

Erythema Induratum of Bazin – A Rare Entity

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Abstract

Erythema Induratum of Bazin (EIB) is a tuberculid, a condition occurring ‘on the legs of female and in young and plump well nourished women. It is characterized by recurrent nodular and ulcerative lesions. Lesions are usually localized to the lower legs especially calf area, but can affect other areas. We are presenting a case of a 54-years-old lady with recurrent crops of nodules on legs. Mantoux test was positive. Histopathology revealed lobular panniculitis, epithelioid cells, lymphocytes and giant cells surrounding foci of caseous necrosis which was suggestive of erythema induratum. She was put on ATT.

Keywords: Erythema induratum, Nodular vasculitis, Cutaneous tuberculosis, Tuberculid, Tuberculous granuloma, Panniculitis

Case History

A 54-year-old lady presented with history of recurrent crops of edematous lesions on both legs for the past 2 years, lesions lasted for around 4 weeks, leaving behind pigmentation. There was associated complaint of fatigue and leg pains. On detailed systemic inquiry there was no history of cough, low grade fever, night sweats, weight loss, change in bowel habits or any other systemic complaints. There was no personal or family history of tuberculosis. On examination, she was obese, had multiple discrete, erythematous, hot, tender subcutaneous nodules, 2× 2 cm in size, on posterior aspects of both legs (Fig.1a,b) with one of the lesion having superficial ulceration (Fig 1c). Systemic examination was unremarkable. Panniculitis was suspected with erythema induratum in differential, thinking of typical site of lesions. Skin biopsy from a nodule on leg revealed lobular panniculitis in the subcutaneous fat with vasculitis producing ischemic necrosis of fat globules, and foci of caseous and coagulative necrosis. Epithelioid cells, lymphocytes and giant cells were seen forming granulomas. (Fig 2a, b). The histopathology was suggestive of erythema induratum. Blood investigations showed raised ESR level of 54 mm/hr. Mantoux test was positive. Rest of the investigations which included renal and liver function test and urine examination were normal. Chest x- ray was normal. She was started on antituberculous therapy (ATT) according to her weight.



Fig. 1. a Nodular lesions on calf area (EIB)



Fig. 2.b Closer view of nodular lesions (EIB)



Fig. 1.c Ulcerated lesion (EIB)

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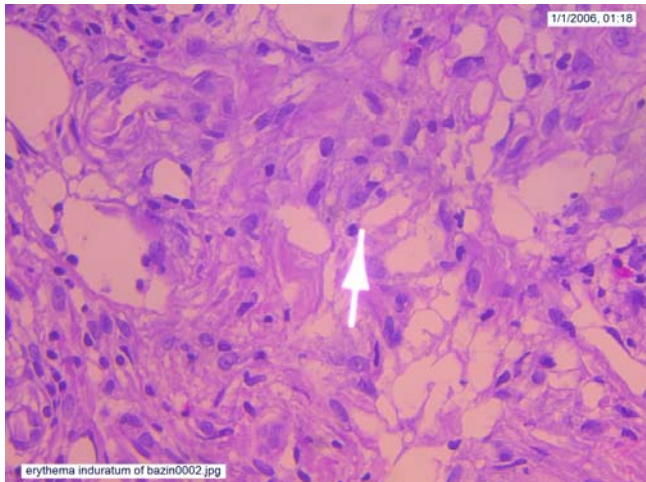


Fig. 2.a: Lobular panniculitis with tuberculoid granulomas

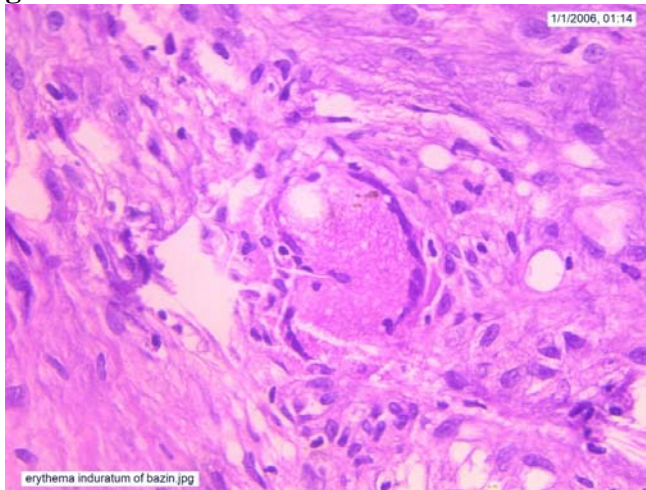


Fig. 2.b: Tuberculoid granuloma, showing giant cell

Discussion

EIB was first described by Bazin in 1861 as a condition occurring 'on the legs of female laundresses and in young and plump well nourished women with the typical phenotype of those with the scrofula'¹. The lesions are characterized by recurrent nodular and ulcerative lesions and occur secondary to tuberculosis elsewhere in the body. Lesions are usually localized to the lower legs, but can affect other areas. In most published series, the disease has occurred at least four times more commonly in women than men². EIB has been regarded as a manifestation of tuberculin hypersensitivity. The concept of tuberculids was introduced by Jean Darier in 1896 to designate a group of dermatoses in individuals with a previous history of active TB, who had a tuberculoid histopathology and presented with intense reaction to tuberculin.

