CASE REPORT
KAZUISTIKA

A Rare Case of Flexor Tenosynovitis Due to Tuberculosis in Hand and Wrist: a Case Report

Vzácný případ tuberkulózní tenosynovialitidy ruky a zápěstí: kazuistika

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SUMMARY

Tuberculosis (TB) is still a worldwide problem. We present a case of flexor tenosynovitis due to tuberculosis in the hand and wrist. A 42-year-old man presented to the outpatient clinic with a 2-year history of a slowly growing mass over the volar aspect of the left wrist. His MRI showed multiple rice bodies in the wrist and hand. An open biopsy was performed. Pathology specimens showed granulomatous lesions with central necrosis. The purified protein derivative (PPD) test was positive. In this case, granulomatous lesions with central necrosis, rice bodies, and positive PPD test confirmed the diagnosis of TB in the wrist and hand. There was no other concurrent evidence of TB elsewhere. Antituberculosis chemotherapy was commenced. Tuberculous tenosynovitis of the wrist and hand is very rare. The tuberculous tenosynovitis should be kept in mind as an infectious agent when patients are presenting with atypical clinical.

Key words: tuberculosis, rice bodies, flexor tenosynovitis, wrist, hand.

INTRODUCTION

Tuberculosis (TB) is still a worldwide problem. Although in recent years the incidence of pulmonary tuberculosis decreased in the world, extrapulmonary tuberculosis that accounts for 15% of tuberculosis cases is increasing (6). A place of every fifth case of extrapulmonary tuberculosis is the locomotor system (14). Most of the musculoskeletal TB involves the spine (9). Although the extrapulmonary form of tuberculosis is rare, tendon sheath involvement is even rarer (14). Tuberculosis joint involvement if untreated can cause serious joint and tendon destruction. Also, the infection can spread throughout the bursa, muscle, and other soft tissues (9). Musculoskeletal TB may show without constitutional symptoms (5). The symptoms are generally nonspecific in patients with tuberculosis tendon sheath involvement, therefore diagnosis is often delayed (3). In cases of an unexplained painful and swollen joint, TB should be considered as a potentially disturbing infectious agent (5). In this article, we present a case of flexor tenosynovitis due to tuberculosis in the hand and wrist. The aim of this case report was to highlight the tuberculous tenosynovitis should be kept in mind as an infectious agent.

CASE REPORT

A man aged 42-year-old presented to the physical medicine and rehabilitation outpatient clinic with a 2-year history of a slowly growing mass over the volar aspect of the left wrist (Fig. 1). There were no other small or large joint symptoms. He had stiffness at the wrist and hand joints. Examination revealed a 5 cm×5 cm wide painful swelling on the volar aspect of the left wrist, also fourth and fifth finger metacarpophalangeal joints range of motion limitation at flexion and extension. There was no erythema, local rise of temperature, paresthesia, and motor weakness. There was no history of tuberculosis in the patient and his family, a traumatic injury to wrist or hand, animal contact or bite. The patient hasn't immunized with Bacillus-Calmette-Guérin (BCG) vaccine before.

Complete blood count, erythrocyte sedimentation rate, C-reactive protein, uric acid, HIV test, and hepatitis markers level analysis were performed and all laboratory parameters were within the normal range. The X-rays of the hand and wrist showed an increase in soft tissue density, soft tissue swelling, and periarticular osteoporosis (Fig. 2). The patient underwent hand and wrist contrast-enhanced magnetic resonance imaging (MRI). MRI revealed degenerative signal in the distal ulna, minimal fluid in radiocarpal and intercarpal joints, microcystic benign resorption foci in the subcortical area in the proximal and distal row of carpal bones. In 4th and 5th metacarpophalangeal and wrist areas, effusion increase in flexor tendons and synovial thickening compatible with tenosynovitis were observed. Synovial contrast thickening was noticed around the tendons. MRI of the wrist and hand showed rice bodies. The rice bodies showed

Fig. 1. Red arrow shows rice bodies excised from the swelling which appear as glistening white structures.

Fig. 2. The wrist AP and lateral X-ray showed us soft tissue density increase, soft tissue swelling and periarticular osteoporosis.

