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Case Report

Unusual recurrent skin lesions: Bazin's disease

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ABSTRACT

A 46 year old Iraqi Kurd female patient was presented with recurrent round erythematous skin lesions on her upper and lower extremities mainly calves, lower abdomen, and buttock for 3 years. Routine laboratory investigations were unremarkable; however, based on strongly positive tuberculin skin test, positive interferon gamma release assay, histo-pathological findings and a response to anti-TB treatment, she was diagnosed with Erythem Induratum of Bazin (EIB). The patient was treated successfully with combination anti-TB drugs. The skin lesions disappeared after 2 months of the treatment. There was no recurrence of the lesions over a 6 month follow up period.

Keywords: Erythema induratum of Bazin, Tuberculosis, IGRA, Iraqi Kurdistan

INTRODUCTION

Erythem Induratum of Bazin (EIB) was first recognized by Bazin in 1861 and thereafter in 1900, a French dermatologist linked it with *Mycobacetrium tuberculosis* within the extrapulmonary manifestartions of tuberculid.[1]

Bazin's disease is closely similar to nodular vasculitis, which can be caused by hepatitis C, sarcoidosis and other chronic inflammatory conditions. Both of these conditions are immune hypersensitivity reaction to various antigens of miscellaneous etiologies.[2] In our country there are no reported cases of EIB and its etiologic causes; however, TB should be considered as an important etiologic agent because of a relatively high TB incidence in Iraqi Kurdistan.[3] The interferon gamma release assay (IGRA) has widely been used to differentiate between EIB and other forms of nodular vasculitis.[4]

Here, we report a rare form of cutaneous TB described as EIB in a middle aged woman from Iraqi Kurdistan without signs and symptoms of active TB.

CASE REPORT

A 46 year old Iraqi Kurd female patient was presented with recurrent round erythematous skin lesions on her upper and lower extremities mainly calves, lower abdomen, and buttock for 3 years. The lesions were bilateral and asymmetrical. The patient was consulted by many physician without definitive diagnosis. The sizes of the lesions were approximately 2-5 cm in diameter. The lesions were re-occurring for 2-3 months on each attack during these 3 years. They were appearing as erythematous and healing as hyperpigmented macule. The lesions were neither itching nor scaly. Although, there was no past medical history of relevance, her partner had active pulmonary TB before 7 years, which she denied having to inform us at the beginning. To add,

she did not undergo a Mantoux test at that time. The patient denied pulmonary symptoms, night sweats, and weight loss.

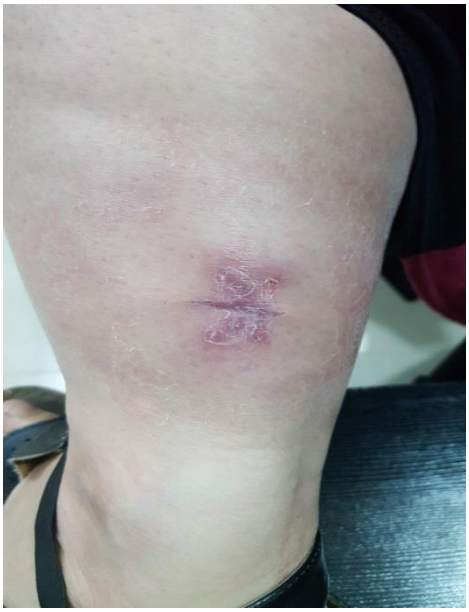

Figure 1: Excisional biopsy of the erythematous skin lesions.