Whitfield and Galloway considered that under the term EIB there were two subsets of patients, one related and the other unrelated to TB. To differentiate the nontuberculous variant (which was named erythema induratum of Whitfield) they indicated that these patients were older, had painful lesions, has less tendency to ulcerate, and healed more rapidly with rest than who has EIB. In this variant there was no history of TB and tuberculin test was negative and histology showed no tuberculoid granulomas. In 1945, Montgomery and colleagues introduced the term nodular vasculitis (NV) to designate the lesions of erythema induratum of nontuberculous origin. Most authors have concluded that the clinicopathologic differences between EIB and NV are so subtle that it is impossible to separate them³. However, it is agreed that the term erythema induratum should be reserved for those cases in which the tuberculous origin can be proved. NV is now considered as a multifactorial syndrome of lobular panniculitis in which TB may or may not be one of etiologic components.

The most frequent locations of these lesions are the posterior and anterolateral aspects of the legs. The feet, thighs, arms, and face are rarely affected. It is most frequently seen in patients with fatty legs, diffuse erythema, cutis marmorata and follicular hyperkeratosis. The disease typically runs a chronic course with relapsing episodes every 3-4 months. Patients are otherwise healthy and there are no accompanying systemic symptoms. The lesions of EIB can coexist with other tuberculids, such as the papulonecrotic tuberculid⁴.

Histopathologically the features are those of either focal or diffuse, lobular or septolobular, granulomatous panniculitis in association with neutrophilic vasculitis⁵ of either large or small blood vessels. The granulomatous inflammatory infiltrates show epithelioid cells, foamy histiocytes and giant cells that may be of Langhan's type or foreign body type. There are areas of coagulative and caseation necrosis and, usually poorly developed granulomas, although mixed, pallasading and lipophilic granulomas can occur^{6,7,8}. Special stains do not demonstrate the presence of acid fast bacilli.

The casual relationship between EIB and TB⁹ has been based on a few circumstantial pieces of evidence in some patients, such as (a) a high degree of hypersensitivity to tuberculin skin testing in most patients, (b) a frequent personal or family history of TB (the percentage of EIB patients with chest and radiographic findings that suggest TB varies from 2% to 65%), (c) presence of active TB foci, (d) occasional

coexistence with other tuberculids such as papulonecrotic tuberculid or lichen scrofulosorum in the same patients and (e) response to antituberculous treatment.

Shimizu et al. reviewed 66 Japanese patients with EIB and found that 25.8% had lymph node and 15.2% had lung involvement with TB. EIB was described for the first time after Bacille–Calmette–Guerin vaccination in an 8-month-old Japanese boy .

EIB needs to be differentiated from diseases that produces chronic, nodular eruptions on the legs, including erythema nodosum, cutaneous polyarteritis nodosa, sclerosing panniculitis, perniosis, pancreatic panniculitis, lupus erythematosus profundus and subcutaneous panniculitis like T cell lymphoma.

The diagnosis of EIB is made on the basis of the characteristic clinical morphology, a positive tuberculin test and circumstantial evidence of TB elsewhere in the body, supplemented by histopathologic findings. Detection of Mycobacterium tuberculosis (MTB) deoxyribonucleic acid (DNA) by polymerase chain reaction (PCR)¹⁰ on the biopsy specimen further supports the diagnosis. However failure to detect MTB by PCR does not exclude the diagnosis of EIB. A positive MTB DNA recovery by PCR^{11,12} of EIB biopsy specimen varies from 25% to 77%. Many a times diagnosis can be confirmed by a good response to antituberculous treatment. In cases with negative TB findings (chest radiography, Tuberculin testing, PCR) testing for chronic hepatitis C virus infection¹³ or other infections is recommended.

Full specific antituberculous therapy should be given^{14,15,16}. There is no place for monotherapy as has been recommended in the past , as drug resistance is likely to develop, which effectively means that no treatment is being given.

Our case was proven to be of tuberculous etiology with typical site of lesions, a positive mantoux test and histopathology . Another typical feature noted in our case was of ulceration of the nodules.

Conclusion

EIB is a tuberculid showing lobular panniculitis classified under cutaneous tuberculosis. The diagnosis of EIB is based on cutaneous characteristics, a positive mantoux test and histopathologic findings. This case is being presented to emphasize the importance of conducting a search for TB in all cases of EIB. Furthermore, the need of providing ATT for patients with EIB of proven tuberculous etiology has to be highlighted in view of preventing recurrences.

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