Gavin Publishers
Gavin Journal of Case Reports
Volume 2016; Pages 3
Sevimli R et al.

Case Report

Resection Arthroplasty in Shoulder Joint Tuberculosis: A Case Presentation

Reşit Sevimli*, Mustafa Karakaplan, Mehmet Fatih Korkmaz, Gökay Gormeli

Department of Orthopedics and Traumatology, Turgut Özal Medicine Faculty, İnönü University, Turkey

***Corresponding author:** Reşit Sevimli, Department of Orthopedics and Traumatology, Turgut Özal Medicine Faculty, İnönü University, 44280, Istanbul, Turkey, Tel: +90 422 377 30 00; E-mail: resitsevimli@hotmail.com

Citation: Sevimli R, Karakaplan M, Korkmaz MF, Gormeli G (2016) Resection Arthroplasty in Shoulder Joint Tuberculosis: A Case Presentation. Gavin J Case Rep 2016: 7-9.

Received: 11 May, 2016; **Accepted:** 15 May, 2016; **Published:** 29 May, 2016

Abstract

Tuberculosis affecting the bone and joint system can be considered as one of the rare forms of extrapulmonary tuberculosis and the primary source of infection in the majority of patients presented with skeletal tuberculosis is related to the pulmonary tuberculosis. A wide variety of cases presented with shoulder joint tuberculosis had been described in different literatures concerning this condition. Our case of presentation in this article is a 62 years old female patient presented with left shoulder pain and restriction of motion for about 1 year duration. Our initial plan for his patient was a proximal humeral resection and insertion of temporary cement spacer followed by reconstruction via arthroplasty when the serological rates declines to the lower limit.

Keywords

Arthroplasty; Shoulder joint; Tuberculosis

Introduction

Tuberculosis (TB) is an infectious disease that can cause serious health problems in our country. Although the involvement of pulmonary parenychma is the most common site of infection, bone and joint tuberculosis can also be seen in addition to the involvement of other extrapulmonary systems. Tuberculosis of the skeletal system can be presneted with serious complications due to difficulties in the early diagnosis of the disease. Despite the fact that there is no unified consensus concerning the outline of treatment of skeletal tuberculosis, the most acceptable guideline is to start with anti-tuberculosis chemotherapy. This medical treatment may be accompanied with debridement, synovectomy, arthrodesis and arthroplasty. In this discussion, we aimed to report a patient diagnosed as shoulder girdle tuberculosis with localized areas of infection involving the humeral head who underwent resection of the affected regions.

Case Report

Sixty-two-year-old female patient presented to our clinic complaining of shoulder pain and loss of motion in the shoulder girdle for about 1 year duration. She reported loss of ability to move her shoulder completely and remarkable increase in the pain in the last 6 months. The patient's history revelaed that she was on triple chemotherapeutic treatment for about 2 years taken for chronic pulmonary tuberculosis and her shoulder joint complains obviously increased for the last 1 year. The last six months the drug had left.

The patient's physical examination revealed restricted range of motion and mild swelling of the shoulder joint. But her shoulder deltoid function is working well. The imaging techniques via X-RAY and MRI revealed loculated hypointense areas and degeneration of the humeral head and damage to the rotator cuff on the MRI (Figures 1 and 2). In addition, ESR, PPD, sputum smear and culture samples were taken from the patient. Biopsy sample via puncture was taken from the shoulder joint thought to be infected. The results of the closed biopsy was negative for malignancy (Figures 3a,b). Three years after the diagnosis of tuberculosis surgical intervention was planned for the patient and after the completion of the necessary preparations for the surgery, the shoulder joint was reached via deltopectoral incision and the discharged pus material with the samples taken from the infection mass were sent to "frozen" pathology for study (Figure 4). The pathological study results revealed caseous necrosis and granuloma.

