Case Report

ERYTHEMA NODOSUM: A CUTANEOUS SIGN OF TUBERCULOSIS

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ABSTRACT

Tuberculosis is a very common disease in developing countries often presenting in an atypical manner. High level of suspicion is required to diagnose it, thereby preventing its morbidity and mortality. We present two cases of young children presenting with erythema nodosum as a hypersensitivity reaction to tuberculoprotein without any evidence of active tuberculosis in the body.

Keywords: Erythema nodosum, tuberculo-protein, hypersensitivity

INTRODUCTION

Hypersensitivity reaction to tuberculo-protein can be the first and only presentation of tuberculosis in a patient with/without evidence of active disease. These reactions can be of various types like erythema nodosum, phlyctenular conjunctivitis, increased dermal protein hypersensitivity, pleural or pericardial effusion and reactive polyarthritis. However, simultaneous occurrence of more than one reaction in a single patient without any evidence of primary disease has been reported very infrequently.[1]

Erythema nodosum is a rash that is characterized by pretibial erythematous, tender nodules found in the deep dermis and subcutaneous tissue. It is a hypersensitivity reaction and results from a variety of infectious, inflammatory, connective tissue disorders and certain drugs.[2] Tuberculosis is one of the infectious causes of erythema nodosum, but erythema nodosum as a sole presentation of tuberculosis is very rare.

CASE REPORT

A 10-years old boy, a madrasa student, presented to OPD of Madina Teaching Hospital, University Medical & Dental College, Faisalabad, with painful nodules over both the shins for last one week. There was a progressive increase in the size of the nodules as well as severity of pain. The child started having difficulty in walking because of pain. There was also complaint of redness of both the eyes associated with watery discharge and irritation for the last one week. The child had no other symptoms like fever, cough, sore throat, rash over other sites of body, anorexia, weight loss or any bleeding tendency. His past, family and drug history were unremarkable. Examination showed stable vitals, pulse 96/minute, temperature 98F, respiratory rate 20/minute and BP 100/60mmHg. Local examination revealed multiple erythmatous nodules, measuring about 3×5 cm, tender to touch, distributed symmetrically over both the legs. Joint examination was normal and there was no visceromegaly. Examination of respiratory system and cardiovascular system was also normal. The diagnosis of Erythema Nodosum was made clinically and the underlying cause was evaluated.

The relevant investigations revealed Hemoglobin 12.6g/dl, TLC 13000/cmm (polys 36%, lymphocytes 55%, monocytes 7%), ESR was 72 mm in 1st hour, ASO titer was < 200IU. ANA was negative and the chest radiograph was normal. Mantoux test was performed and was found to be 18mm after 72 hours. Abdominal ultrasonography was normal without any evidence of visceromegaly or

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lymphadenopathy. The eye examination turned out to be the episcleritis. On the basis of raised ESR and positive Mantoux test, patient was diagnosed as having Tuberculosis. Another child 8 years old from the same madrsa presented with similar lesions, about 10 days later and was investigated on the same lines. That second case also turned out to be tuberculous on the basis of raised ESR and positive Mantoux test. Both of the patients were prescribed first line antituberculous therapy and follow up was done. The lesions of erythema nodosum cleared during second month of therapy.

Figure 1. Erythema Nodosum

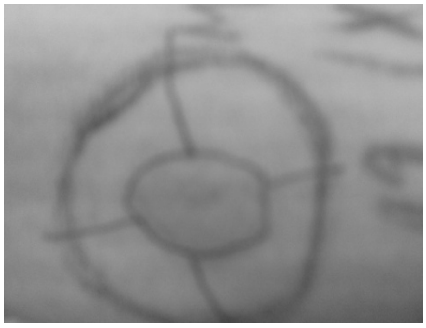

Figure 2. Mantoux Test Strongly positive

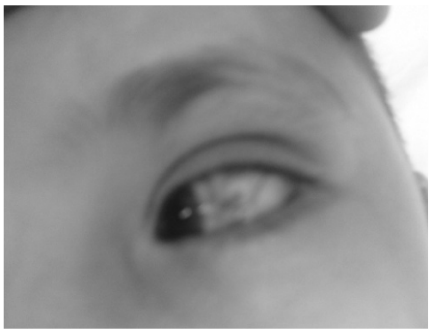

Figure 3. Episcleritis

Figure 4. Clearance of rash with ATT

DISCUSSION

Erythema nodosum is presumed to be a hypersensitivity reaction that may be triggered by antigens usually associated with infections, particularly group A β hemolytic streptococci and tuberculosis. It may occur in association with several systemic diseases like sarcoidosis, inflammatory bowel disease, rheumatological, autoimmune diseases and malignancies. Drugs such as sulphonamides, phenytoin and oral contraceptives have also been implicated. However 70% of the cases turn out to be idiopathic.[3] The finding of erythema nodosum should lead to possibility of an underlying cause.

The lesions evolve from erythematous to blue, flat or raised nodules usually limited to the extensor aspects of the lower legs, distributed symmetrically, with occasional spread to thighs or arms.[4] Erythema nodosum must be differentiated from cellulites, insect bite, thrombophlebitis and fungal skin infections. Erythema nodosum may occur in children and patients older than 70 years, but it is more common in young adults aged 18–34 years.

Tuberculosis is a very common infectious disease of the developing countries like Pakistan. There is multisystem organ involvement in tuberculosis including lungs, lymph nodes, liver, spleen, intestines, skin and brain. Erythema nodosum is an atypical presentation of this typical disease and is very rare. A case of abdominal tuberculosis has been reported that presented with erythema nodosum.[5] Another case of a young lady has been reported in China that presented with tuberculosis of breast and erythema nodosum.[6] In children with primary tuberculosis infection, erythema nodosum has been described and may be associated with phlyctenular conjunctivitis.[7]

When erythema nodosum is diagnosed, it is important to find out the underlying conditions. The evaluation includes a detailed history, including drug and oral contraceptive use, a careful physical examination and a chest X-ray. The tuberculin skin test is always strongly positive in case of tuberculosis and a negative skin test rules out tuberculosis as the etiology.[8] Routine blood investigations are done to rule out any systemic infection and Computed Tomography scan is done to diagnose sarcoidosis. Other relevant investigations include ANA, ASO titer to rule out group A streptococcal infection which is one of the commonest causes, CRP and abdominal USG.

The treatment of erythema nodosum depends upon the treatment of underlying cause. Non steroidal anti-inflammatory drugs (NSAIDS), bed rest and cool wet compresses are advised for relief of pain.[9] Corticosteroids is needed in some cases provided that there is no infection or malignancy that has acted as trigger. Generally, the prognosis of erythema nodosum is very good and most people do not have further problems.

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