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CASE REPORTS

Multifocal osteoarticular tuberculosis and pleuropulmonary involvement in an immunocompetent patient

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KEYWORDS

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Abstract *Introduction:* Multifocal tuberculosis is an uncommon presentation in immunocompetent patients; it's associated more with an immune-depression like HIV (Human Immunodeficiency Virus) infection. Here, we are presenting unusual multifocal osteoarticular localizations including the wrist and tarsal joint which are rare and pleura-pulmonary tuberculosis.

Case presentation: Wrist, ankle, tarsal joint, hip and lung involvement was detected in a 30 year-old male patient. Mycobacterium tuberculosis was isolated from both synovial and pleural biopsy specimen cultures. The treatment was based on 9 months of antituberculosis drugs: rifampin (RMP), isoniazid (INH), pyrazinamide (Z) and ethambutol (EMB). INH (300 mg/day), RMP (600 mg/day), PZA (3gr/day) and EMB (1200 mg/day) were given for treatment 6 days/7. In the 4th week the patient's condition improved and was discharged. After two months, the therapy was continued with INH and RMP up to 9 months. A hip replacement surgery and wrist Arthrodesis will be discussed after the patient's total healing.

Conclusion: Tuberculous osteoarthritis is a frequently missed diagnosis, especially in different clinical patterns. A high level of suspicion is required particularly in high-risk populations and endemic areas. Well conducted treatment improves the prognosis.

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1. Introduction

Tuberculosis (TB) remains as a major public health problem in the world. According to the World Health Organization, 10 million new cases of active TB occur each year worldwide [1].

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Human Immunodeficiency Virus (HIV) infection, chronic diseases, malignancy, transplantation and other immunosuppressive conditions, aging and resistant strains lead to the increase in TB patients [2,3]. In these groups, tuberculosis may present atypically and sometimes with predominant extrapulmonary manifestations that result in delays in diagnosis and treatment [1]. It is uncommon to observe multifocal tuberculosis in immunocompetent patients. Here, we are presenting an unusual case of multifocal osteoarticular tuberculosis and pulmonary involvement in an immunocompetent patient. Osteoarticular

involvement combines the wrist and tarsal joint which are relatively rare. Tuberculous involvement of the wrist [4,5] and spine [6,7] have been reported in other African countries.

2. Case presentation

A 30 year-old male patient without relevant pathological antecedents, was admitted with chronic arthritis. His complaints have begun with inflammatory pain of the right hip, swelling and pain on the right wrist two years ago. At the peak stage of his complaints, restriction of motion developed and white colored pus drained from dorsal site of the right wrist. He had swelling and pain at his right ankle and right mid-foot since a year. Six months ago his right ankle and hip were twisted. As a consequence, he had a hip limping and difficulty in walking. This table has progressed in the context of vesperal fever, dry cough and night sweats during the last 6 months as well as deterioration of general condition with weight loss of 10 kg. Before hospitalization, he had received various antibiotics (Ciprofloxacin, Flucloxacillin and Ceftriaxone) without success. Clinical examination revealed pleural effusion of the left base of the thorax. Right wrist motions were restricted and painful; two scar lesions were present at the dorsal site probably due to the previous drainage that took place in history. Right hip flexibility was limited, ankle was swollen and painful. Through the follow up, he had night sweats but did not have any fever. Laboratory examination results showed normal chemistries, including renal and hepatic function. Blood counts demonstrated a hemoglobin level of 12.1 gm/L, a platelet count of 250,000/mm³, and a white blood cell count of 7000/mm³. Erythrocyte sedimentation rate (ESR) was 80 mm/hour, C-reactive protein (CRP) was 50 mg/L. Intra-dermo reaction to tuberculin was 20 mm. Analysis and culture of the sputum were negative for Koch's bacillus. Chest X-ray showed opacities in the left upper lobe and pleurisy (Fig. 1). Right wrist X-ray showed destruction of carpal bones and carpometacarpal joints (Fig. 2). Right Ankle X-ray showed loss of space of tibio-talocalcaneal joint and tarsal destruction (Fig. 3). Right hip X-ray showed osteitis and destruction of

