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Case Report

Tubercular Osteomyelitis of rib: An unusual form of skeletal tuberculosis.

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ABSTRACT: Musculoskeletal tuberculosis is one of the common form of extra-pulmonary tuberculosis. It is thought to be caused by the reactivation of mycobacteria lodged into bones during mycobacteremia which occurs at the initial stages of mycobacterium tuberculosis infection. The large joints and spine are commonly affected in tuberculous osteomyelitis because of their rich vascular supply. Extension of this osteomyelitis into adjacent joint may cause tuberculous arthritis. Another mechanism of skeletal spread is believed to be caused by extension of infection from lung to spine along with the Batson paravertebral venous plexus. Usually these tubercular infections are caused by Mycobacterium tuberculosis but with the epidemic of Acquired immunodeficiency syndrome (AIDS), cases of non-tuberculous mycobacterial skeletal infections are also on the rise. Tuberculosis of ribs is one of the common causes of destructive lesions of the ribs. The usual presenting complaints are fever, pain, swelling and discharging sinus. History of tuberculosis contact or past history of pulmonary Kochs may be present. Laboratory investigation may show positive montoux test and raised ESR. Imaging is important in the diagnosis. X-Ray may show expansile, osteolytic lesion with sclerosis. Computed tomography may show rib erosion and destruction with adjacent abscess formation. Zn staining of the discharging pus may show Acid fast bacilli.

We present here a case of tubercular osteomyelitis of left 5th rib in a 10 year old girl who presented with history of recurrent chest wall abscesses. At the time of presentation she was found to be having ulcers adjacent to the left nipple with discharging sinus. ESR was raised and montoux was positive. Imaging by X-ray and Computed Tomography showed features of osteomyelitis. Patient was treated with IV antibiotics and antitubercular drugs (2HRZE + 10 RHE). She responded well to above treatment and ulcer and draining sinus healed. We present this case as the tubercular osteomyelitis usually involves large joints and spine. Involvement of ribs is uncommon. This case emphasizes that differential diagnosis of tubercular osteomyelitis of ribs should be kept in mind whenever these is history of recurrent abscess formation and discharging sinus in chest wall.

Keywords: Tubercular Osteomyelitis, Rib destruction, sinus formation, Antitubercular treatment.

Introduction:

Tuberculosis of the ribs chest wall constitutes 1-5% of all cases of musculoskeletal tuberculosis. Though the common bones involved in tubercular osteomyelitis are spine (potts spine), femur, knee joint, shoulders, hands and elbows, no bone is exempt from developing tubercular osteomyelitis [1]. Tuberculosis of the ribs constitutes 2% of the total cases of musculoskeletal tuberculosis. As the overall incidence of tuberculosis increase due to emergence of multi drug resistant tuberculosis and acquired immunodeficiency syndrome the incidence of tubercular osteomyelitis involving ribs and anterior chest wall is also expected to rise in near future [2]. Various causative mechanisms are proposed for development of osteomyelitis of the ribs. Some researchers believe that during initial mycobacteremia of primary tuberculosis the organisms get lodged at different tissues. These organisms get re-activated from latent foci whenever there is immunosuppression and then cause musculoskeletal or tubercular osteomyelitis including the one that involves ribs. While some other investigators have postulated that tubercular osteomyelitis of ribs occur due to direct extension from contagious lung or pleura [3]. Tubercular affection of the ribs is the common cause of osteolytic lesion second only to metastasis. Absence of specific signs and symptoms usually contribute to delayed diagnosis is many cases. A high degree of suspicion is necessary for diagnosis of these cases. In our country where tuberculosis is endemic and with the emergence of multi-drug resistant tuberculosis it is all the more important to diagnose this form of osteomyelitis in its early stages [4].

Diagnosis usually depend history of contact, clinical features consistent with tuberculosis, raised ESR and typical imaging features [5]. Microbiological confirmation is difficult because tubercular osteomyelitis is paucibacillary in most of the cases.

We report here a case of tubercular osteomyelitis of chest wall causing osteolytic destruction of left 5th rib. Patient was managed successfully by anti-tubercular drugs.

