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Chronic Hip Monoarthritic TB without Systemic Manifestations in young Female: A case report from KSA

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ABSTRACT

Articular tuberculosis (AT) is caused mainly by *Mycobacterium Tuberculosis (TB).* Due to the infrequent presentation of the AT cases, there is a high probability of a misdiagnosis or delay of the accurate diagnosis that in most occasions results in inadequate therapy resulting in irreversible joint deterioration. This presented case report of a 30-year-old female was admitted complaining of hip pain in the right side for over a year. Probability of tuberculous arthritis being the cause of this woman complaint was not suspected; therefore she had been misdiagnosed for a long time. It was then identified as TB-arthritis but after a significant delay that necessitate the excision of large tuberculoma from the acetabulum and thigh. If the patient was precisely diagnosed in the proper time, she might success to be exactly treated without the need for the replacement arthroplasty. Therefore, TB arthritis should be supposed as one of the differential diagnosis in monoarticular arthritis and suspected in any age and any economic levels.

Keywords: TB, arthritis, hip joint, woman, KSA

1. INTRODUCTION

Clinical orthopedics sometimes records cases of articular tuberculosis (AT) caused mainly by the fast acid bacilli, *Mycobacterium Tuberculosis* and in a rare case by *Mycobacterium bovis*. Due to the infrequent presentation of the AT cases, there is a high probability of a misdiagnosis or delay of the accurate diagnosis that in most occasions results in inadequate therapy that leading to irreversible joint deterioration. This deterioration of the hip joint could be detrimental for patient's-physical function as the hip joint with the knee joint are the most important load-bearing in the body and play a broad range in body movement (Jeddo et al., 2014). Tuberculosis, being the cause of 1.3 million deaths in 2016, was considered the tenth leading cause of death worldwide (United nations 2018). In 2018, the number of TB patients was estimated to be 10 million with 1.2 million deaths and showing a global

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decrease of 11% than the estimated death in 2015. Due to the WHO implemented control measure to globally eradicate Tuberculosis, there was a decrease of TB cases from 2015 reaching to 7.5 million cases in 2019 (WHO, 2020).

Tuberculosis occurs mainly in the lungs causing pulmonary tuberculosis (PTB) but can also cause extrapulmonary (EPTB). The EPTB was estimated to constitute about 16% of the total TB cases in 2019 (WHO, 2020; Wali et al., 2019; Aliyu et al., 2021). This type of TB is usually caused by bacterial dissemination in situ from neighboring organs, by bacterial spread from primary organ through blood or lymphor even resumption of dormant old TB infection (Golden and Vikram, 2005; Sharma et al., 2021). Musculoskeletal system tuberculosis constitute about 10%-15% of the EPTB and mainly take place in the spines and large joints as hip and knee joints (Golden and Vikram, 2005; Pigrau et al., 2013; Nguyen et al., 2020; Bawazir et al., 2021). Of these, hip joint TB represents about 15% of AT and occurs either extra-articular or intra-articular (Mohideen and Rasool, 2013). The ambiguity of the symptoms represents many obstacles on the trial to early monoarthritis tuberculosis diagnosis as most patients are only presented with joint swelling and pain.

In a previous study, the majority of patients with Monoarticular arthritis were presented without tuberculosis systemic manifestations that resulted in a two years delay in the accurate diagnosis (Al-Sayyad & Abumunaser, 2013). Hip joint tuberculosis usually starts with conditions that may not include hip pain and combined with minimal or absence of X-rays abnormalities in the joint structures that could delay the diagnosis until joint mobility reduction or even its degeneration (Nawatthakul and Yuenyongviwat, 2020). We report here the results and management of hip tuberculosis monoarthritis of the right side in a Saudi 30-year-old female presented complaining of back pain for over a year.

2. CASE PRESENTATION

A 30-year-old female presented with right hip pain for over a year. The symptoms started as a right hip pain radiating to the right leg and lower back approximately 3 years ago. She was referred to a neurologist by her family physician. She then had X-ray and an MRI of the spine, which was unremarkable, and she was given analgesia and sent home. One year later, the hip pain increased in intensity, and she visited the emergency department in which she had a pelvis X--ray that was reported as normal (Figure 1) and she was sent home on analgesics and referred to our clinic. Ten months later, she was presented to our clinic with a severe right hip pain associated with swelling and loss of motion. The pain increases at night but was not associated with systemic manifestations. No history of trauma, fever, cough, or shortness of breath.