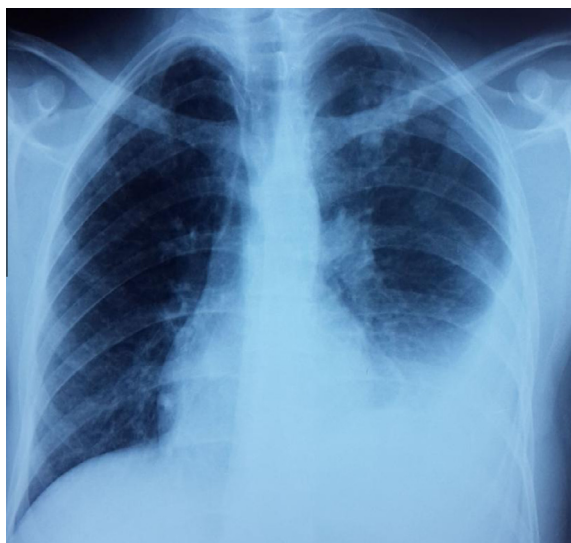


Figure 1 Chest X-ray showed opacities in the left upper lobe and pleurisy in a 30 year old male.



Figure 2 Destruction of carpal bones and carpometacarpal joints.



Figure 3 Loss of space of tibiotalocalcaneal joint and tarsal destruction.



Figure 4 Osteitis and destruction of femoral head with dislocation and ankylosis of the right hip.

femoral head with dislocation and ankylosis of the right hip (Fig. 4). Pleural biopsy and synovial biopsy from right wrist were performed. Histopathological examination revealed caseous and granulomatous infection compatible with tuberculosis. These samples were cultured in the Löwenstein-Jensen culture media and growth was observed in the 4th week and both of them were defined as *Mycobacterium tuberculosis*. It was reported susceptible to rifampin (RMP), isoniazid (INH), pyrazinamide (PZA) and ethambutol (EMB). INH (300 mg/day), RMP (600 mg/day), PZA (3gr/day) and EMB (1200 mg/day) were given for treatment 6 days/7. In the 4th week the patient's condition improved and was discharged. After two months, the therapy was continued with INH and RMP up to 9 months. A hip replacement surgery and wrist arthrodesis will be discussed after the patient's total healing. The case report was approved by the local ethics committee and written informed consent was obtained from the patient for publication of this case report and accompanying images.

3. Discussion

Tuberculosis is one of the measure health problems in Morocco and in the world. TB infection most commonly involves the lungs in about 90% of cases [8]. Skeletal TB represents 2 to 5% of TB cases in general, and 11 to 15% of extrapulmonary tuberculosis [9]. Clinical patterns of skeletal TB include spondylitis, osteomyelitis, peripheral joint infection, and soft tissue abscess [10]. Joint involvement may be secondary to direct invasion from an adjacent focus of TB osteomyelitis or even may result from hematogenous dissemination. The disease is typically monoarticular (90%) and primarily involves the large weight-bearing joints such as hip and knee [11]. The multifocal nature of the TB is determined by the presence of at least 2 extra pulmonary sites with or without a pulmonary involvement [12]. Our patient had pulmonary tuberculosis associated with multifocal skeletal tuberculosis touching right hip, right ankle and right wrist. Our case had three particularities: First, the patient was immunocompetent and it is known that multifocal tuberculosis is rare in immunocompetent patients and the HIV is considered as a risk factor of the dissemination of the Koch bacillus in other sites besides the lung [12]. Second is the disseminated character of osteoarticular tuberculosis. Third, our patient presented with involvement of the wrist which is found in less than 1% of

osteoarticular tuberculosis [1,13], it is usually associated with other locations as is the case of our patient and is usually preceded by osteitis (radius, scaphoid, lunatum) or sometimes a flexor tenosynovitis [14]. The diagnosis was established by the isolation of mycobacterium tuberculosis from both synovial tissue and pleural biopsy specimens.