Case Report:

A 10 year old girl was brought with complaints of intermittent fever since 1 month and wound with local swelling on the anterior aspect of chest since 20 days. The wound started as a small swelling over anterior aspect of the chest which gradually increased and eventually busted to form an ulcer. A small bony fragment also came out of this wound. A significant past history of recurrent abbesses over chest wall was also present since 1 year. These abbesses were treated by local doctors by incision and drainage and oral antibiotics. Immunization history revealed that no BCG vaccine was given (BCG scar absent). Baby was g underweight (<-3Z) and stunted (-2 to -3 Z). On examination there was evidence of multiple nutritional deficiencies in the form of sparse lusterless hairs, protrubant abdomen, hepatomegaly, phrenoderma, bleeding gums and bitot spots. Left axillary lymphadenopathy was present. Local examination showed two coalescing ulcers just adjacent to left nipple. They were irregular in size measuring approximately 3-4 cm each with visible granulation tissue present over left fifth rib (Fig 1). Healed scar, suggestive of old healed abscess, was also visible over the lateral aspect of left fifth rib.

Figure 1 : coalescing ulcerations over anterior chest wall. Granulation tissue is visible.

Complete blood count was done which showed microcytic hypochromic anemia with lymphocytosis. ESR was 68. Montoux test was negative. Culture and sensitivity of the draining pus showed the growth of beta hemolytic streptococci sensitive to linezolid, vancomycin and cefotaxim. Zn staining didn't reveal any acid fast bacilli. Gastric lavage and sputum AFB was negative. Blood culture didn't show any growth. A chest X-ray was done which showed osteolytic lesion in left 5th rib. Computed tomography of chest showed abscess with features suggestive of chronic osteomyelitis ie cortical thickening, periosteal reaction and sclerosis involving left 5th rib (Fig : 2).

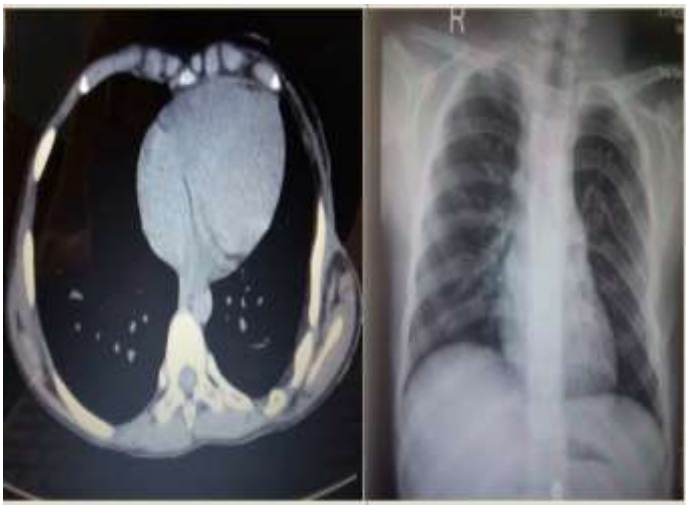

Figure 2 : Imaging of the lesion showing chest wall abscess with features of chronic osteomyelitis and periosteal reaction on computed tomography (Left) While CXR showed osteolytic lesion of left 5th rib (Right).

USG abdomen was normal except for mild hepatomegaly. Though the workup for tuberculosis was negative in view of typical clinical features a trial of antitubercular treatment was given. Patient responded to AKT and wound showed visible changes within 2 weeks. Local wound care and regular dressing was done. There was also improvement in general condition of the patient and her appetite was also improved. Patient was later discharged and advised to complete anti-tubercular treatment (2 HRZE+ 10 HRE).

Discussion:

Musculoskeletal tuberculosis is usually a late complication of tuberculosis and thought to occur either due to haematogenous spread or from reactivation of a latent focus of mycobacteria. It accounts for 10-35% of extra pulmonary tuberculosis and 2 % of all cases of TB [6] . Common sites involved are spine, hip, knee joint, hand and feet (short bones). Though spine is most commonly affected (due to rich vascular supply) no bone is immune from this disease. Children are more commonly affected. Tuberculous bone lesions can resemble pyogenic and fungal infections or bone tumors. Multifocal bone involvement can also occur. Chest wall and ribs involvement in isolated form is very rare [7] . Progressive enlargement of surrounding tissue (cold abscess) and destruction of the ribs is hallmark of the tuberculous osteomyelitis. Superficial abscesses burst open to form ulcer or sinus tract. It has insidious onset and less than 50% of patient have active pulmonary disease [8].The location of the mass is not classic since any part of the rib can be involved. Diagnosis is based on bacteriological and histological confirmation but microbiological confirmation is difficult as tubercular osteomyelitis is paucibacillary. Chest X-Ray may show osteolytic and destructive lesion. USG Thorax - may show evidence of hypo-echoic lesion in the chest wall [9]. FNAC

may be done for histological and cytological confirmation. Smear of aspirate may show lymphoblasts and histiocytes. Treatment consist of general measures, local wound care and antitubercular drugs. Surgical intervention like removal of sinus tract and debridement is necessary only in 10-15% of the patients [10].

Conflict Of Interest: None

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