Figure 1 a pelvis X--ray that was showing everything normal in the hip joint without any abnormality

The Clinical examination revealed a tender diffuse swelling on the right hip and thigh and hip movement limitation in all plans. Her labs were as follows (WBC: 6.9, ESR: 120, CRP: 129). Ultrasound showed (multiple liquid accumulation thigh anterior-medial side). MRI showed increased signal intensity of the head femur and acetabulum with posterior hip accumulation of about 3 by 1 cm as well as large liquid accumulation in the antero-medial aspect of the thigh with low degree of inflammatory signs (Figure 2). Ultrasound-guided aspiration of sample from the liquid was done, and the sample was sent for microbiological analysis which revealed positive mycobacterium Tuberculosis. Patient underwent urgent surgical debridement where a large tuberculoma (3 cubic cm) with central caseation was excised from the acetabulum and thigh abscess debrided. Anti-TB medication started under care of infectious disease team. Seven biopsies were taken during debridement. Histopathology diagnosis was consistent with TB osteomyelitis and bacteriologic cultures were positive for mycobacterium. During follow up, the pain has markedly improved, and patient is now prepared for replacement arthroplasty.

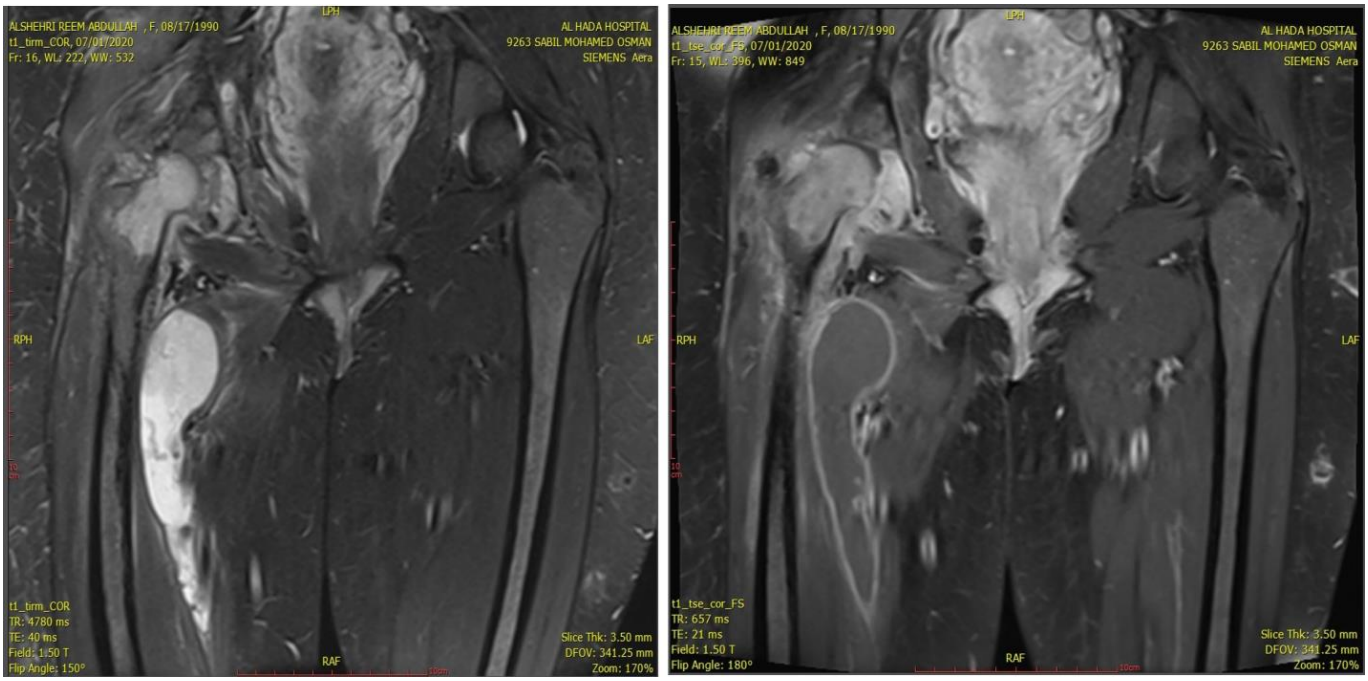

Figure 2 small deep collections seen on the inner aspect of the right iliac bone and right acetabulum

