizing granulomas, abundant caseous necrosis, and acid-fast bacilli on Ziehl–Neelsen staining.[5] The diagnosis often requires diagnostic tests other than histology, such as polymerase chain reaction (PCR) and cultures; among the differential diagnosis are scrofuloderma, atypical mycobacterial infections,

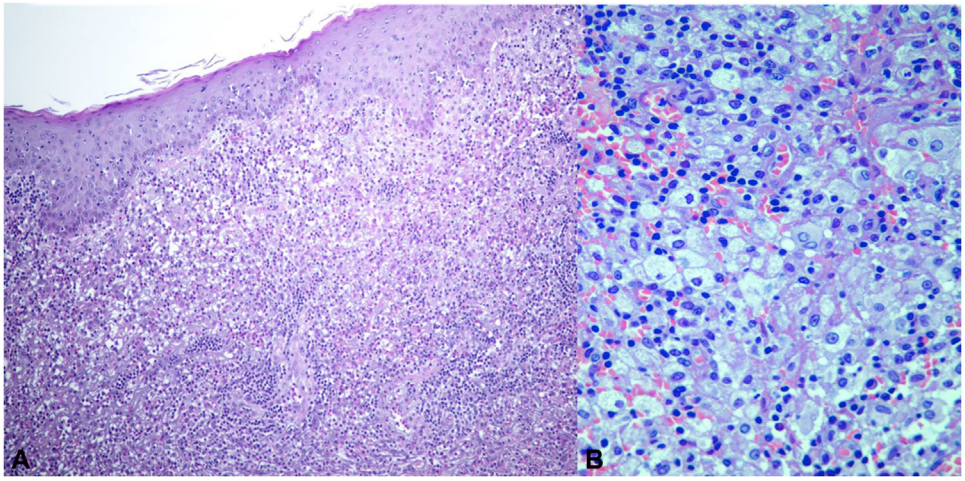

Fig 2. A, Histopathology shows acanthosis of the epidermis, with a rich, polymorphous, inflammatory infiltrate involving the dermis and hypodermis and made of lymphocytes, eosinophils, and abundant mononuclear histiocytes with foamy cytosol, without granuloma formation; the dermis displays edema and intense neoangiogenesis. **B,** Numerous foamy macrophages and lymphocytic infiltrate, mostly situated around the blood vessels, are evident (higher magnification).

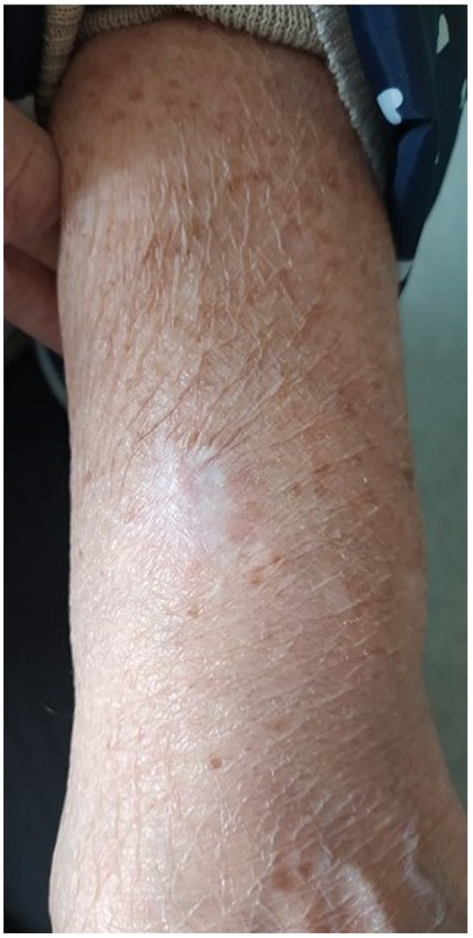

Fig 3. Atrophic scar on the patient's right forearm after a few weeks of antitubercular therapy.

deep fungal infections, lymphomas, pyogenic infections, and cutaneous leishmaniasis.[6]

In our case, the patient presented with a single, noncaseating nodule. The skin biopsy showed large numbers of foamy macrophages, intense neoangiogenesis, and the perivascular cuffing of lymphocytes, which are described as initial signs of granuloma formation in murine models of primary pulmonary TB,[7,8] as also described by Russell et al[9] in the process of TB granuloma formation in humans. It is of note that in very early stage of such a lesion, Ziehl–Nielsen staining might be negative, contrary to what is reported for necrotic lesions.[8]

The clinical suspicion of lymphoma, for which the patient was under strict follow-up, allowed us to render a diagnosis of TG in a very early clinical stage and allowed the patient to receive the diagnosis of lymph node TB with its specific treatment.

Especially in immunocompetent patients, the clinical presentation and histopathologic findings might be atypical or not sufficient for a correct diagnosis, and more specific diagnostic testing, such as PCR and immunostaining, is encouraged.[6] While the sensitivity of PCR is very high for multibacillary forms of cutaneous TB, its sensibility for paucibacillary forms has been reported to be as low as 56%.[5] On the other hand, immunocytochemical staining has been shown to have high sensitivity (96.2%) and specificity (95%) in clinically confirmed cases of extrapulmonary TB, compared to the overall positivity of acid-fast bacilli and cultures of 57% and 43%, respectively.[10] Immunohistochemistry in TB has also been proven to be almost on par with PCR in terms of diagnostic accuracy.[11]

In the end, for clinicians operating in countries where TB is not endemic, it might be reasonable to consider TG, not only in the more typical cases of long-standing nodular or suppurating lesions that do not resolve after standard antibiotic regimens but also in cases of rapid-onset nodules in patients suffering from systemic symptoms, such as weight loss and malaise. Once a clinical suspicion is established, the diagnosis should be confirmed using multiple diagnostic strategies, including histology, PCR, cultures, and immunostaining, depending on their availability in the specific clinical and laboratory setting.

Conflicts of interest

None disclosed.

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