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Primary Tubercular Erythema Nodosum – Case Series

Dr. Natraj, M[1*], Dr. S. P. Burma[1], Dr. Nisha Parveen[1], Dr. Vignesh, S[1]

[1]Department of chest & TB, ANIIMS, Port Bair DHS Annexe Building Near Rear Gate, G.B.Pant Hospital Atlanta Point , Port Blair-744104

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***Corresponding author:** Dr. Natraj, M
Department of chest & TB, ANIIMS, Port Bair DHS Annexe Building Near Rear Gate, G.B.Pant Hospital Atlanta Point , Port Blair-744104

Abstract **Case Report**

Cutaneous tuberculosis is an uncommon small subset of extra pulmonary tuberculosis. Erythema nodosum is a form of panniculitis frequently seen in women that presents as red lumps commonly seen in shins. It is associated with numerous diseases such as tuberculosis, pregnancy, malignancy, streptococcal infections and sarcoidosis or can be even drug related. Here we report a case series of two cases of erythema nodosum presenting as sign of primary tuberculosis.

Keywords: Tuberculosis, Cutaneous tuberculosis, Erythema nodosum.

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INTRODUCTION

Erythema nodosum is a type of panniculitis presenting a red lumps most commonly seen on the shin and less commonly seen on thighs and forearms. This is painful condition of the subcutaneous fat presenting as tender, erythematous nodules of varying size [1]. The most common cause of erythema nodosum is idiopathic (55%) but it has also been associated with various diseases including streptococcal infections in children [2]. It is also seen in conditions such as tuberculosis, sarcoidosis, malignancy, pregnancy and deep lying fungal infections [3]. Certain drugs such as oral contraceptives and antibiotics (sulphonamides, amoxicillin) along with certain viral infections (HIV, EBV, Herpes, Hepatitis B and Hepatitis C) syphilis, autoimmune diseases, lymphoma, parasites (amoebiasis, giardiasis) can also cause erythema nodosum rarely [4]. Tuberculosis causing erythema nodosum should be considered in countries where it is endemic, especially in India [1]. Cutaneous tuberculosis comprises as a small fraction of extra pulmonary cases of India (less than 2%) and it has wide variety of manifestations. The potentiality of skin react to in many ways to a single agent is nowhere better illustrated then in tuberculosis [5].

CASE PRESENTATION

Case One

61 year old female presented with six weeks history of painful reddish lesion over her shin bilaterally. She had two nodules in her right side and one nodule in her left (Fig A). She did not have any other complaints of fever, cough, expectoration, myalgia, weight loss or loss of appetite. On inspection the nodules were red, tender, warmth and swollen with limitations of movements present over the tibia based on which erythema nodosum was established. They measured between 3-5 cms in size. Her past medical or surgical history was not significant with any co morbid.

Laboratory evaluation for all potential conditions causing erythema nodosum was performed. CBC, LFT, RFT, Serum Electrolytes, HIV, Serum LDH, Serum ACE, Serum Calcium, Viral markers, 24 hours urine calcium, Stool culture, Chest X ray were all normal. Her Tuberculin skin test was strongly positive. Skin biopsy from the nodule was suggestive of tuberculosis (Fig B). After no other cause and other organ involvement was clearly established, diagnosis of primary tubercular Erythema nodosum was made and patient was started on appropriate anti tuberculosis drugs based on NTEP programme.

