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Case Report of Tuberculosis of The Spine With Pott's Paraplegia

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Abstarct:

Tuberculosis (TB) remains a major public health concern in India, which accounts for a quarter of the global TB burden (Sehgal et al., 2025) (1). Although pulmonary TB is the most common form, extra-pulmonary manifestations, including spinal TB (also known as Pott's disease), contribute significantly to morbidity Pott's paraplegia arises when tuberculosis spondylitis leads to destruction of vertebral bodies, resulting in collapse, kyphosis, and ultimately spinal cord compression.

1. Introduction:

Tuberculosis (TB) is an illness characterize by poverty, economic distress, weakness stigma, and discrimination [4-6]. TB affects about one-quarter of the global people. In 2021, 10.6 million were infectious with TB, leveling to 134 cases per 100000 people. Human immunodeficiency virus (HIV)-positive individuals accounted for 6.7% of all TB instance. Earth science, the WHO areas of South-East Asia (45%), Africa (23%), and the Western Pacific (18%) had the higher percentages of TB cases in 2021, while the Eastern Mediterranean (8.1%), the Americas (2.9%), and Europe (2.2%) had the lowest percentages [7]. This is caused by a mixed bag of factors, such as rising HIV infection rates, drug misuse, an increase in the population of rising nations, and the move of public to city-like country involvement of the skeletal system has been common in 1%-2% of all TB patients and 10% of extra pulmonary TB cases[8,9]. It is many common in rising nation, where many people continue to live in poor caliber have poor diet are full and lack proper hygiene. There is no deviation in susceptibility to TB depending on sex. Because of longer life expectation, diabetes, cancer therapy, HIV, and greater use of immunosuppressive drugs, spinal TB is proper more common among the older [10, 11].

The compartmental models applied to dengue demonstrate that urban density and human mobility are key drivers of epidemic spread (Enduri & Jolad, 2015)(2). The role of human mobility in infectious disease dynamics is well established. Enduri and Jolad (2015)(2) demonstrated that increased mobility accelerates the initial spread of dengue but may paradoxically lead to earlier suppression of the epidemic due to the creation of secondary and tertiary waves of infection and recovery.

When a root is compression owing to abscess process or a bone fragment, radicular pain might be a immediate symptom. Radicular discomfort directed to the belly might be mistaken for cholecystitis, pancreatitis, appendicitis, and renal disorders, leading to a delay in diagnosis and, in some cases, wrong examinations and operations [12]. There is muscular spasm on examination, which might manifest as large paraspinal muscles in the thoracolumbar spine and sciatic pain due to a one-sided spasm. Local sensitivity for the affected area power be evoked. Patients move with intense caution while supporting the afflicted portion. The "Tripod Sign" with thoracolumbar spine involvement is one of the symptoms of skeletal TB [13, 14].Here we present a case report of Tuberculosis of the spine with Pott's paraplegia

Case presentation:

A 44-year-old male, with no history of hypertension, diabetes, or allergies, presented with persistent body pain for three months, which worsened with exertion, a productive cough for two weeks, severe back pain for ten days, paraplegia (grade 4) urinary retention, and unintentional weight loss. He consulted Spine Surgeon, who recommended admission to Hospital for further management. On admission, pre-operative blood investigations were conducted, revealing hemoglobin (Hb):10.7, white blood cell count (WBC):10,440, platelet count (PLT):3,44,000, erythrocyte sedimentation rate (ESR):66, prothrombin time (PT):12.8, international normalized ratio (INR):1, activated partial thromboplastin time (APTT):28.2, fasting blood sugar (FBS):87, creatinine:1.09, sodium (Na):143, potassium (K+):3.45, chloride (Cl):99, SGPT:125. An abdominal and pelvic ultrasound was performed, showing gas-filled distended large bowel and rectum, a partially distended urinary bladder with a Foley's catheter in situ, and minimal right-sided pleural effusion. A chest X-ray was suggestive of haziness in the right mid-lobe and mild right-sided pleural effusion. Cervical spine X-ray showed degenerative changes. L-spine X-ray demonstrated mild posterior wedging of L5 and reduced pedicle IVDS space at L5-S1. Dorsal spine AP lateral X-ray showed partial collapse with irregular cortical surface involving end plates of D10 vertebra. Pelvic X-ray in AP view of both hips showed reduced sclerotic changes in both acetabular regions. A 2D echo was performed, and gene expert test indicated low MTB detected and rifampicin-sensitive. Anti-tuberculosis treatment was initiated. On 21/06/2024, SGPT was 90, on 23/06/2024, SGPT was 47, and on 25/06/2024, SGPT was 33. Pre-operative fitness was assessed by a Physician. Open fixation surgery was performed by Spine Surgeon, under a team of anesthesiologist on 20/06/2024. Intra-operative samples were taken and all investigations were conducted. Post-operatively, the patient was shifted to the ward and treated as advised. The patient’s stay was smooth and uneventful. He received IV fluids, IV analgesics, IV antacids, and other oral supportive treatments. The patient was discharged in stable hemodynamic condition. Following open fixation, anti-tuberculosis therapy, and stabilization of the spinal column, the patient underwent an intensive rehabilitation program focused on maximizing independence and preventing secondary complications.

