



AN UNUSUAL CARIES SICCA TREATED WITH STAGED OPERATIVE TECHNIQUE – A CASE REPORT

Dr. Ishan Shevate¹, Dr. Sarthak Walia², Dr. Rahul Salunkhe^{3*},
Dr. Ashwin Deshmukh⁴, Dr. Sushant Kumar⁵

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Abstract

A 38 year old female presented to the Out Patient Department with the chief complaint of pain over right shoulder since 5 years. The patient had a marked reduction in the range of motion of the right side of the shoulder in all directions. On Computed Tomography scan, features suggestive of marked erosion and destruction involving medial and posterior portion of right humeral head along with glenoid were observed. In the second stage at 8 weeks from the index procedure, a complete removal of necrotic bone followed by placement of iliac crest bone graft to restore the bone stock of the glenoid defect. A stemmed antibiotic cement spacer was applied to the humeral head defect. A right sided unilateral platform stem hemiarthroplasty procedure was planned. The patient was given adequate antibiotics and physiotherapy was initiated. At 6 months follow up, patient had achieved full right shoulder range of motion and could resume her daily activities.

Keywords: Avascular necrosis, tuberculosis, caries sicca, upper limb

¹Associate Professor, Dr. D. Y. Patil Medical College, Hospital and Research Center, Pune.

²Resident, Dr. D. Y. Patil Medical College, Hospital and Research Center, Pune.

^{3*}Professor & Head of department, Dr. D. Y. Patil Medical College, Hospital and Research Center, Pune.

⁴Associate professor, Dr. D. Y. Patil Medical College, Hospital and Research Center, Pune.

⁵Resident Dr. D. Y. Patil Medical College, Hospital and Research Center, Pune.

***Corresponding Author-**

^{3*}**Dr. Rahul Salunkhe**

^{3*}Professor & Head of department, Dr. D. Y. Patil Medical College, Hospital and Research Center, Pune.

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1. Introduction

Tuberculosis (TB) is one of the preeminent causes of morbidity and mortality in India, its incidence being about 30-40 %, ¹ out of which only 18 % cases are extrapulmonary TB, and shoulder TB cases amounts to a mere 0.9-1.7 % only. ^{2,3} Extrapulmonary spread of TB is chiefly through the hematogenous route from pulmonary foci namely lymph nodes, abdominal, skeletal TB etc. One type of the shoulder TB is Caries Sicca, which is also known as dry or atrophic form, where severe pain and restriction of shoulder movements along with severe muscle wasting is seen. Imaging may depict regional osteopenia and/or lytic bony lesions. ³

Avascular necrosis (AVN) of the humeral head can be a devastating disorder that causes severe discomfort, limited range of motion and loss of shoulder function. As for frequency of involvement, femoral head is most commonly affected followed by the humeral head, and the majority of subjects with one head had the other head AVN involvement as well. ⁴ Nearly 5 % of all shoulder arthroplasties

are operated as a result of a primary diagnosis of humeral head AVN. ⁵ Numerous therapies have been documented for humeral head avascular osteonecrosis, including nonsurgical therapy, arthroscopic debridement, core decompression, resurfacing of humeral head, vascularized bone and grafting shoulder arthroplasty. ³ In this case report, we discuss a case of Osteonecrosis of Humeral head and its treatment.

Case Report

A 38-yr-old female presented to the Out Patient Department with the chief complaint of pain over right shoulder for 5 years. No history of trauma or any fall was reported. The subject was moderately built and nourished, systemic examination is within normal limits. The patient had a marked reduction in the range of motion of the right side of the shoulder in all directions. On examination, it was found that a marked tenderness was present. No discharging sinus nor distal neurovascular compromise was observed. On radiological examination, a marked destruction of the right humeral head was noted along with glenoid destruction.



Figure 1: Radiograph showing right humeral head and glenoid destruction.

On 3D-CT scan, correlation with the radiographs were performed and features suggestive of marked erosion and destruction involving medial and posterior portion of right humeral head along with glenoid.(Figure 2) Patient was posted for arthroscopic debridement followed by Biopsy. The

histopathology report suggested signs of Osteonecrosis of Humeral Head, samples sent for CBNAAT analysis were tested positive. Patient was started on Category 1 Antitubercular Regimen with due registration in the DOTS scheme.

