

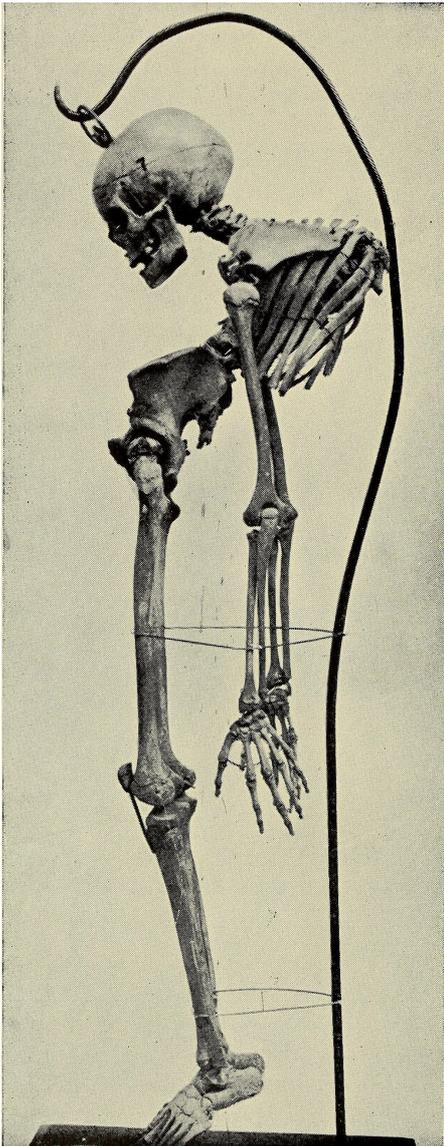
Pott's Disease Diagnosis

Tuberculous spondylitis, or Pott disease, is a condition caused by tuberculosis affecting the spine. It involves bone infection (osteomyelitis) of the vertebrae and disc infection (discitis). Among musculoskeletal tuberculosis cases, the spine is the most commonly affected area. Typical symptoms include back pain, spinal deformity leading to kyphosis, weakness in the lower limbs, and in severe cases, paralysis of the lower body.

Types of vertebral tuberculosis

Vertebral lesions can manifest in several distinct types:

- 1. Paradiscal:** This is the most common type where the areas surrounding two adjacent vertebrae, including the disc between them, are affected.
- 2. Central:** In this type, the body of a single vertebra is primarily affected, often leading to the early collapse of the weakened vertebra. The adjacent disc may remain unaffected.
- 3. Anterior:** Here, the infection is localized specifically to the front part of the vertebral body. It tends to spread vertically along the anterior longitudinal ligament.
- 4. Posterior:** This type involves infection of the posterior complex of the vertebra, including the pedicle, lamina, spinous process, and transverse process.



Diagnosis

To diagnose tuberculosis, several diagnostic tests are recommended:

- 1. Chest X-ray:** Provides an initial view of lung involvement and possible abnormalities.
- 2. Sputum cultures:** Used to detect the presence of tuberculosis bacteria in respiratory secretions.
- 3. Blood culture:** Helps identify tuberculosis bacteria in the bloodstream, aiding in diagnosis.
- 4. Tissue biopsy:** Essential for evaluating potential cancer and confirming tuberculosis infection.
- 5. Mantoux tuberculin skin test:** Shows positive results in 84-95% of patients with Pott's disease, indicating exposure to tuberculosis.
- 6. CT scanning:** Offers detailed images of bone lesions, sclerosis, disc collapse, and soft tissue involvement, particularly in epidural and paraspinal areas.
- 7. MRI:** Considered the gold standard for evaluating spinal disk-space infection and osteomyelitis, providing superior soft tissue detail and highlighting neural compression and disease extension. Contrast-enhanced MRI aids in distinguishing between tuberculosis spondylitis and other forms, based on specific enhancement patterns and signal characteristics.

8. Biopsy (CT-guided): Percutaneous biopsy of bone lesions under CT guidance allows safe tissue sampling and therapeutic drainage of abscesses.

9. Polymerase chain reaction (PCR): Amplifies DNA sequences specific to mycobacteria, enabling rapid detection and identification of tuberculosis strains, including drug-resistant mutations.

These tests collectively aid in accurate diagnosis and management of tuberculosis, ensuring timely treatment and control of the disease.

Medical Management

Tuberculosis is typically treated with a combination of primary drugs. In spinal TB, chemotherapy, or antitubercular treatment, is fundamental. Tubercle bacilli can exist in different forms—intracellular, extracellular, dormant, or actively multiplying. Therefore, a multidrug approach is crucial to target the bacilli at various stages and forms, reducing the risk of drug resistance.

Classifying spinal TB as uncomplicated or complicated guides treatment decisions. Uncomplicated cases are primarily managed medically. However, complicated spinal TB often requires surgical intervention alongside chemotherapy. For Pott's disease, the initial step involves surgically removing the tubercular infection, followed by a course of anti-tubercular drugs. This is followed by spinal reconstruction surgery.

Treatment plans are tailored based on neurological involvement. When neurological symptoms are present, pharmacotherapy is typically preferred over surgery. The standard medications used include Isoniazid, Rifampicin, Ethambutol, and Pyrazinamide.

Surgical intervention during the active phase of the disease is generally safer and leads to a quicker and more effective recovery.

References

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