

**Case Report****A Rare Case of Tuberculosis of Shoulder Joint: Sicca Variant**Dr. Roshan Pais<sup>1</sup>, Dr. Maruthi CV<sup>1\*</sup>, Dr. Vedashree MK<sup>2</sup>, Dr. Buvanesh CR<sup>3</sup>, Dr. Anand BP<sup>3</sup>, Dr. Vishal<sup>3</sup><sup>1</sup>Assistant Professor, Dept of Orthopaedics, MVJ Medical College & Research Hospital, Hoskote, Bangalore -562 114<sup>2</sup>Assistant Professor, Dept of Pathology, MVJ Medical College & Research Hospital, Hoskote, Bangalore -562 114<sup>3</sup>Junior Resident, Dept of Orthopaedics, MVJ Medical College & Research Hospital, Hoskote, Bangalore -562 114**Corresponding author**

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**Abstract:** Tuberculosis of the shoulder joint is rare entity. Here we are presenting a case of shoulder joint tuberculosis, sicca variant with seven months follow-up. A 23 years male patient, electrician by occupation came to the outpatient department with complaints of pain in the right shoulder since two months. Patient's systemic examination and vitals were within normal limits and local examination of the shoulder joint revealed tenderness along the joint line, wasting of the deltoid, range of movements were restricted, abduction 40 degrees, internal rotation 30 degrees and external rotation 40 degrees. X-ray examination of the shoulder joint showed osteolytic lesions in the humeral head and in the glenoid with reduction in joint space. Histopathological examination after an open biopsy showed fragments of necrotic bony trabeculae, adjacent stroma showed large areas of necrosis along with confluent epithelioid granuloma containing langhan's type of giant cells. These are surrounded by dense lymphoplasmocytic infiltration. Features are consistent with tuberculous osteomyelitis. Anti tubercular treatment (ATT) started according to the revised national tuberculosis control programme which classified him under category one. Follow up done at 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup> and 7<sup>th</sup> month with body weight, erythrocyte sedimentation rate and x-ray examination. At seven month follow up, complete pain relief was not achieved due to joint degenerative arthritis and the patient agreed for the arthrodesis and occupational modification. Tuberculosis of the shoulder joint: sicca variant is very rare. Diagnosis is made by clinical, radiological and histopathological examination. Treatment under category 1 of revised national tuberculosis control programme guidelines of seven months is sufficient to treat the shoulder joint tuberculosis. Follow up is done with body weight, erythrocyte sedimentation rate and serial X-ray examination to monitor disease process and guide further treatment.

**Keywords:** Category-I, Shoulder joint, Sicca variant, RNTCP, Tuberculosis

**INTRODUCTION**

Tuberculosis of the shoulder joint is rare entity. Here we are presenting a case of shoulder joint tuberculosis, sicca variant with seven months follow-up.

- Chronic inflammatory arthritis possibly tuberculosis
- Post traumatic aneurysmal bone cyst.

**CASE REPORT**

A 23 years male patient, electrician by occupation came to the outpatient department with complaints of pain in the right shoulder since two months. No history suggestive of swelling in the shoulder, loss of weight and loss of appetite. Patient's systemic examination and vitals were within normal limits and local examination of the shoulder joint revealed tenderness along the joint line, wasting of the deltoid, range of movements were restricted, abduction 40 degrees, internal rotation 30 degrees and external rotation 40 degrees. X-ray examination of the shoulder joint showed osteolytic lesions in the humeral head and in the glenoid with reduction in joint space (Fig 1). MRI revealed multiple well defined focal erosive lesions involving the humeral head and glenoid labrum, nodular synovial thickening with minimal effusion and reduced glenohumeral joint space (Fig 2).

Histopathological examination after an open biopsy showed fragments of necrotic bony trabeculae, adjacent stroma showed large areas of necrosis along with confluent epithelioid granuloma containing langhan's type of giant cells. These are surrounded by dense lymphoplasmocytic infiltration. Features are consistent with tuberculous osteomyelitis (Fig 3).

Anti tubercular treatment (ATT) started according to the revised national tuberculosis control programme which classified him under category one. Course of treatment lasted for seven months with;

Thrice a week strips containing the following medicines:

Intensive phase (3months): HRZE-600mg, 450mg (weight >60 kg 600mg), 1500mg, 1500mg.

Continuation phase (4months): h r-600mg and 450mg (weight >60 kg 600mg).

Follow up done at 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup> and 7<sup>th</sup> month with body weight, erythrocyte sedimentation rate and x-ray examination. (Table -1) (Fig 1, 4a, 4b, 4c, 4d).

Differential diagnosis:

- Pigmented villonodular synovitis

**Table-1:**

Month	ESR	Body Weight In Kg
0 (Fig 1)	18	54
1(Fig 4a)	5	59
3(Fig 4b)	4	63
5(Fig 4c)	4	65
7(Fig 4d)	6	65.23

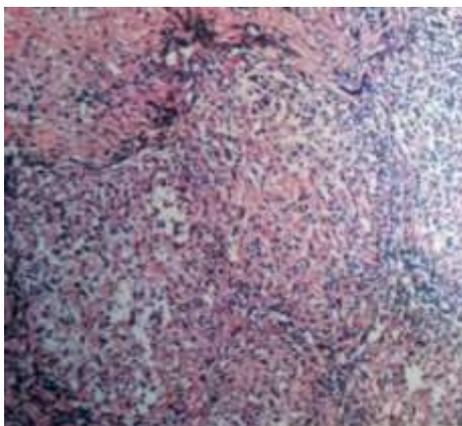
S calcium: 8.91 mg%, S phosphorus: 3.71 mg%, alp: 85.6 U/L



**Fig.1**



**Fig. 2**



**Fig. 3**



**Fig. 4 (a)**



**Fig. 4(b)**



**Fig. 4(c)**



**Fig. 4(d)**

At the end of seven months patient's weight improved, erythrocyte sedimentation rate declined and x ray examination of the shoulder joint showed complete disappearance of the osteolytic lesions in the proximal humerus and in the glenoid. The joint space was found to be persistently reduced with only mild improvement in the range of motion associated with pain. The patient refused arthrodesis as he wanted mobility at the shoulder for his occupation. At seven month follow up, complete pain relief was not achieved due to joint degenerative arthritis and the patient agreed for the arthrodesis and occupational modification.

