CASE REPORTS

ISOLATED TUBERCULOUS ABSCESS OF BRACHIALIS MUSCLE WITHOUT BONE INVOLVEMENT

Purvi Mittal, Yashwant Kumar Rao, Deepankar Bhattacharya

Abstract

Skeletal muscle tuberculosis without underlying osseous or extra osseous involvement is an extremely rare presentation of tuberculosis. We describe a case of tuberculous abscess of brachialis muscle in a 13 year old boy. Diagnosis was established by PCR and histology. The patient was on standard four-drug regimen with no evidence of disease activity at the three month follow-up.

Keywords : Tuberculosis, Abscess, Brachialis, Skeletal muscle

Introduction

About 3% of patients with tuberculosis (TB) have musculoskeletal involvement, mostly spondylitis, osteomyelitis or arthritis, however the skeletal muscles are rarely affected by tuberculosis as it is an unfavorable site for survival and multiplication of Mycobacterium tuberculosis (MTB). (1) Only two cases of tubercular involvement of skeletal muscle in children have been described in literature till now. (2,3) We present a case of intramuscular TB of brachialis muscle in an immunocompetent male child without any primary source of infection.

Case Report

A 13 year old male child presented to us with fever for 15 day and pain and swelling over right upper arm for 15 days. His past medical history was non-contributory. There was no family history of TB or exposure to any known person with active TB. There was no history of trauma or intramuscular injection at the local site. Examination revealed an, ill-defined mass of 6 cm x 4 cm in size in the anterior upper arm, The skin over it was tense with discharging pus. There was no limitation of motion in the ipsilateral shoulder and elbow joint, neither was there any regional lymphadenopathy or neurovascular involvement. Under topical anesthesia, the abscess was drained and local surgical debridement was done. The aspirate was purulent and was sent for Ziehl Nielsen and gram staining, which revealed presence of staphylococcus aureus along with 2-3 acid fast bacilli (AFB). Microscopy showed necrotizing granulomas, suggestive of tuberculous granulation tissue infiltrating the muscle. The sample was positive for MTB by polymerase chain reaction (PCR). Later TB culture was also positive for MTB. Radiographs were normal, showing intact humerus. MRI scan showed a mass in the brachialis muscle. Chest X-ray was normal. Serology for HIV was negative. Workup for other congenital immunodeficiencies were not done. The patient was started on a regimen of four-drug antitubercular therapy (ATT) consisting of isoniazid (H), rifampicin (R), pyrazinamide (Z) and ethambutol (E) which was given for 2 months followed by HR for 4 months. He had marked improvement and there was no recurrence after completion of treatment.

Discussion

Selective primary tuberculous skeletal muscle involvement without osseous involvement is rare. This rare occurrence has been attributed to high lactic acid content of muscles, absence of reticuloendothelial / lymphatic tissue, rich blood supply and the highly differentiated state of muscle tissue. (4) TB can involve skeletal muscles by extension from bone, synovial lining of joints or tendon sheaths; by direct inoculation; and, rarely by hematogenous dissemination. (5) There are very few reports in the English literature of primary muscular tuberculosis without any involvement of bone or in immunocompetent patients. (6-11) It is of interest to note that most of the reported cases have been described frequently in association with immunodeficient individuals as in HIV infected patients, renal failure patients, patients on chemotherapy or corticosteroid and chronic drug abusers. (12-14) A few reports have indicated that primary tuberculosis in muscle may be transmitted by direct inoculation with contaminated needles and syringes. (15) Our case is of interest because it presented as cellulitis of right upper arm and was also treated for the same until the Ziehl Nielsen staining revealed presence of AFB which was proven to be MTB on culture. There were no associated co-morbid conditions and there was no involvement of underlying bone or the bursae as evident from the radiographs and MRI findings.

As seen in the present case, skeletal muscle tuberculosis may present with a short clinical course and can be misdiagnosed as cellulitis, or perhaps a hematoma with secondary bacterial infection.

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From: Department of Pediatrics, GSVM Medical College, Kanpur, India.

Address for Correspondence:
Dr Purvi Mittal, Flat no. 7 Panch Rattan app. 7/128 Swaroop Nagar, Kanpur, 208002, India

Email : purvimittal@gmail.com

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