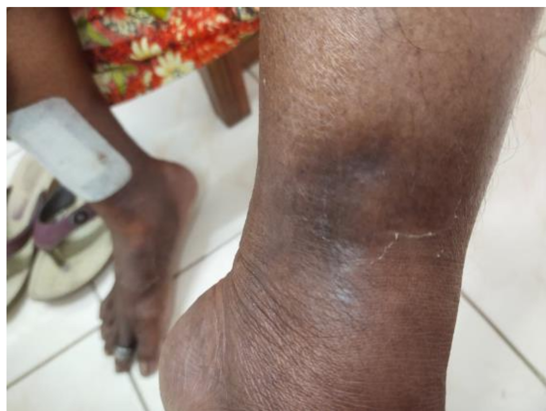

Fig A: Reddish Tender Skin Lesion

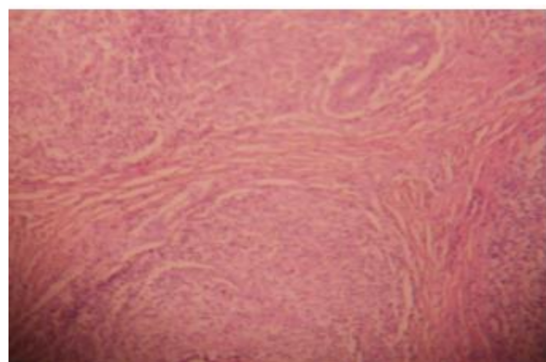

Fig B: Biopsy from the Skin Lesion Showing Granuloma with Langnans Gaint Cells

Case Two

55 year old female presented with 15 days history of painful reddish lesion over her shin. She had a single nodule only on her right side shin area. She gave no history of any such lesions anywhere else in the body. Patient had no complaints of cough, expectoration, hemoptysis, fever, myalgia, weight loss or loss of appetite. On inspection the nodule were red, tender, warmth were based on which erythema nodosum was established. Patient is a known hypertensive and diabetic on regular medications. She has no past surgical history.

Laboratory evaluation for all potential conditions causing erythema nodosum was performed. CBC, LFT, RFT, Serum Electrolytes, HIV, Serum LDH, Serum ACE, Serum Calcium, Viral markers, 24 hours urine calcium, Stool culture, Chest X ray were all normal. Her tuberculin skin test was positive. Skin biopsy taken from the nodule was suggestive of tuberculosis, based on which the diagnosis of primary tubercular erythema nodosum was made and she was started on anti tuberculous drug based on NTEP programme.

Discussion

Cutaneous tuberculosis accounts for less than 2% of EPTB cases and presents with nonspecific and varied clinical presentation. Estimated incidence of this disease is about 0.1% of total patients attending the dermatology outpatient department [5]. Erythema nodosum is considered type IV delayed hypersentivity response to various antigens. Even though the exact pathogenesis is not fully understood, evidence suggests that it is due to the immune complex deposition in the septal venules of the subcutaneous fat, neutrophil recruitment with the production of reactive oxygen intermediates, tumor necrosis factor and granuloma formation [6]. Exact number is not known but it is believed to be one to five per 100,000 persons with an increased predisposition to the females between 20 – 40 yrs [7]. The diagnosis of erythema nodosum is often made clinically. A biopsy can be made from the lesion to rule out other possible etiologies. Since multiple diseases can cause erythema nodosum once the diagnosis is established additional associated etiologies should be considered [6]. Since our patients were diagnosed with tubercular erythema nodosum they were started on appropriate anti tubercular medication.

NOTE: Our second patient did not give consent for taking pictures of the lesion.

References

1. Rizvi, Z., Iqbal, T., Javed, A., & Rizvi, A. (2019). Erythema nodosum: a consequence of tuberculosis. *Cureus*, *11*(5). DOI 10.7759/cureus.4724
2. Wheeler, D. J., Cascino, T., Sharpe, B. A., & Connor, D. M. (2017). When the script doesn't fit: An exercise in clinical reasoning. *Journal of general internal medicine*, *32*(7), 836-840.
3. Patel, R. R., Kirkland, E. B., Nguyen, D. H., Cooper, B. W., Baron, E. D., & Gilliam, A. C. (2008). Erythema nodosum in association with newly diagnosed hairy cell leukemia and group C streptococcus infection. *The American journal of dermatopathology*, *30*(2), 160-162. doi:10.1097/ DAD.0b013e3181618a8a
4. Schwartz, R. A., & Nervi, S. J. (2007). Erythema nodosum: a sign of systemic disease. *American family physician*, *75*(5), 695-700.
5. Sehgal, V. N., Srivastava, G., Khurana, V. K., Sharma, V. K., Bhalla, P., & Beohar, P. C. (1987). An appraisal of epidemiologic, clinical, bacteriologic, histopathologic, and immunologic parameters in cutaneous tuberculosis. *International journal of dermatology*, *26*(8), 521-526.
6. Laborada, J., & Cohen, P. R. (2021). Tuberculosis-Associated Erythema Nodosum. *Cureus*, *13*(12), e20184. DOI 10.7759/cureus.20184
7. Kakourou, T., Drosatoua, P., Psychou, F., Aroni, K., & Nicolaidou, P. (2001). Erythema nodosum in children: a prospective study. *Journal of the American Academy of Dermatology*, *44*(1), 17-21.