Routine laboratory investigations including complete blood count (CBC), blood chemistries, and erythrocyte sedimentation rate (ESR) were unremarkable. Chest x-ray (CXR) was normal. Tuberculin skin test (TST) was strongly positive (22 mm). The IGRA (QuantiFERON-TB Gold Plus (QFT-Plus), QIAGEN GmbH, Germany) was positive. Viral serology including hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV) were negative. Serum calcium and serum angiotensin converting enzyme (ACE) were normal. Serology for syphilis was negative. A high resolution CT scan of the chest was normal. An excisional skin biopsy of a well-defined lesion was performed (Figure 1), and a standard histo-pathology examination showed multiple non-caseating granulomatous inflammation of the subcutaneous tissue with multinucleated giant cells (Figure 2 A-D), and the fluorescent stain for TB was negative. Molecular analysis of the lesion biopsy was negative for *mycobacterium tuberculosis* complex.

Due to the absence of signs and symptoms of active TB, positive IGRA test, and histo-pathological findings of biopsied lesion, the features were thought to be highly suggestive of Bazin's disease.

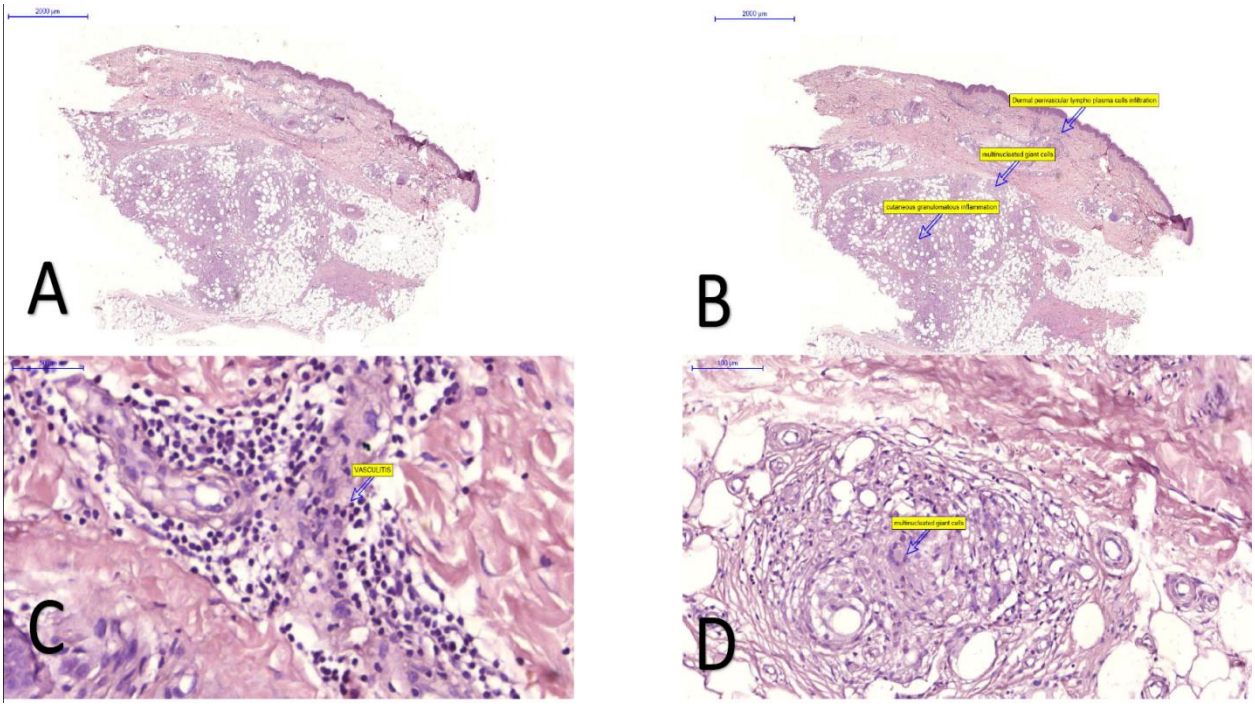

Figure 2: Histo-pathological findings of erythema induratum of Bazin. (A) Excisional biopsy of the skin; (B) deep dermal and subcutaneous inflammation with a dense diffuse neutrophilic and granulomatous infiltrate; (C) there is vasculitis; (D) granulomatous inflammation with multinucleated giant cells (hematoxylin-eosin, original magnifications 10 X (A), 15 X (B) and 400 X (C), 300 X (D).