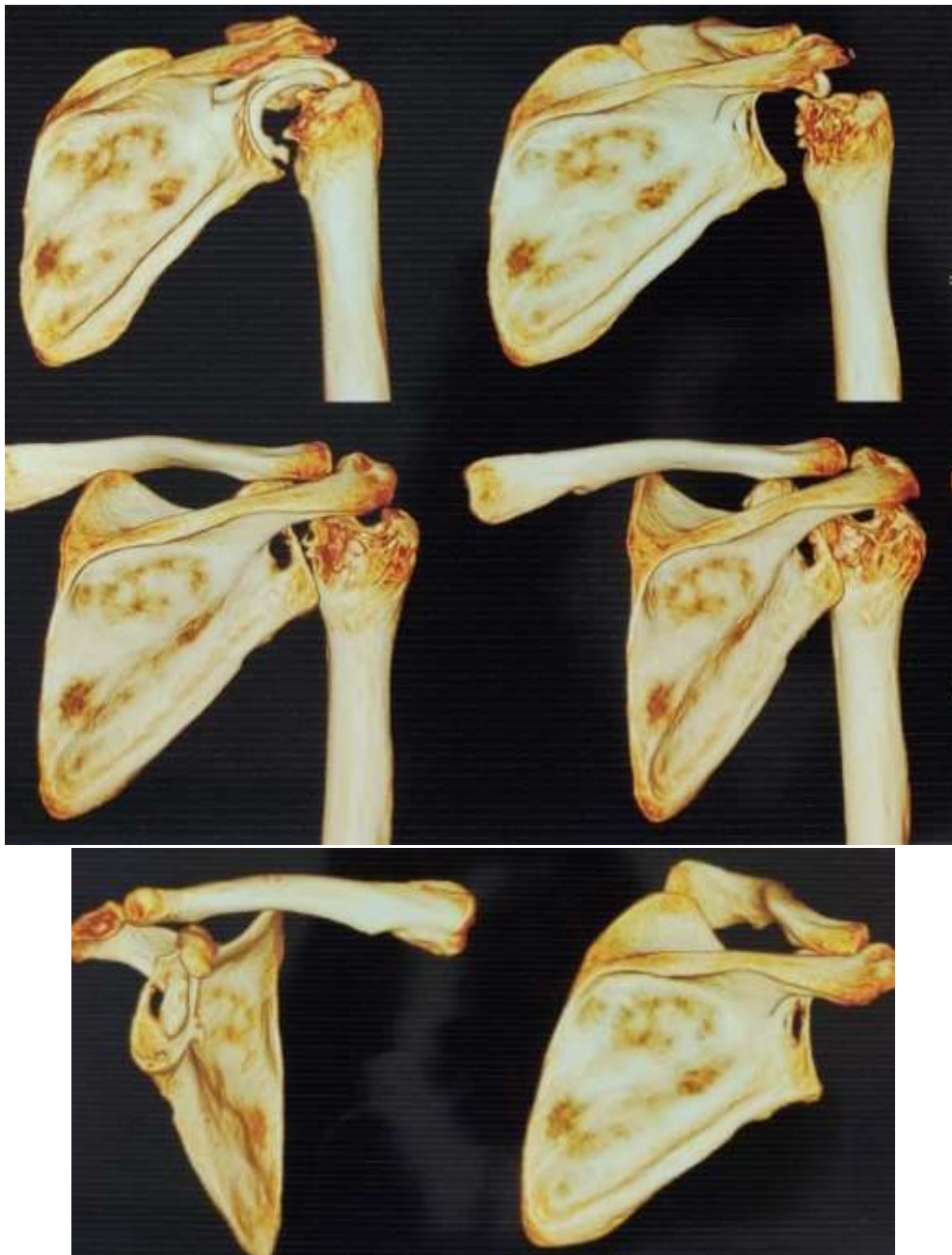


Figure 2: 3D-CT showing erosion and destruction of right humeral head along with glenoid.

In the second stage at 8 weeks from the index procedure, the patient was taken to the operation theatre for the complete removal of necrotic bone followed by placement of iliac crest bone graft to

restore the bone stock of the glenoid defect. A stemmed antibiotic cement spacer was applied to the humeral head defect. (Figure 3)



Figure 3: Cement Spacer Moulded.

A right sided unilateral platform stem hemiarthroplasty procedure was planned. On histopathological examination, there were Langerhans giant cells with epitheloid granulomas. ATT was started under Category 1 RNTCP for 12-18 months and shoulder was

immobilized for 8 weeks. Patient was given adequate antibiotics, post-operative rehabilitation and assisted elbow range of motion was initiated. At 6 months follow up, patient had achieved full right shoulder range of motion and could resume her daily activities. (Figure 4)

Figure 4: Post Operative X ray



2. Discussion

Shoulder TB is a less common manifestation of skeletal TB. Owing to its rarity, shoulder tuberculosis is frequently either misdiagnosed or missed; where 50 percent of cases are falsely diagnosed to be frozen shoulder, many as rotator cuff injury or tumour, or infection and even shoulder joint arthritis, etc.³ The overall delay between onset of symptoms and diagnosis of tuberculosis shoulder is 15 months, also several such cases were detected at later stages either along with pathological fracture, subluxation, and severe arthritis⁶ which may be because of the pathologic process, expressed as dry, insidious, and slow type of lesion, is also called caries sicca. It mostly occurs in adults. Synovium and subchondral bone are commonly involved. Radiographs may indicate osteoporosis, decreased joint space, subchondral erosions, progressive joint destruction, and reactive sclerosis.⁷ In early pre-collapse stages of the humeral head, arthroscopic debridement as well as core decompression are helpful treatments. In the late stages, humeral head resurfacing, hemi-arthroplasty, or shoulder arthroplasty are feasible alternatives.³

Daraj et al. reported on a patient with delayed presentation of shoulder TB who responded effectively to surgery debridement, drainage, and antitubercular treatment.⁸ Birole et al described a case of osteomyelitis TB in a middle-aged female. The patient recovered after 1 year of open debridement and internal fixation using rush nail in addition to antitubercular treatment. He advised that skeletal TB should be suspected.⁹ As per Kelly and Kalson, pathophysiology that occurs in TB lends itself to debriding infective tissue due to shoulder being a non-weight-bearing joint, which means it has the ability to tolerate more joint irregularity. Thus, our case highlights a highly uncommon appearance of TB of the shoulder joint and emphasises the usefulness of contemporary imaging tools in such circumstances where diagnosis is challenging.¹⁰ Trabeculae restoration, reduction in osteoporosis and remineralization are all radiographic indications of healing. Despite the level of joint degeneration, a few studies have demonstrated that conservative therapy and rehabilitation can provide good functional results in the shoulder.^{11,12}

3. Conclusion

The patient responded very well to anti-tubercular therapy with rest in an universal shoulder immobilizer and regained a useful range of motion. There are very few occurrences of shoulder TB, but

since it is prevalent throughout India, it must be questioned in diagnosing all cases of long-standing pain that are unresponsive towards treatment. A proper staged management is a definitive option in cases that have complete destruction of glenohumeral joint. Post-operative active rehabilitation with physiotherapy is a must to achieve a good range of motion.

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