Conclusion: Multifocal tuberculosis is rare in immunocompetent patients; it can affect virtually any organ system in the body and can be devastating if left untreated. Uncommon sites and ability to mimic other diseases clinically and radiographically leads to diagnostic and therapeutic delays. Early diagnosis and well conducted treatment improves the prognosis.

Conflict of interest

No conflict of interest was declared by the authors.

References

- [1] Bodur H, Erbay A, Bodur H, Yilmaz O, Kulacoglu S. Multifocal tuberculosis presenting with osteoarticular and breast involvement. *Ann Clin Microbiol Antimicrob* 2003;2:6.
- [2] Garrido G, Gomez-Reino JJ, Fernandez-Dapica P, Palenque E, Prieto S. A review of peripheral tuberculous arthritis. *Semin Arthritis Rheum* 1988;18(2):142–9.
- [3] Watts HG, Lifeso RM. Tuberculosis of bone and joints. *J Bone Joint Surg Am* 1996;78(2):288–98.
- [4] Fianyo E, Oniankitan O, Agoda-Koussema LK, Koffi-Tessio VES, Mijiyawa M. White tumor of the wrist: a rare localization of tuberculosis. *Egypt Rheumatol* 2015;37(1):45–7.
- [5] Oniankitan O, Fianyo E, Kakpovi K, Agoda-Koussema LK, Mijiyawa M. Sacrum Pott's disease: a rare location of spine tuberculosis. *Egypt Rheumatol* 2014;36(4):209–11.
- [6] Miladi S, Dhahri R, Hamdi W, Kaffel D, Abid L, Farah F, Kchir MM. Wrist synovectomy confirmed tuberculous tenosynovitis in 8 cases: A follow-up study. *The Egyptian Rheumatologist*, In Press, Corrected Proof, Available online 23 March 2016.
- [7] Maatallah K, Ben Abdelghani K, Abdellatif K, Souabni L, Laatar A, Zakraoui L. Isolated tuberculous arthritis of the dorsal facet joint. *Egypt Rheumatol* 2016;38(1):61–3.
- [8] Abd-Elrazeg Bashier F, Ahmed Khalid Humeida A, Ahmed Elbekre A. Platelet count, platelet indices, erythrocyte sedimentation rate and c-reactive protein in pulmonary tuberculosis patients in abu-anja hospital. *J Biomed Pharm Res* 2015;4(5):46–52.
- [9] Babhulkar SS. Unusual manifestations of osteoarticular tuberculosis. *Clin Orthop Relat Res* 2002;398:114–20.
- [10] Bousset L, Marchand B, Blinneau N, Pariset C, Hermier M, Picaud G, et al. Imaging of osteoarticular tuberculosis. *J Radiol* 2002;83 (9 Pt 1):1025–34.
- [11] Bocanegra TS. Mycobacterial, fungal and parasitic arthritis. In: Klippel J, Dieppe P, editors. *Rheumatology*, vol. 4. London: Mosby; 1994. p. 1–12.
- [12] Denis-Delpierre N, Merrien D, Billaud E, Besnier JM, Duhamel E, Hutin P, et al. Multifocal tuberculosis. About 49 cases in the midwest region. *GERICCO (Group for Epidemiology and Research in Clinical Infections of the Central West of France)*, 1991–1993. *Pathol Biol* 1998;46(6):375–9.
- [13] Benchakroun M, El Bardouni A, Zaddoug O, Kharmaz M, El Yaacoubi M, Ouadghiri M, et al. Symptoms and outcome in tuberculosis of the wrist. *Rev Chir Orthop Reparatrice Appar Mot.* 2004;90(4):337–45.
- [14] Torres Lozano P, Gallach Sanchis D, Pardo Coello MM. Osteoarticular tuberculosis with destructive wrist arthritis secondary to extrapulmonary tuberculosis. *Rev Esp Cir Ortop Traumatol* 2012;56(5):378–80.