

Tubercular Osteomyelitis of Clavicle: A Case Report

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ABSTRACT

Introduction: Tubercular (TB) osteomyelitis of clavicle is extremely rare. When it does occur, it commonly occurs in the medial aspect of clavicle and involves the sternoclavicular joint. It may occur in the absence of pulmonary or systemic findings.

Case Report: We describe a case of TB osteomyelitis of distal clavicle in a 35-year-old female, who presented with a chronic non-healing wound with draining sinus from the tip of left shoulder since 6 months.

Conclusion: A high degree of suspicion can aid the diagnosis of TB osteomyelitis in cases that present without pulmonary findings and occur in atypical locations. Early anti-tubercular therapy supplemented with physiotherapy can lead to improved patient outcomes.

Key Words: Clavicle, Osteomyelitis, Tuberculosis

Date of Submission: 02-06-2022

Date of Acceptance: 15-06-2022

I. Introduction

As per the World Health Organization (WHO), approximately 10 million people fell ill with tuberculosis (TB) worldwide in 2020, with the highest disease burden borne by India. However, the incidence of osteoarticular tuberculosis is only 2-5% of all tubercular lesions in the body and is most commonly observed in the spine, followed by the femur, tibia and fibula.^[1] The involvement of clavicle is extremely rare and accounts for about 1% of all osteoarticular tubercular lesions, making it very rare and difficult to diagnose.^[2]

In this case report, we describe a case of TB osteomyelitis, which was suspected in a patient presenting with a non-healing wound along with a discharging sinus on the tip of left shoulder with bony involvement of clavicle, which was evident on radiography and confirmed on histopathological examination. Early suspicion of TB in patients with such presentations can lead to prompt treatment and preservation of function in affected patients.

II. Case Report

A 35-year-old female presented to the Orthopaedic OPD with chief complaint of discharge from the tip of her left shoulder for the past 6 months. She had initially developed a red, mildly tender swelling over the tip of her left shoulder 6 months ago and sought treatment from a local practitioner near her house for the same. She

was prescribed Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) and multiple courses of antibiotics but she did not experience any relief of symptoms.

A chronic pyogenic abscess was suspected and it was incised and drained accordingly by the practitioner. Pus culture and sensitivity was not done at that time. She was prescribed amoxicillin + clavulanic acid along with NSAIDs and was discharged after the procedure. The patient completed the treatment advised to her and experienced some relief of pain and swelling but she gradually developed painless discharge from the site of the procedure and her wound did not heal adequately over the next few weeks. She was then referred to the Orthopaedic OPD for further evaluation after non relief with regular local dressings and antibiotic treatment.

The patient had no history of trauma, fever, chronic cough, weight loss, steroid use, diabetes or any other chronic disease. She had never experienced similar complaints in the past. Patient belonged to a low socio-economic status group and gave a positive history of crowding at her home. She did not have any sick contacts.

Her general examination was within normal limits and no palpable cervical or axillary lymph node enlargement was noted.

Local examination (**Figure-1**) revealed a 2x2 cm, poorly healed circular wound on the left shoulder tip with scar of previous incision being noted. Mild skin hyperpigmentation was also observed.



Figure-1: Clinical photograph showing sinus over left shoulder.

Gentle pressure on the wound lead to expression of mild whitish discharge, which was thick in consistency and not foul-smelling. Pink granulation tissue was present at its base and the margins were inverted. Probing revealed presence of a hard, bony structure. Range of motion was painful and terminally restricted

Blood investigations revealed a haemoglobin of 12.5 g/dl, white blood count of 9,600/cumm with 73% polymorphonuclear leukocytes and 28% lymphocytes. Her erythrocyte sedimentation rate was 32 mm/h and serum C-reactive protein was 13 mg/dl. Her fasting blood sugar level was 90 mg/dl while the post prandial blood sugar level was 120 mg/dl. Peripheral smear revealed normochromic normocytic erythrocytes with adequate platelets.

Chest X-Ray revealed no significant anomaly and her lung fields were clear bilaterally.

Antero-posterior radiographic view of her left shoulder joint (**Figure-2**) demonstrated ill-defined lytic lesions with honeycombing and thinning of cortex in the distal end of clavicle with no involvement of acromioclavicular joint. The sternoclavicular joint was also not involved.



