

A Case of Erythema Induratum Associated with Tuberculosis

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History of Present Illness

A 51yo female with a history of chronic anemia and recent positive Quantiferon-TB gold test presented with a 3-month history of a painful rash on the bilateral lower extremities. She also reported a nonproductive cough, low grade fevers, and recent weight loss. CXR was notably negative, computed tomography chest revealed nonspecific diffuse subtle ground glass interstitial haziness.

Treatment and Clinical Course

Though there was much discussion regarding whether the patient had active vs latent TB as sputum for AFB smear was negative x 3 and CXR was negative, the decision was ultimately made to treat as active TB in the setting of cough, weight loss, low grade fevers, and nonspecific findings on chest CT.

Infectious disease and the local health department guided treatment with isoniazid, rifampin, pyridoxine, ethambutol, and pyrazinamide for 2 months, followed by 4 months of only isoniazid and rifampin. EI resolved concurrently with TB.

Physical Exam, Imaging, Pathology

Physical Examination

Numerous erythematous to hyperpigmented indurated subcutaneous nodules were scattered over bilateral lower legs, predominantly on the posterior calves. There were also focal areas of superficial ulceration overlying several of the subcutaneous nodules.

Chest CT Radiology Impression

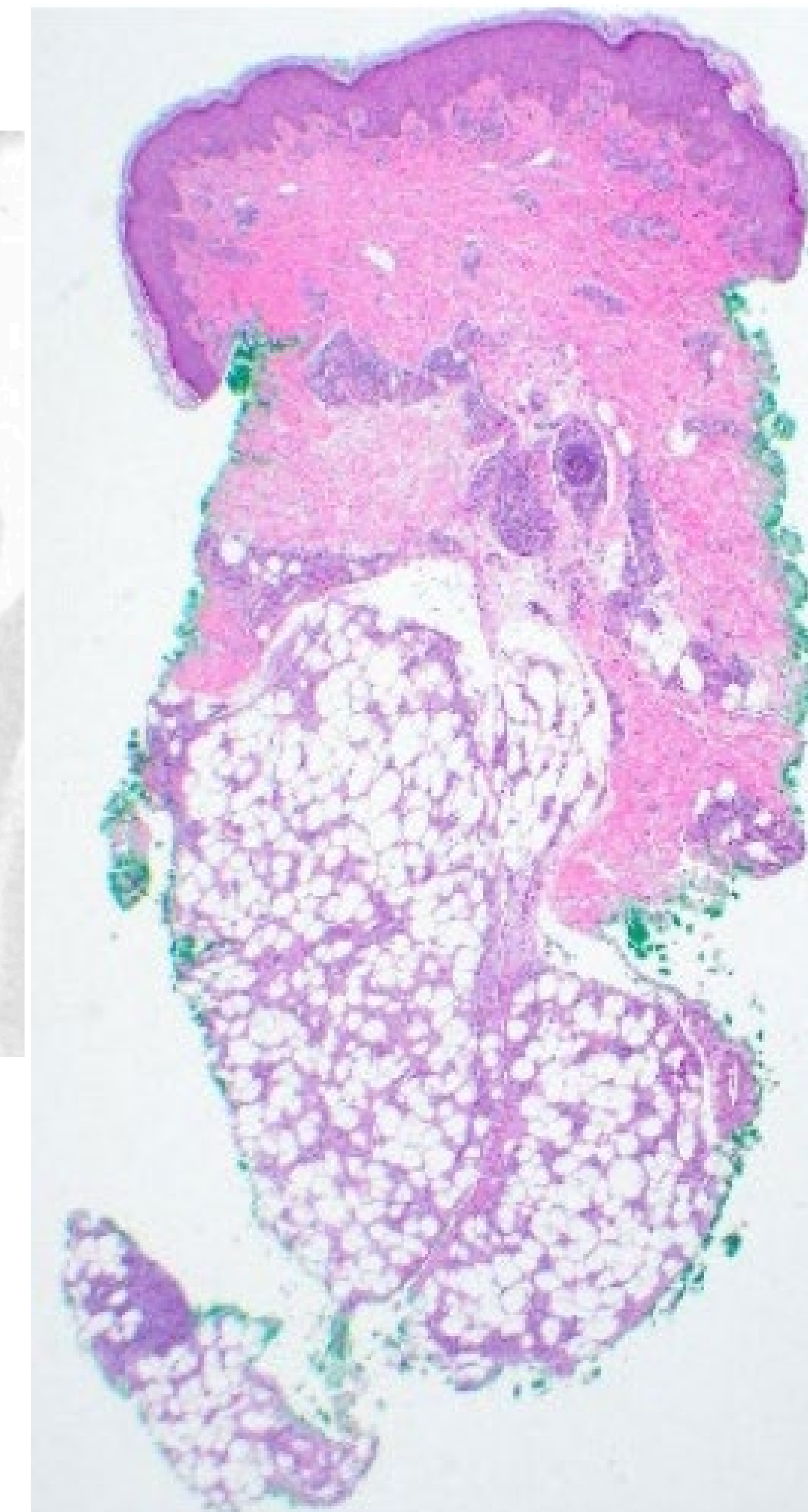
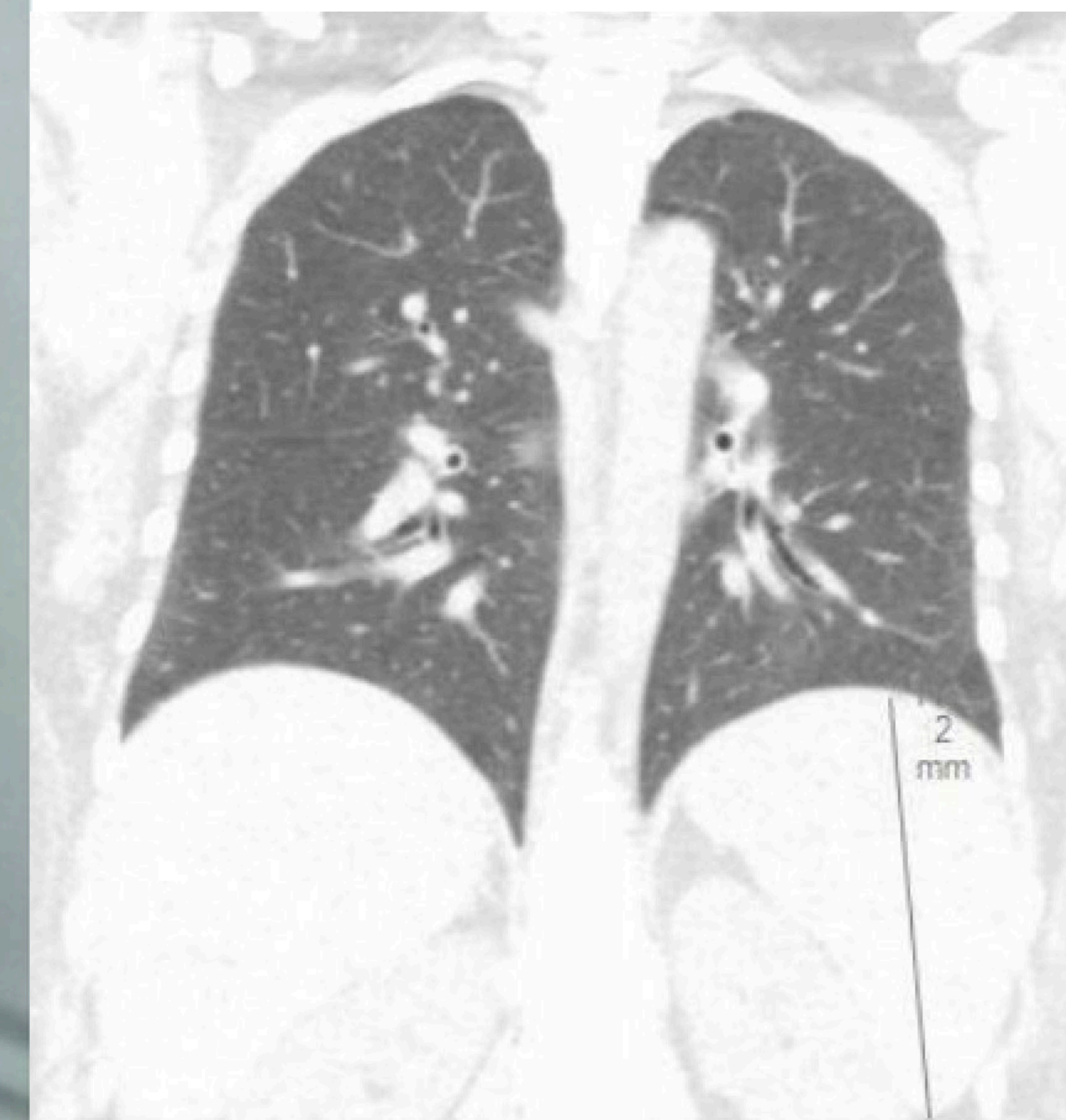
No suspicious pulmonary nodules or pulmonary infiltrates. Nonspecific diffuse subtle ground glass interstitial haziness was noted.

