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Tuberculosis tenosynovitis with multiple rice bodies of the flexor tendons in the wrist: A case report

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ABSTRACT

INTRODUCTION: One of the infectious causes of wrist tenosynovitis is Mycobacterium tuberculosis. Tendon sheath involvement is rare. Herein, we report the diagnosis and treatment of a patient with neglected wrist flexor tendon sheath tuberculosis.
PRESENTATION OF CASE: We report the diagnosis and treatment of a man aged 50 years with neglected wrist flexor tendon sheath tuberculosis.
DISCUSSION: In patients with tendon sheath involvement, symptoms are generally non-specific such as pain and swelling; therefore, it can be diagnosed late due to the lack of systemic symptoms. Wrist X-ray imaging in tenosynovitis may show soft tissue swelling and osteoporotic changes around the wrist joint. T2-weighted sequences in magnetic resonance imaging are more successful in supporting the diagnosis.
CONCLUSION: M. tuberculosis should be kept in mind as an infectious agent, especially in developing countries. In order to prevent any delay in diagnostic evaluation, all steps should be taken carefully.

1. Introduction

Tenosynovitis, one of the common reasons of wrist pain, may has various etiologies. One of the infectious causes of the wrist tenosynovitis is *M. tuberculosis*. Although antituberculosis drugs reduced the incidence of *M. Tuberculosis* infections, its prevalence is again increasing due to immune deficiency syndromes. It is mainly known as a pulmonary disease, but it may involve the musculoskeletal system and rarely tendon sheaths. Herein, we report the diagnosis and treatment of a patient with neglected wrist flexor tendon sheath tuberculosis.

2. Case report

A man aged 50 years was admitted to the rheumatology department with symptoms of right wrist volar pain, swelling, redness, and palmar pain, which had started in 2011. He had no comorbidities. Laboratory tests revealed C-reactive protein (CRP): 18 mg/L, erythrocyte sedimentation rate (ESR): 24 mm/h, and white blood cells (WBC): 6460 × 10^3 mm^3. A diagnosis of seronegative arthritis was made and deltacortril 4 mg 1*1 and salazoyprin 500 mg 1*1 was administered. During the follow-up period, pain was relieved but redness and swelling remained. In 2013, an wrist X-ray was performed (Fig. 1), which revealed soft tissue density increase, soft tissue swelling, and periarticular osteoporosis. Magnetic resonance imaging (MRI) (Fig. 2) showed millimetric and nodular images in flexor group tendon sheath in T2A series and wrist images were consistent with synovitis. The patient was referred to our department. On March 19th, 2013, right wrist synovitis resection and flexor retinaculum release was performed. Multiple rice bodies around the wrist flexor tendons were seen during the operation (Figs. 3 and 4). Specimens were sent to microbiology and aerobic-anaerobic cultures and liquid media remained sterile. The patient's symptoms regressed after the operation. However, in the postoperative 6th month, symptoms of right hand volar pain, swelling, and redness started. Laboratory tests and MRI findings showed recurrence. The patient underwent surgery again on November 11th, 2014, using the same incision line. There were multiple rice bodies again (Fig. 3). Flexor tendons were widely debrided. Perioperative specimens were sent to pathology and microbiology. A tuberculosis culture was analysed in addition. Pathologic examination showed granulomatous synovitis and the microbiologic examination in Lowenstein Jensen medium revealed *M. tuberculosis*. There was no history of lung tuberculosis. After thorough debridement, antituberculosis therapy was administered and maintained for twelve months.

After completion of antituberculosis therapy, there was no wrist pain and redness. Wrist range of motion was full. Laboratory tests revealed CRP: 1 mg/L, ESR: 2 mm/h, and WBC: 6600 × 10^3 mm^3.

