

PRIMARY TUBERCULOUS OSTEOMYELITIS OF CLAVICLE IN A 2 YEAR OLD CHILD: A CASE REPORT

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Abstract

Osteoarticular tuberculosis accounts for around 1%-3% of all the extrapulmonary tuberculosis, with less than 1% of the infection affecting clavicle. We report a rare case of Primary Tubercular osteomyelitis in a 2 year old child with initially missed diagnosis. A 2 year old male was brought with complaints of exposed medial end of clavicle exposed with discharging bony spicules. There was no history of antecedent trauma, chest infection, cough, sore throat, loss of weight or appetite. Acromioclavicular and sternoclavicular joints were normal. X ray showed a lytic lesion with increased periosteal reaction. Sequestrectomy and curettage was performed. Biopsy report showed areas of central caseous necrosis with multiple epitheloid cell granulomas and giant cells suggestive of tuberculosis. Daily Anti-tubercular multidrug regime with HRZE for 3 months followed by HRE for 9 months was administered. 2 years follow-up showed complete healing of the sinus clinically and radiologically. A suspicion of tubercular osteomyelitis should always be kept in mind while dealing with chronic infective pathologies without constitutional symptoms, presenting with a swelling or a discharging sinus. MRI and biopsy followed by histopathological examination should be the approach, thus, avoiding the spread of the disease to the neighboring joint.

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Keywords: Tubercular osteomyelitis, Extrapulmonary, Sequestrectomy

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India. Ph- 9545455852. Email-sharmagaurav@live.com**Case Report****INTRODUCTION**

Tuberculosis still remains to be a major burden socioeconomically, with India alone contributing to around 2.5 million cases out of the total 9 million cases worldwide^[1]. Osteoarticular tuberculosis accounts for around 1%-3% of all the extrapulmonary tuberculosis, with less than 1% of the infection affecting clavicle. Primary tuberculosis of the clavicle is rare^[2]. Clavicle tuberculosis without pulmonary involvement and other constitutional features can often be misleading. We report a case of Primary Tubercular osteomyelitis in a 2 year old child with initially missed diagnosis.

A two year old male from a low socioeconomic stratum was brought with complaints of insidious onset pain at medial end of left clavicle since past 6 months. There was no history of antecedent trauma, chest infection, cough, sore throat, loss of weight or appetite associated. There was no history of tuberculosis infection in family. A history of intermittent fever for 3 months was present which was treated symptomatically. There was a small swelling which later turned into a discharging sinus on the medial aspect of left clavicle. The child was treated with empirical antibiotics without bacterial culture. After 3 months of treatment, the underlying bone was exposed, this eventually turned into a sequestrum at the time of presentation to our hospital. Examination revealed a 2cm x 1.5cm medial end of clavicle exposed (Fig.1).



Fig 1: Exposed Medial End of Clavicle

Small bony spicules were seen coming out of the sequestrum. Local temperature of the skin was not raised. Acromioclavicular and sternoclavicular joints were within normal limits. The neurovascular status was normal. There was no evidence of cervical or axillary lymphadenopathy. Both the lung fields were clear. No other joint involvement was seen.

Laboratory findings showed a Haemoglobin of 9g/dl, Total Leucocyte count of 13,500 cells/mm³ with Neutrophils 83% and Lymphocytes 45%. The erythrocyte sedimentation rate was 68 mm at the end of one hour. Liver and Renal function tests were within normal limits. Chest X ray showed clear lung fields. There was a lytic lesion seen in the medial end of Left Clavicle with increased periosteal reaction (Fig.2).



Fig 2: Lytic area at Medial end of Clavicle

Based on the clinico-radiological and laboratory co-relation, a diagnosis of chronic osteomyelitis of medial end of clavicle was made. Sequestrectomy of the medial end of clavicle and curettage was done and around 3cm of the bone with the posterior periosteal sheath intact was excised (Fig.3).



Fig 3: Excised Medial side of Clavicle

Meticulous closure with closed suction drain was done. Biopsy report showed areas of central caseous necrosis with multiple epithelioid cell granulomas and Langhans type of giant cells. These findings are pathognomonic of tuberculosis. The culture was positive for Acid fast bacillus.

The child was started on daily Anti-tubercular multidrug regime with Isoniazid (INH) 300mg, Rifampicin 150 mg, Pyrazinamide 350 mg, Ethambutol 200 mg for 3 months followed by Isoniazid, Rifampicin and Ethambutol for 9 months. Thus a total of 12 months treatment was given. Within 2 months of Anti-tubercular treatment (ATT), there were signs of recovery, clinically with normal haematological parameters. There was a declining trend in visual analog score (VAS) over 2 years. A regular follow-up 2 years post operatively showed complete healing of the sinus clinically (Fig. 4) with complete resolution of the lytic area on x ray (Fig. 5).