The patient was treated with quadruple anti-TB drugs (i.e. isoniazid (INH), rifampicin (RMP), pyrazinamide, and ethmabutol) for 2 months, followed by 4 months of INH and RMP. The skin lesions disappeared after 2 months of the treatment. There was no recurrence of the lesions over a 6 month follow up period.

DISCUSSION

Although the incidence of cutaneous TB is rare, it should be considered in the differential diagnosis of patients with recurrent skin lesions, especially in high endemic areas. Here, we present the first case report from Iraqi Kurdistan with cutaneous TB.

Cutaneous TB is classified based on the number of TB bacilli in the skin i.e. multibacillary versus paucibacillary. Examples of multibacillary are TB chancre, scrofuloderma, TB orificialis, miliary TB, and gummatous TB; whereas e.g. of the paucibacillary are: lupus vulgaris, TB verrucosa cutis, and tuberculids.[5]

Erythema induratum is either associated with TB (Bazin type) or non-TB (Whitfield). In Bazin's disease, the patient is usually an adolescent or premenopausal woman similar to our case.[6]

The lesions in Bazin disease often affect the lower legs, while in this case the lesions were more generalized affecting upper and lower extremities mainly calves, lower abdomen, and buttock.[7] Her lesions were healing spontaneously as hyperpigmented macules. In general, EIB is clinically recognized by chronic, recurrent, indurated, tender, and erythemato-violaceous skin lesions on the lower extremities; however, it is often presented as ulcerative subcutaneous lesions.[8]

The standard care in the diagnosis of TB disease is the demonstration of TB microorganism in the clinical specimen. Occasionally, this is quite difficult especially in extraplumonary cases where the illness is paucibacillary.[9] Cutaneous TB is not uncommon among human immunodeficiency virus (HIV) and multi-drug resistant-TB (MDR-TB) patients.[10] On the contrary, our immunocompetent patient was presented with cutaneous TB. Since the presentation of the patient in our case was challenging, the diagnosis was made based on the TB epidemiology in our locality, strongly positive TST, positive IGRA and suggestive histo-pathological findings (Figure 2), and response to the treatment. The positive TST and IGRA in our case were against the diagnosis of non-TB associated erythema induratum disease. The exact cause of eryhtema induratum is unkown when the tests are negative, but it may be due to other infectious etiologies e.g. hepatitis viruses C and B, norcardia, etc.[11]

The histo-pathological investigation failed to reveal *M. tuberculosis* in the clinical specimen. It is well known that AFB can be rarely identified in the clinical specimen in patients with Bazin's disease.[5] Similarly PCR analysis failed to reveal TB bacilli, which is likely evident because of paucibacillary nature of the disease. Histo-pathological study often presents with this pattern of findings: granulomas, septal panniculitis, fat necrosis and/or small or large vessel vasculitis, which was in agreement with our patient's pathological findings.[12] The granulomatous lesions were non-caseous, hence we investigated the serum calcium and ACE levels to exclude sarcoidosis.

In our case, there was no concurrent involvement of other organs with active TB. There were no signs and symptoms of TB, and the CXR and CT-scan were normal.

The patient was treated successfully with standard World Health Organization (WHO) anti-TB drugs with complete recovery. Generally, cutaneous TB must be treated with the same regimen as systemic TB and there is no role for single anti-TB drug.[5]

In conclusion, we have reported a rare case of Bazin TB in an immunocompetent patient without signs and symptoms of active TB. Although its incidence is rare, it should be considered in the differential diagnosis of patients with recurrent skin lesions, particularly in endemic areas. Such patients should be treated with standard quadruple anti-TB drugs rather than prophylactic anti-TB therapy.

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