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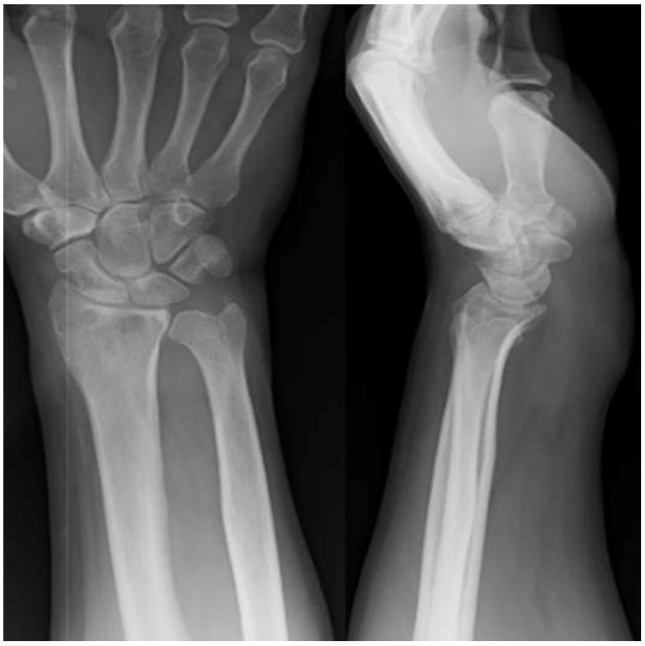

Fig. 1. The wrist AP and lateral X-ray shows us soft tissue density increase, soft tissue swelling and periarticular osteoporosis.

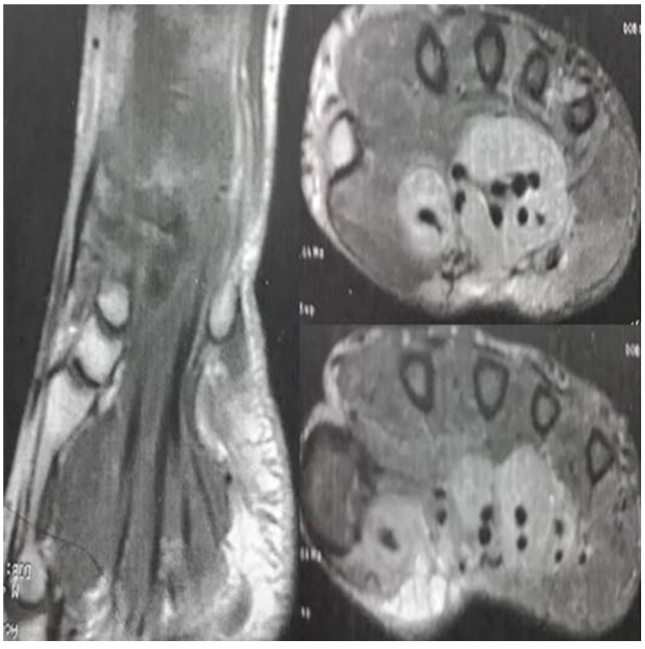

Fig. 2. MRI showed millimetric and nodular images in flexor group tendon sheath in T2A series and wrist images were consistent with synovitis.

Wrist X-ray in the control visit (Fig. 5) showed that soft tissue density decreased and swelling disappeared. Wrist MRI (Fig. 6) revealed that synovitis findings were fully recovered.

3. Discussion

M. tuberculosis infection was no longer a problem for humans after the discovery of antituberculosis drugs. However, it is still important because its diagnosis and treatment pose several challenges. Almost one third of the world's population is infected with tuberculosis bacilli.

Fig. 3. Multiple rice bodies around the flexor tendons in the wrist.

Fig. 4. After large debridement.

Five to 10 percent of infected people become sick in one period of their lifetime. According to the "Global Tuberculosis (TB) 2015 Report" of the World Health Organization (WHO), the incidence, prevalence, and mortality rates of tuberculosis have been decreasing worldwide. However, global TB load is still very high. In 2014, there were 9.6 million new cases and 1.5 million deaths due to TB [1]. Tuberculosis infection is important especially in patients with immune deficiency syndromes, HIV infection, drug addiction, renal failure and in citizens of developing countries. Our patient did not have an immune deficiency.

Tuberculosis infection primarily affects the respiratory system. It is generally accepted as a lung infection but it may infect other organs. The infection spreads via lymphohematogenous route, and extrapulmonary involvement occurs at rate of around 14%. Osseous