Histopathology

Biopsy of the lesions showed sections with fat necrosis involving the subcutaneous fat lobules and rare granulomas noted at the periphery of a fat lobule. The septum was mildly thickened, but the biopsy showed predominantly lobular involvement, unlike the predominant septal involvement seen in erythema nodosum. There was a lymphocytic infiltrate with histocytes and eosinophils in the subcutis. No definitive vasculitis or caseating necrosis was identified making the diagnosis of polyarteritis nodosum and cutaneous tuberculosis, respectively, less likely. Infectious stains were negative.

Discussion

EI is histologically distinguished from EN by the presence of predominantly lobular panniculitis, as opposed to the septal predominance of EN) and positivity for TB. This case is atypical as the vast majority of EI cases have identifiable vasculitis on pathology. EI is typically associated with active TB and is considered a hypersensitivity reaction to mycobacterial antigens, though cases of latent TB triggering EI have been reported as in the present case. The mainstay of treatment for TB associated EI is to treat the underlying tuberculosis.



References

1. Connors, W.J., Fisher, D.A., Kunimoto, D.Y. et al. Program-wide review and follow-up of erythema Induratum of Bazin and tuberculosis-associated ocular inflammation management in a TB low-incidence setting: need for improved treatment candidate selection, therapy standardization, and care collaboration. *BMC Infect Dis* 19, 97 (2019).
2. Alothman A, Al Qahtani M, Al-Khenaizan S. Erythema induratum: what is the role of Mycobacterium tuberculosis?. *Ann Saudi Med.* 2007;27(4):298-300.