The other deep collection appears on the inner aspect of right iliac bone and continuous with other larger collection inside the distal end of the right ileo-spoas muscle. Other one deep to the lateral aspect of the gluteus muscle measures (4.2 * 1.2) cm. Intraarticular soft tissue signal is seen closely insinuated between the femoral head and the acetabulum notable evident contrast enhancement in post gadolinium series , likely of synovial origin

3. DISCUSSION

Osteoarticular TB diagnosis is always delayed from 16to 19 months (Yao, 1995). In the same context, this current case was presented to our clinic after 9 months delay. Among the reasons of this usual delay in detecting such cases, is that the clinical evidences are non-indicative and with surreptitious commencement that can imitate common joint complain like rheumatoid arthritis (Ocguder et al., 2006), Especially when it is associated with absence of systemic manifestation. Other conditions as inflammatory arthritis, joint degenerative necrosisand avascular necrosis may show TB-arthritis like manifestation (Saraf & Tuli, 2015). In the current case, the patient was presented initially complaining of pain in the back, right hip and right lower limb extending even below the knee. This led the first evaluation at admission time to the suspicion of discogenic pain and neglecting the possibility of hip inflammation being the cause. The patient routine blood analysis showed elevated ESR (120 mm/hr) and elevated CRP (129 mg/L).

The encountered high levels of ESR and CRP associated with no systemic manifestation took our attention to suspect the inflammatory-origin of the pain. *Staphylococcus aureus* also cause a pyogenic septic arthritis that is always manifested by raised ESR and CRP in a similar pattern to TB arthritis (Hong et al., 2001). Although *S. aureus*-arthritis show common medical signs and imaging feature with TB arthritis, *S. aureus*-arthritis usually begin acute, and has a faster and more progressive pattern (García et al., 2012). Therefore the prolonged course of arthritis in the currently presented case weakened the possibility of *S. aureus*-arthritis.

The currently studied patient was admitted complaining of pain in the hip joint at the right side, swelling, and movement restriction, joint hazy margin on X-ray combined with joint-space narrowing and a radiolucent patch in the acetabulum with rarefaction of the femur head. Tuberculous septic arthritis can be differentiated from pyogenic arthritis by the use of MRI in addition to clinical manifestation. *M. tuberculosis* produce a lower degree of inflammation and less joint space changes compared to *S. aureus* that causes severe inflammation, higher progressive course and advancing joint space loss through the secretion of its proteolytic enzymes (Hong et al., 2001). Moreover, the TB-abscess is characterized by weak and even boundaries with low degree of inflammation so called (cold abscess), while pyogenic abscess is characterized by dense, uneven and granulomatous boundaries with prominent inflammatory condition and redness (Prasetyo et al., 2021).

Current case MRI investigation showed low degree of inflammatory signs around the abscess therefore increased the probability of being TB arthritis. Bacteriological examination of an Ultrasound-guided aspiration of sample from the abscess revealed positive *Mycobacterium Tuberculosis* that assured the identification of TB arthritis. Patient underwent urgent surgical debridement where a large tuberculoma (3 cubic cm) with central caseation was excised from the acetabulum and thigh abscess debrided. Anti-TB medication has started 5 months ago under care of infectious disease team. During follow up, the pain has markedly improved, and patient is now prepared for replacement arthroplasty

4. CONCLUSION

The current case was identified as TB-arthritis but after a significant delay that necessitate the excision of large tuberculoma from the acetabulum and thigh and the patient is waiting for replacement arthroplasty. Had the patient correctly diagnosed in earlier stage, she would success to be precisely treated without the need for the replacement arthroplasty. Therefore, TB arthritis should be suspected as a possible cause of the monoarticular arthritis. The TB monoarthritis should be suspected in any age and any economic levels as the current case is still young and from Kingdom of Saudi Arabia, a country of high income. This case report emphasized the importance of thorough look to the clinical examination combined with lab analysis with disease history and progress in addition to MRI investigation that should be routinely implemented to all presented cases that can make a significant role in early diagnosis and proper treatment of case with such complain.

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Informed consent

Oral and written informed consent had been got from the woman reported in this case report.

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Conflict of interests

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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