**DISCUSSION**

Tuberculosis of shoulder joint is uncommon. The incidence is 1-2.8% of skeletal tuberculosis. In adults the classical dry type of shoulder tuberculosis (caries sicca) has been described, while the fulminating variety has not been reported. Tuberculous arthritis most typically affects large joints such as the knee and the hip. Rarely other joints like glenohumeral joint can be involved [1]. Fulminant variety seen in our patient is rare in adults but common in children [2]. A triad of radiographic finding (Phemister's triad) is characteristic of tubercular arthritis- severe periarticular osteoporosis, peripherally located osseous erosions and gradual narrowing of the inter-osseous space [1]. In addition there are subchondral erosions, reactive sclerosis and periosteal reactions [3]. Pathologic abnormalities in tuberculous arthritis include changes in synovial membrane, cartilaginous and osseous abnormalities. Inflammatory changes in the synovial membrane is usually more marked if infection follows the penetration of a caseous bone focus into the joint space than if it starts de novo in the membrane itself. An enlarging joint effusion, inflammatory thickening of the periarticular connective tissue and fat contribute to soft tissue swelling. The synovial membrane thickens and is covered by heavy layer of fibrin [1]. The rapidity of joint space loss in tuberculosis is highly variable. In some patient diminution of this space is a late finding, occurring after marginal and central erosions of large size have appeared. In others, loss of interosseous space can be appreciated at a time when only small marginal osseous defects are apparent [3]. In our case, there was reduction in joint space.

Tuberculosis of shoulder joint can be classified as:

Type I: The classic 'Caries Sicca', the dry form where in the patient presents with marked wasting of the shoulder and painful restriction of all movements [2].

Type II: The 'Caries Exudata', the florid type. Here the patient has a swelling of the joint, cold abscess and sometimes a sinus [2].

Type III: The 'Caries Mobile'. This is characterized by restriction of active movements of the shoulder but passive movements of varying degrees are present, patients having nearly full passive abduction the diagnosis of tuberculous arthritis is generally not difficult when classic radiographic features appear in typical locations [2].

With unusual features or in atypical locations the diagnosis can be more troublesome. The appearance of periarticular osteoporosis, marginal erosions and absent or mild joint space narrowing is most indicative of this disease. In rheumatoid arthritis, osteoporosis and marginal erosions are accompanied by early and significant loss of articular space [1].

**Treatment Categories and Drug Regimens**

Standardized treatment regimens are one of the pillars of the DOTS (Directly observed treatment strategy). Isoniazid, Rifampicin, Pyrazinamide, Ethambutol, and Streptomycin are the primary antitubercular drugs. Most DOTS regimens have thrice-weekly schedules and typically last for 6 to 8 months, with an initial intensive phase and a continuation phase.

Based on the nature/severity of the disease and the patient's exposure to previous anti-tubercular treatments, RNTCP (Revised national tuberculosis control programme) classifies tuberculosis patients into two treatment categories.

1. Patients who weigh 60kg or more receive additional Rifampicin 150mg.
2. Patients who are more than 50 years old receive Streptomycin 500mg. Patients who weigh less than 30kg receive drugs as per Pediatric weight band boxes according to body weight.

Others include patients who are Sputum Smear-Negative or who have Extra-pulmonary disease who can have recurrence.

All patients were encouraged to carry out active gentle pendulum and rotary exercises, for 5 minutes every hour, by themselves at home. No passive stretching or manipulations were carried out. Our case developed late secondary osteoarthritis with pain and was advised arthrodesis [4-5].

New	Previously Treated
New sputum smear-positive, New sputum smear-negative, New extra pulmonary tuberculosis, others	Sputum smear-positive relapse, Sputum smear-positive failure, Sputum smear-positive treatment after default, others#

$2H_3R_3Z_3E_3 + 4H_3R_3$	$2H_3R_3Z_3E_3S_3 + 1H_3R_3Z_3E_3 + 5H_3R_3E_3$
2 months Intensive phase + 4 months continuation phase Four drugs at Thrice-weekly Schedule for 2 months Intensive phase & Two drugs at Thrice-Weekly Schedule for remaining 4 months continuation phase.	3 months Intensive phase + 5 months continuation phase Five drugs at Thrice-weekly Schedule for initial 2 months followed by Four drugs for next 1 month Intensive phase. Three drugs at Thrice-weekly Schedule for remaining 5 months continuation phase.

H: Isoniazid (600 mg), R: Rifampicin (450 mg), Z: Pyrazinamide (1500 mg), E: Ethambutol (1200 mg),  
S: Streptomycin (750 mg)

### CONCLUSION

Tuberculosis of the shoulder joint: sicca variant is very rare. Diagnosis is made by clinical, radiological and histopathological examination. Treatment under category 1 of revised national tuberculosis control programme guidelines of seven months is sufficient to treat the shoulder joint tuberculosis. Follow up is done with body weight, erythrocyte sedimentation rate and serial X-ray examination to monitor disease process and guide further treatment.

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