

## Osteoarticular Tuberculosis (TB): Clinical Presentation, Diagnosis, Treatment

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### DESCRIPTION

Osteoarticular Tuberculosis (TB) is a rare form of extrapulmonary TB that affects the bones and joints. It accounts for about 1-3% of all cases of TB, and is more common in developing countries where TB is endemic. Osteoarticular TB can lead to significant morbidity and disability if not diagnosed and treated promptly. In this article, we will discuss the pathogenesis, clinical presentation, diagnosis, and treatment of osteoarticular TB.

Osteoarticular TB usually results from hematogenous spread of *Mycobacterium tuberculosis* from a primary focus elsewhere in the body. The bacilli can reach the bone or joint through the bloodstream, or *via* direct extension from a contiguous site such as a tuberculous lymph node or soft tissue abscess. Once the bacilli reach the bone or joint, they can cause a granulomatous inflammatory reaction, which leads to bone destruction and joint deformity.

The clinical presentation of osteoarticular TB can be variable and non-specific, which can lead to delays in diagnosis. Patients may present with joint pain, swelling, stiffness, and limited range of motion. The affected joint may be warm to the touch, and there may be associated systemic symptoms such as fever, night sweats, and weight loss. In some cases, there may be a history of TB exposure or a previous episode of active TB.

The diagnosis of osteoarticular TB can be challenging and requires a high index of suspicion. Imaging studies such as X-rays, Computed Tomography (CT), and Magnetic Resonance Imaging (MRI) can be helpful in identifying bony changes and soft tissue involvement. However, these imaging modalities may not be specific for TB, and other conditions such as septic arthritis, pyogenic osteomyelitis, and neoplastic disorders should be ruled out.

The definitive diagnosis of osteoarticular TB requires the isolation of *Mycobacterium tuberculosis* from the affected tissue. This

can be done by culture of synovial fluid, bone biopsy, or tissue biopsy. However, the yield of culture may be low, and it may take several weeks to obtain results. Therefore, other diagnostic tests such as Polymerase Chain Reaction (PCR) and Interferon-Gamma Release Assays (IGRAs) may be helpful in supporting the diagnosis.

The treatment of osteoarticular TB is similar to that of pulmonary TB, and consists of a combination of antibiotics for a minimum of 6 months. The initial phase of treatment typically involves a combination of four drugs, such as isoniazid, rifampicin, pyrazinamide, and ethambutol. Once the bacilli are susceptible to the antibiotics, the regimen can be simplified to two drugs, usually isoniazid and rifampicin.

In addition to antibiotics, surgery may be necessary in some cases to relieve pain, correct deformity, and prevent further destruction of the joint. Surgical options include joint debridement, synovectomy, and joint replacement.

The prognosis of osteoarticular TB depends on several factors, including the severity of the disease at presentation, the presence of associated systemic illness, and the adequacy of treatment. If diagnosed and treated promptly, the majority of patients with osteoarticular TB can achieve a favorable outcome with resolution of symptoms and preservation of joint function. However, delayed diagnosis and inadequate treatment can lead to chronic joint destruction, disability, and poor quality of life.

In conclusion, osteoarticular TB is a rare but potentially devastating form of extrapulmonary TB that affects the bones and joints. The diagnosis of osteoarticular TB can be challenging and requires a high index of suspicion, along with a combination of radiological, microbiologic, and biopsy findings that are important for diagnosis and starting anti-tubercular therapy, which is the mainstay of treatment.

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