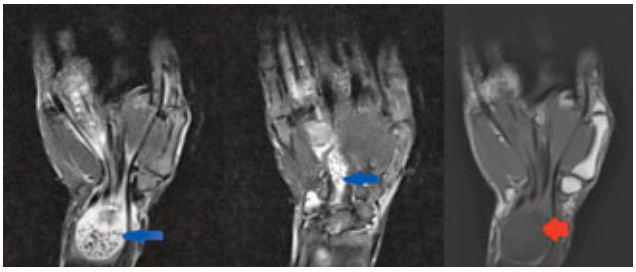

Fig. 3. T2 sequence coronal images show well defined fluid intensity collection anterior to the wrist and 4-metacarpophalangeal areas bone along the flexor tendon sheath suggestive of tenosynovitis. There are multiple hypo-intense loose bodies like rice grain are seen within it (blue arrow). In T1 sequence coronal image 'rice bodies showed a hypo-intense signal (red arrow).

a hypo-intense signal on both T1 and T2 sequences (Fig. 3). The patient was evaluated negatively for any evidence of pulmonary tuberculosis in clinical examinations and chest X-ray. Thorax tomography is not routinely performed in Turkey because that is an endemic region for tuberculosis. Tuberculosis is evaluated according to a chest X-ray. If the patient has a cough-sputum complaint, sputum acid-resistant bacillus (ARB) is sent. The purified protein derivative (PPD) test was positive (20 mm). An open biopsy was performed. The thick synovial tissue and large rice bodies were observed and were biopsied (Fig. 1). Pathology specimens showed granulomatous lesions with central necrosis. The joint fluid ARB test was negative. Despite of the result of ARB was negative, granulomatous lesions with central necrosis, rice bodies and positive PPD test confirmed the diagnosis of tuberculosis in this case. Antituberculosis chemotherapy with rifampicin, isoniazid, pyrazinamide, ethambutol was initiated in the patient.

Ethambutol and pyrazinamide were discontinued after 2 months. The treatment continued with Isoniazid and Rifampicin for 4 more months. The patient's symptoms were resolved four weeks after the initiation of treatment.

DISCUSSION

Tuberculosis is an infection that causes multisystemic involvement. Extrapulmonary spread occurs mainly via the hematogenous pathway (2). Tuberculosis synovitis often occurs as monoarthritis of weight-bearing joints such as hips, knees, or ankles with or without pulmonary tuberculous focus (12). Especially extrapulmonary tuberculosis without pulmonary disease is even rare (10). There are few cases reports in the literature regarding hand and wrist tuberculosis involvement. Wrist and hand tuberculosis occur gradually over several years (4). The clinical presentation is often nonspecific such as the insidious onset of pain, stiffness, swelling, and limitation of movement with severe muscle wasting (7). Pain and swelling are the most common features in the early stages. Articular destruction occurs in the advanced stage (4). Carpal tunnel syndrome may be possible if the infection extends into the carpal tunnel (10). The flexor tendons are the most common site of hand and wrist tuberculous tenosynovitis. Extensor tendon involvement is uncommon (11). In the disease that has been going on for a long time, necrotic joint synovium and accumulation fibrinous material in the synovial fluid may lead to producing rice bodies (9). The mechanism of rice body formation is still uncertain. The presence of rice bodies is the key feature of TB arthritis but it is nonspecific because rice bodies can be found in other types of chronic synovitis (8). Diagnosis of tuberculous tenosynovitis is usually delayed due to the numerous differential diagnosis (1). Antituberculosis chemotherapy is the mainstay treatment in tuberculous tenosynovitis (4). Surgery is also recommended for antituberculosis chemotherapy-resistant patients (13).

In conclusion**,** we have presented the case of tuberculous tenosynovitis with rice body formation in the flexor tendon sheaths of the hand and wrist. As in our case, even in the absence of past tuberculosis infection or exposure, Mycobacterium tuberculosis should be considered in the differential diagnosis of long-standing flexor tenosynovitis in hand and wrist. In our case wasn't immunized with the BCG vaccine before. In Turkey, the BCG vaccine in routine vaccination programs has been implemented since 1952. Vaccination is carried out after the two months after birth. As well as all over the world, there are some families refuse vaccines in Turkey. Vac-

cination is an essential component of the individual's right to health and is one of the most successful measures of preventive medicine. Vaccine-preventable diseases are significantly reduced with routine vaccination programs all over the world. For this reason, the decision to get vaccinated concerns not only the individual but the whole society, and anti-vaccination is a public health problem. Tuberculosis is an infectious disease and continues to be important worldwide. Due to the difficulties in early diagnosis and treatment in TB, the most effective way to protect society from this disease is vaccination. In the patients with wrist and hand tuberculosis involvement, significant disability may occur. Early diagnosis is very important to improve the prospect of preservation of joint structure and function. The tuberculous tenosynovitis should be kept in mind as an infectious agent.

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