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Case Report

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Unexpected diagnosis 'Foot Tuberculosis'

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Abstract

Tuberculosis is an infectious disease still causing significant health problems. Although it is basically a disease of the parenchyma of the pulmonary system, there can be extra-pulmonary involvement of the pleura, the central nervous system, the genito-urinary system, pericardium, eyes, skin, and the skeletal system. The primary source is pulmonary focused, and it is quite rare for infection to occur in the skeletal system by a hematogenous route. The increase in immune system compromised patients and medication resistant bacteria has caused a greater incidence of mycobacterial infection outside the lungs to have been observed. The main problem encountered in tuberculosis in the skeletal system is the diagnosis. Localized pain, high temperature and weight loss are not often seen clinically. A case is presented here for discussion of isolated foot tuberculosis, as a case which is rarely able to be diagnosed, and for which appropriate treatment was given early before the onset of function loss, giving good results.

Keywords: foot, trauma, tuberculosis, infection

1. Introduction

Tuberculosis is an infectious disease still causing significant health problems. According to World Health Organization data, an average of 9.2 million people per year contract the disease of which 1.7 million lives are lost (1). Although it is basically a disease of the parenchyma of the pulmonary system, there can be extra-pulmonary involvement of the pleura, the central nervous system, the Genito-urinary system, pericardium, eyes, skin, and the skeletal system. Supporting data from the Turkish Ministry of Health states an annual rate of 35,000- 40,000 new cases of tuberculosis, of which 18,500 are fully defined and only 6500 of them undergo effective treatment (2-4). There can be difficulties in the diagnosis of this disease; the primary source is pulmonary focused, and it is quite rare for infection to occur in the skeletal system by a hematogenous route. The increase in immune system compromised patients and medication resistant bacteria has caused a greater incidence of microbacterial infection outside the lungs to have been observed.

Mittel et al reported skeletal involvement in 10.3% of all cases (5). It has been accepted by researchers that the foot was affected in 10% of those cases (6). The main problem encountered in tuberculosis in the skeletal system is the diagnosis. Localized pain, high temperature and weight loss are not often seen clinically (7).

A case is presented here for discussion of isolated foot tuberculosis, as a case which is rarely able to be diagnosed, and for which appropriate treatment was given early before the onset of function loss, giving good results.

2. Case Report

A 42-year-old female patient presented with pain and swelling two days after having sprained her ankle. Physical examination showed widespread edema and swelling, localized sensitivity, raised temperature, no erythema, and painful foot and ankle movements. No special features were determined in the patient history. Having determined widespread soft tissue oedema and bone marrow edema from direct radiographs and MRI, a short leg plaster cast was applied, ice packs and diclofenac potassium 2x50mg was started (Figs. 1-3). On the 7th day follow-up examination, erythema and raised temperature were evident so cefuroxime axetil 2x500mg was started and the plaster cast was reapplied. At the end of the 3rd week, the plaster cast was removed and there was no erythema or raised temperature, but the oedema was still present. It was observed that the patient was unable to stand on the foot, so he was referred to the physiotherapy department. The patient did not attend for further follow-up but presented again with swelling and pain seven months after the trauma.

A diagnosis of osteomyelitis was made from the results of direct radiographs and MRI. Culture and biopsy were taken, and debridement surgery was performed (Fig. 4). As laboratory tests CRP and leukocytes were developed for the identification of active tuberculosis infection in the blood and Quantiferon (gamma interferon oscillation) tests were requested.

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Fig. 1. Obliq x-ray image after the trauma

Fig. 2. Ap x-ray image after the trauma

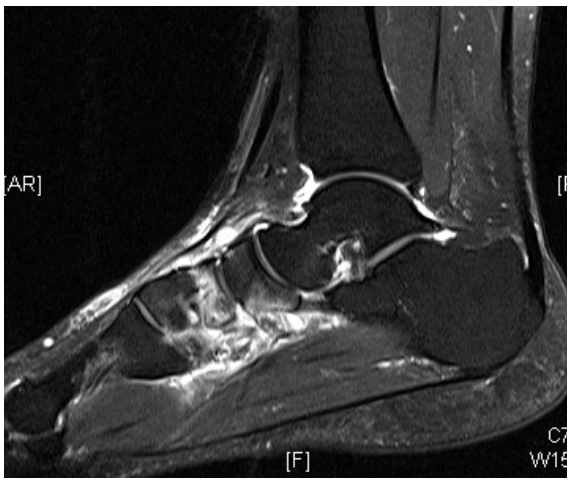

Fig. 3. Sagittal MR image after the trauma

The pathology results of leukocyte values of 10500 (3800 - 10000/ml indicator) and CRP 0.9 (0-0.5mg/dl) and Quantiferon test 3.38 IU/ml (normal <0.35 IU/ml), determined necrotizing granulomatous inflammation. *Mycobacterium tuberculosis* bacilli were produced in the culture. No pathology was determined from the lung radiograph, and there was no history of tuberculosis for the patient personally or in her environment. Quadruple antituberculosis treatment was started under the control of the infection department. After two months of quadruple treatment, seven months of double antituberculosis treatment were administered and at the 9th month postoperative, direct radiographs were taken (Fig. 5). Clinically there was a mild level of edema and no erythema or raised temperature. The patient was able to walk without pain with active, free ankle movement (Fig. 6).

Fig. 4. MRI image that was diagnosed tuberculosis

Fig. 5. Foot ap, oblique image that postoperative and using antituberculosis at the 9th month

Fig. 6. Clinically ap and lateral foot image, postoperative 11 months

3. Discussion

Tuberculosis infection is rarely seen in the skeletal system. The most frequently involved areas in tuberculosis cases are the spine and the hips so diagnosis of infection in those areas is easier (8). In recent years the increase immune system compromised patients and multiple medication resistant bacilli have caused an increase throughout society in cases with involvement outside the lungs (14, 15).

In contrast, it is rarely seen in the foot and ankle and diagnosis may be made at advanced stages (9). Our case was only able to be diagnosed at her final presentation at the clinic with a differential diagnosis. The complaints with which she presented started following a trauma and as she withdrew from follow-up the diagnosis could only be made and confirmed at the 7th month.

Generally, tuberculosis in the foot has been seen to involve the midtarsal joint, and the same image reported by Martin et al was encountered in our case (9). While localized pain is typical clinically, high temperature and weight loss are rarely seen in foot and ankle cases (7). Our case had complaints of localized pain. We did not encounter early muscle atrophy as described by Messner. Several authors have reported the characteristics of raised ESR and CRP (8, 10, 11). No extreme increase was observed in our case. In addition, the Quantiferon test, which was first used in 2005, was applied and our case was determined as positive (12). Some risk factors have been defined for tuberculosis in the skeletal system. Besides malnutrition, poor hygiene and disease area, there is always a history of trauma. It is assumed that the tissue resistance to the trauma causes a localized weakness.

It has been reported that most patients have a common base of general characteristics, which are, a slow and long-lasting start, single joint or single bone involvement, concomitant tuberculosis in another organ, the presence of tuberculosis cases in close vicinity and a history of trauma in the related area. Our case developed in a single bone following trauma.

Tuberculosis of the skeletal system is a chronic disease generally involving a single joint or single bone, leading to progressive degeneration. As in our case, late diagnosis leads to arthrosis in a wider area because of involvement of more than one joint. Notwithstanding the importance of surgical treatment, it is important to start medical treatment early in cases without complications. In regions where tuberculosis is often seen, such as in our country, patients with long-lasting complaints which started following a trauma, should be considered for tuberculosis (13).

Conflict of interest

None to declare.

Acknowledgments

None to declare.

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