Fig 4: Clinical Photo at 2 years Follow-up

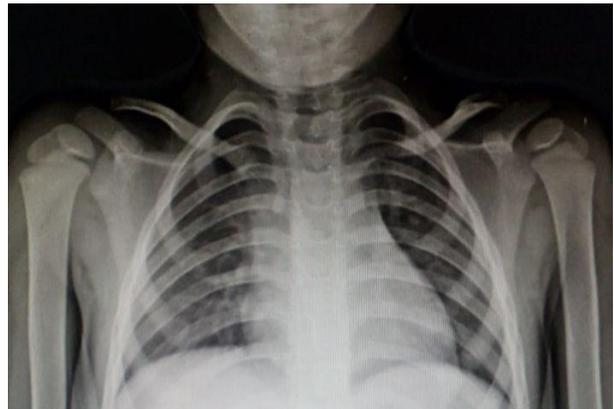


Fig 5: Chest X ray at 2 Years Follow-up

DISCUSSION

Mycobacterium tuberculosis associated with mankind since time immemorial. It continues to affect millions of people worldwide with around 27% of the cases in India alone¹. Out of the total number of osteoarticular tuberculosis cases, nearly half affects the spine and <1% cases involves sternoclavicular joint and clavicle^[3].

In the largest series of osteoarticular tuberculosis of 1074 cases by Tuli, only 7 patients had clavicular and sternoclavicular tuberculosis, with lesion being more common on the medial aspect of clavicle and affecting in second or third decade of life^[3]. Majority of the cases remain undiagnosed during the early phase owing to the absence of the constitutional symptoms and pulmonary involvement. Lack of proper patient education and awareness among the health care professionals, worsens the scenario, leading to an emergence in the Multi drug resistance tuberculosis.

Isolated Primary tubercular osteomyelitis is less common than bacterial osteomyelitis^[4]. Patient usually complains of pain and swelling in the affected area, followed by a gradually developing discharging sinus which further involves the adjacent joint. The lesion can be proliferative or destructive type. In our case, there was a small swelling which later developed into a discharging sinus and finally the medial end of the clavicle was exposed. There were no constitutional symptoms which might have led to the suspicion of osteomyelitis in the mind of the primary physician and thus the child was treated with antibiotics for a duration of 6 months.

The differential diagnosis for conditions affecting the clavicle can be traumatic or non-traumatic conditions, neoplasms including benign tumors like simple bone cyst, infective pathologies (Pyogenic, granulomatous), congenital pseudoarthrosis, sternoclavicular hyperostosis and metabolic conditions like rickets or gout^[2,5]. These conditions have to be kept in mind and differentiated carefully by clinico-radiological co-relation. Our patient had increased Total blood counts and ESR indicating an infective pathology.

Radiological studies helps to differentiate the various pathologies around a particular anatomical area. Plain radiographs of the affected joints can at times show a vague picture of diffuse thickening, honeycombing or multiple cystic/lytic areas^[5]. There might be areas of osteoporosis, lysis, bony sclerosis and areas of new bone formation which further adds difficulty in differentiating tubercular osteomyelitis from chronic pyogenic osteomyelitis^[6]. The sequestrum formation in our case might be due to the exposed medial end of clavicle. Plain radiographs can be misleading, due to the common features and overlapping of the normal anatomical structures. CT scan is another modality which helps delineating the bony pathology. MRI on the other hand is one of the best investigation

to delineate the extent of the lesions, marrow involvement and the surrounding soft tissue structures in addition to the bony pathology^[7]. Due to the socioeconomic limitations, MRI could not be done as an investigation of choice in our patient, which also holds true for majority of the cases in our country.

After the initial investigations, Biopsy and culture from the tissue remains the definitive means to start with a particular form of treatment. Histopathological examination from the bony tissue, helps in confirming the diagnosis which holds true even in our case.

Osteoarticular tuberculosis is almost always secondary to a primary pathology causing haematogenous spread of *Mycobacterium tuberculosis* elsewhere in the body. A possibility of primary tuberculosis should always be kept in mind while dealing with the chronic osteoarticular conditions, which otherwise shows no constitutional signs and symptoms. Here write what was the probable cause for clavicular tuberculosis in your patient. Anti-tubercular treatment alone can suffice in majority of the conditions whereas curettage and Sequestrectomy should usually be reserved for advanced cases. An attempt should be made to check for the presence of

primary focus elsewhere in the body namely pulmonary, GIT and renal system^[8,9].

Conclusion

In conclusion, we would like to reiterate that a suspicion of tubercular osteomyelitis should always be kept in mind while dealing with cases of chronic infective pathologies of extrapulmonary involvement without constitutional symptoms, presenting with a swelling or a discharging sinus. Plain radiographs can mislead at times and thus MRI and biopsy followed by histopathological examination should be the approach in such patients, thus, avoiding the spread of the disease to the neighbouring joint.

Conflict of Interest Statement-

There is no conflict of interest.

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