The operation plan involved resection of the humeral head starting from the joint surface for about 4 cm distally and insertion of antibiotic-impregnated cement spacer. After first surgery multiple-drug therapy for tuberculosis started for the patient again. The patient was discharged from the hospital in the fifth post-operative day. After six months followed by application of proximal humeral prosthesis in the second session of the operation plan (Figure 5). After the arthroplasty range of movement significantly increased compared to before surgery.

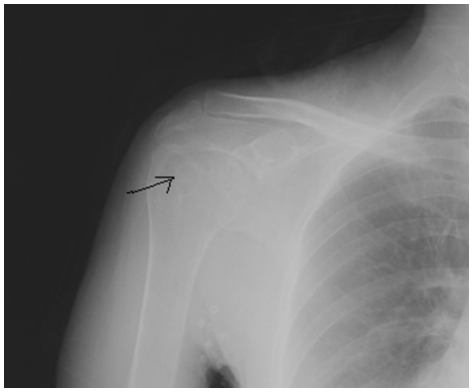

Figure 1: Hypodense areas shown in the plain radaiographic X-RAY prior to the operation.

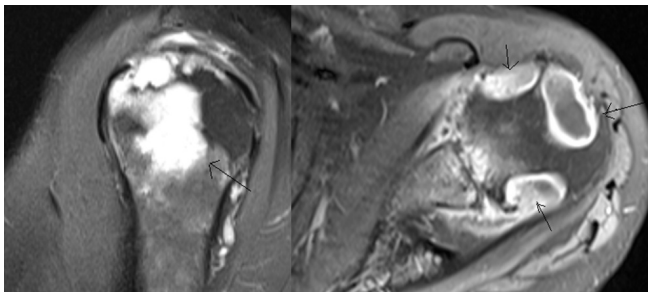

Figure 2: Hyperintense loculated areas seen in T2 cross-sections in the axial and coronal MRI imaging prior to the operation.

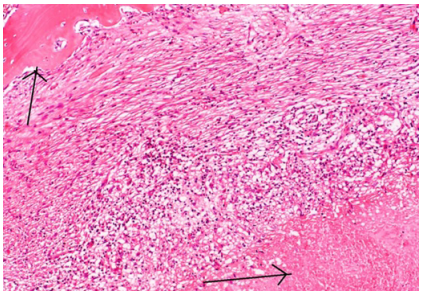

Figure 3a: Images of the specimen taken from the patient and sent to the pahological study;The upper left corner shows mature lamellar bone. The lower right corner shows caseification necrosis settled in the in the center and surrounded by granuloma structure (HE, X100).

Discussion

The decision for surgical intervention in tuberculosis infection today is still controversial and different surgical techniques are available such as debridement, synovectomy, arthrodesis and arthroplasty [1,2]. Debridement is a technique

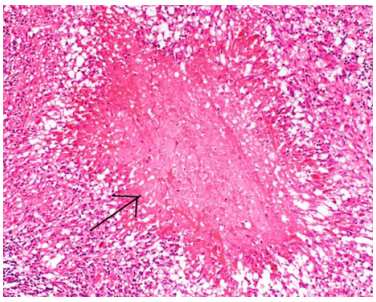

Figure 3b: Caseification necrosis seen in the centre surrounded by groups of epithelioid histiocytes, giant cells and lymphocytic infiltration in the outermost region (HE, X200).

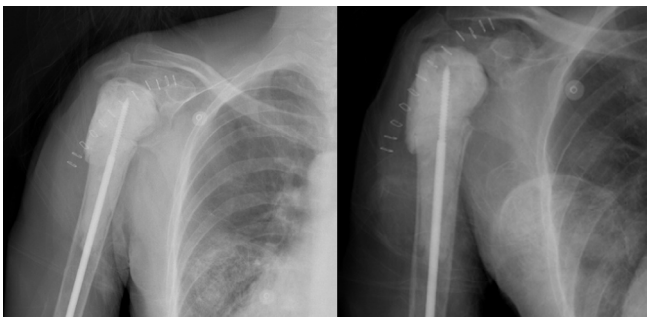

Figure 4: AP and lateral views following the resection and insertion of antibiotic-impregnated cement spacer.