Figure-2: Antero-posterior view of left shoulder showing osteolytic lesion of distal third of clavicle.

Due to non-response to antibiotics, radiographic and clinical features mentioned above and high disease burden of TB in India, tubercular osteomyelitis of clavicle was suspected. Sequestrectomy with complete excision of sinus tract was done (**Figure-3**).



Figure-3: Specimen photograph showing excised sinus tract.

The curetted sequestrum, excised sinus tract specimen was sent for histopathological examination. White caseous material and granulation tissue was noted during surgery and removed completely. Analysis of the specimen revealed chronic granulomatous inflammation with epithelioid giant cells containing peripherally arranged nuclei and macrophages surrounding a central zone of caseous necrosis, strongly suggestive of TB (**Figure-4**).^[3]

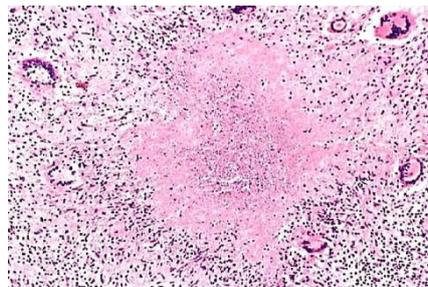


Figure-4: High power field view of histopathological specimen showing caseous necrosis.

CBNAAT of the specimen confirmed the diagnosis of *Mycobacterium tuberculosis*.

Sputum CBNAAT was done and was negative for *Mycobacterium tuberculosis* and TB screen was negative elsewhere in the body.

Patient was started on anti-tubercular therapy with regular follow up. Physiotherapy involving shoulder range of motion exercises was also implemented after 4 weeks.

Patient experienced complete resolution of symptoms after completing the treatment after 12 months.

III. Discussion

Primary tubercular osteomyelitis can occur as a consequence of trauma, head and neck surgery, and subclavian catheter placement. Gradual onset of pain, local tenderness and decreased range of motion may occur in this case but these symptoms are often overlooked until the disease extends to the adjacent skin and joint tissue, displaying features like non-healing wounds, abscesses, draining sinuses and pathological fractures.^[4,5]

Secondary TB osteomyelitis may occur due to lympho-hematogenous spread from a distant pulmonary focus with symptoms like fever, weight loss, night sweats and productive cough, along with symptoms of local disease.^[6]

TB osteomyelitis, in the absence of pulmonary and systemic complaints, is difficult to diagnose and may mimic other common diseases like Brodie's abscess, rickets or bony tumours.^[2] It may be missed in atypical locations like the clavicle, where its incidence is extremely rare. Most cases tend to occur in the medial 1/3rd of the clavicle.^[7] Draining sinuses may be seen but are not common.^[8]

In the case discussed above, bony tuberculosis of distal 1/3rd of clavicle, was suspected in a patient with a chronic non-healing wound and discharging sinus, who had no other systemic findings pointing towards TB on history and clinical examination. Her lab investigations including complete red blood count and total leukocyte count were also within normal limits. She did not have any contributing risk factors other than low socio-economic status with increased crowding in the home environment. The chronicity of symptoms, elevated

markers of underlying inflammation like erythrocyte sedimentation rate and serum C-reactive protein level were some clues steering towards the diagnosis.

Although her TB scan was negative elsewhere in the body and the location and non-involvement of joint space of disease was also uncommon^[8], she was found to have features of tubercular osteomyelitis of distal end of clavicle, which was suggested on X- Ray^[9] and histopathological findings^[3] and confirmed via CBNAAT of excised sequestrum.^[10]

She was able to regain complete range of motion and had complete relief of symptoms due to initiation of anti-tubercular therapy, augmented by physiotherapy.

IV. Conclusion

A high degree of suspicion can aid the diagnosis and timely treatment of tubercular osteomyelitis of the clavicle.

Considering the high disease burden of tuberculosis in India, it should be considered in all cases presenting with non-healing wounds, chronic abscesses and draining sinuses which do not show response to conventional treatment protocols including the administration of antibiotics and excision procedures.

Anti-tubercular therapy should be complimented with physiotherapy including range of motion exercises in order to preserve range of motion and improve patient outcomes.

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Dr. Narottam Das (MBBS, MS), et. al. “Tubercular Osteomyelitis of Clavicle: A Case Report.” *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 21(06), 2022, pp. 17-20.