Erythema Induratum of Bazin – Tuberculosis in disguise

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Abstract

Erythema Induratum of Bazin (EIB) is a tuberculid showing lobular panniculitis. EIB is classified under cutaneous tuberculosis. A diagnosis of EIB is based on cutaneous characteristics, a positive mantoux test, evidence of tuberculosis and histopathological findings. We present a case of a 43-year-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. Her lesions responded to antitubercular therapy (ATT).

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

1. Case History

A 43-year-old lady presented with history of recurrent crops of swellings on both legs for the past 2 years, each crop subsiding within 2–4 weeks, leaving behind hyperpigmentation. There was no history of associated constitutional features or systemic complaints. There was no personal or family history of tuberculosis. On examination, she was obese (Body mass index – 30), had multiple discrete, erythematous tender subcutaneous nodules, 1 × 2 cm in size, and diffuse brownish black pigmentation on anteromedial and posterior aspects of both legs and ankles (Fig. 1). Systemic examination was within normal limits. We made a clinical diagnosis of panniculitis. Skin biopsy from a nodule on leg revealed lobular panniculitis in the subcutaneous fat with vasculitis producing ischemic necrosis of fat globules, foci of caseous and coagulative necrosis. Epithelioid cells, lymphocytes and giant cells forming broad zones of inflammation surrounding necrosis were seen (Fig. 2). Ziel–Neelsen stain showed no acid fast bacilli. The histopathology was suggestive of erythema induratum. Blood investigations showed raised ESR level of 78 mm/hr. Rest of the investigations which included hemogram, renal and liver function test and urine examination were normal. Mantoux test was positive (16 mm induration). Chest x ray was normal. She was started on antitubercular therapy (ATT). She responded to ATT and the lesions started to resolve.

2. Discussion

Erythema Induratum of Bazin (EIB) is a chronic nodular eruption that usually occurs on lower legs of young or middle aged women. Currently the term Nodular Vasculitis
(NV) is often used as synonym, although historically considered as different entities. EIB has been regarded as a manifestation of tuberculin hypersensitivity (Mascaro and Baselga, 2008) whereas NV would represent the nontuberculous counterpart. Bazin, first described EIB in 1855, a time when the tubercle bacillus had not yet been identified, as a condition more frequently “on the legs of female laundresses and in young and plump, well nourished women with typical phenotype of those with scrofula”. When mycobacterium was discovered in 1882 and mycobacteria were found within cervical lymph nodes, the term “scrofula” was linked to tuberculosis (TB). 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 them (Cho et al., 1996). 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 typical patients who present with EIB are usually young to middle aged women. In a study of 32 patients with EIB, 25 were females and 7 males, and the ages of patients ranged from 13 to 66 years (mean 36.6 years) (Cho et al., 1996). They present with recurrent flares of violaceous nodules or deep seated plaques on the legs. The lesions are cold, surprisingly not painful and have a tendency for central ulceration. Most lesions resolve spontaneously within few months, leaving postinflammatory hyperpigmentation and occasionally atrophic pigmented scars.

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 tuberculid.

EIB is a lobular panniculitis that shows a granulomatous inflammation with focal necrosis, vasculitis and septal fibrosis in varying combinations, the granulomatous inflammatory infiltrates show epithelioid cells, foamy histiocytes and giant cells that may be of Langhan’s type or foreign body type. Well formed tuberculoid granulomas with central caseous necrosis are occasionally seen. The presence of vasculitis is not always identified and is not considered a requisite for making the diagnosis (Mascaro and Baselga, 2008). Special stains do not demonstrate the presence of acid fast bacilli.

The casual relationship between EIB and TB 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 (Mascaro and Baselga, 2008).

Shimizu et al. (2003) 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 (Inoue et al., 2006).

EIB can be mistaken for disease 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) 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 of EIB biopsy specimen varies from 25% to 77% (Mascaro and Baselga, 2008). 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 infection or other infections is recommended.

In an Indian study of cutaneous tuberculosis EIB was seen in 5% cases (Puri, 2011). In a study conducted in Spain, out of 55 cases of cutaneous tuberculosis, 29 were tuberculids, erythema nodosum being the most frequent form (49%) followed by EIB (3.6%) (Rodriguez, 2008).

Many authors are of the opinion that EIB should be treated with antituberculous therapy, especially in cases with positive tuberculin test or PCR positivity (Mascaro and Baselga, 2008). Schneider et al. treated 20 patients who had EIB with ATT and reported clearance in all cases within 1–6 months (Schneider et al., 1995). Some have considered EIB to be type III or IV hypersensitivity to MTB antigens. This may explain the partial response to corticosteroids (Chew et al., 2005).

Supportive measures, NSAIDS, potassium iodide, dapsone, colchicines, antimalarials, tetracycline, prednisolone and gold salts can alleviate symptoms and induce remission, but they do not avoid late recurrences (Mascaro and Baselga, 2008).

A tuberculous etiology was proven in our case of EIB with a positive mantoux test, histopathology and by its response to ATT. The atypical feature that was noted in our case was the absence of ulceration of the nodules. Atypical form of EIB have been described chiefly in men, including unilateral lesions, lesions involving the shins, thighs, buttocks, arms and other sites, and these resolving without ulceration (Requena, 2001). Khandpur et al. reported a case of EIB on shins, arms and forearms that did not ulcerate mimicking erythema nodosum (Khandpur et al., 2008).

3. 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 in 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.

Conflict of interest

The authors declare that they have no conflict of interest.

References