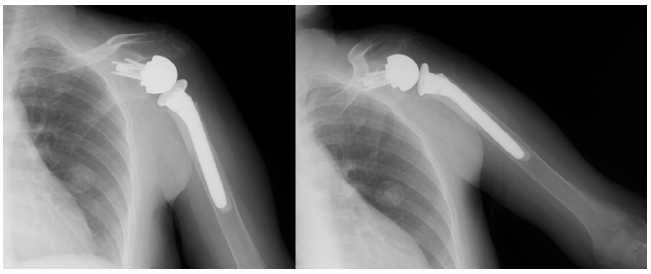

Figure 5: Radigraphic view of shoulder prosthesis following the final surgical intervention.

applied in cases without severe destruction of the bone and cartilage and it's usually the decision of choice in the early diagnosed patients [3]. Some authors report that they get better results when synovectomy combined with chemotherapy [4,5]. While in some other publication, the combination of aggressive debridement, primary closure, and medical treatment has been reported to be more successful in preventing the recurrence and chronic fistula formation [6]. The type of surgery is also controversial. However, the provision of drainage, debridement of necrotic tissue, and if necessary, joint reconstruction, are applications that need to be made [7].

Studies have shown that long-term insidious pain which is not responsive to the treatment along with the evidence of osteopenia in the joints, epiphyseal hypertrophy, bone erosions, narrowing of the joint space and bone destruction seen in plain radiography could be considered as tuberculous infection of the bone and joint [8].

The reverse shoulder prosthesis is introduced to orthopedic market in last twenty years. The reverse shoulder prosthesis is suitable for elderly patient [9,10].

We believe that surgical intervention in tuberculosis involving the joints can be considered in the localized disease, when the anatomical structures impair or when the medical treatment fails, as is the case for our patient.

As a result, we believe that in combination of surgical intervention via joint resection and reconstruction and the provision of anti-tuberculosis medical treatment in the shoulder girdle tuberculosis successful results can be achieved.

References

1. Gupta SK (1982) The treatment of synovial tuberculosis of the knee by a method with unrestricted activities. Indian J Orth 16: 14-18.
2. Choi H, Lee CJ, Lee KJ, Moon KD (2001) Primary tubercolous osteomyelitis of the sternum. J Cardiovasc Surg (Torino) 42: 841-843.
3. Wilkinson MC (1969) Tuberculosis of the hip and knee treated by chemotherapy, synovectomy, and debridement. A followup study. J Bone Joint Surg Am 51: 1343-1359.
4. Chow SP, Yau A (1980) Tuberculosis of the knee - a long term follow-up. Int Orthop 4: 87-92.
5. Bohl JM, Janner D (1999) Mycobacterium tuberculosis sternal osteomyelitis presenting as anterior chest wall mass. Pediatr Infect Dis J 18: 1028-1029.
6. Kerri O, Martini M (1985) Tuberculosis of the knee. Int Orthop 9: 153-157.
7. McLellan DG, Philips KB, Corbett CE, Bronze MS (2000) Sternal osteomyelitis caused by mycobacterium tuberculosis: case report and review of the literature. Am J Med Sci 319: 250-254.
8. Watts HG, Lifeso MR (1996) Tuberculosis of bones and joints. J Bone Joint Surg 78: 288-298.
9. Khan WS, Longo UG, Ahrens PM, Denaro V, Maffulli N (2011) A systematic review of the reverse shoulder replacement in rotator cuff arthropathy, rotator cuff tears, and rheumatoid arthritis. Sports Med Arthrosc 19: 366-379.
10. Young AA, Smith MM, Bacle G, Moraga C, Walch G (2011) Early results of reverse shoulder arthroplasty in patients with rheumatoid arthritis. J Bone Joint Surg Am 93: 1915-1923.