After thirteen month of surgery Lateral and A-P radiograph (18/7/2025) showed that orthopedic fixation implant seen involving of D-8, D-9, D-11, 12 vertebral body. Severe wedging of D10 vertebral body-vertebral plana.(Figure 1)

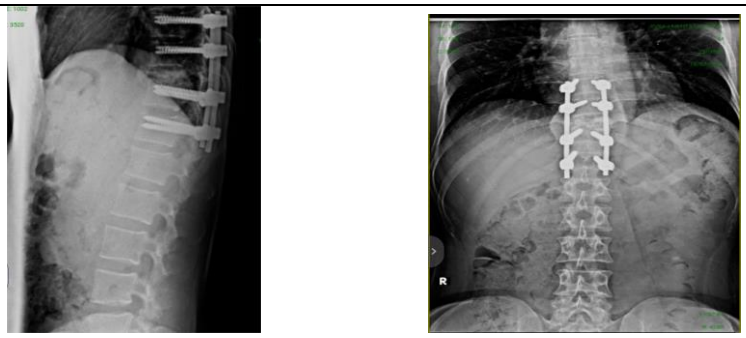

Figure 1: Post operative Lateral and A-P radiograph show that orthopedic fixation implant seen involving of D-8, D-9, D-11, 12 vertebral body. Severe wedging of D10 vertebral body-vertebral plana. Date:18/07/2025

Discussion:

Basing on the correlation between the clinical picture and radiographic findings, the present patient classified as phase IV of tuberculosis with the 4th grade of paraplegia. Patients presenting with grade 1 or 2 of paraplegia on physical examination are qualified for conservative treatment, which includes long-lasting multidrug antibiotic therapy. Such management is recommended due to the inflammatory character of the compression on the neural structures which may successfully resolve after suitable antibiotic therapy is introduced. In these cases the diagnosis should be made by performing needle biopsy from the affected site, which is the gold standard. Conversely, a surgery is the treatment of choice in patients with spinal tuberculosis and grade 3 or 4 of paraplegia confirmed during physical examination, with the compression on the spinal cord confirmed with MRI or computed tomography. The other reason of surgery is: Severe kyphosis with gibbus, broad cold abscess or lack of effect to conservative care. The decompression of the spinal cord through extended laminectomy, the removal of pathological tissues and transpedicular stabilization of the spine is a common method used in such cases. Targeted antibiotic therapy should be introduced after obtaining a positive tuberculosis test .In the presented case, the patient had spinal tuberculosis ,which is considerably more common .Moreover, the 10^{th} thoracic vertebra was involved in our patients, which is also a typical location .

Conclusion:

Spinal TB remains a significant cause of morbidity and disability, particularly in resource-limited settings where delayed diagnosis is common and access to advanced imaging or surgical care may be restricted. Early recognition, facilitated by high clinical suspicion and prompt MRI evaluation, is essential to prevent devastating neurological complications such as paraplegia.Multidisciplinary care, including rehabilitation and psychosocial support, is critical to optimizing patient outcomes.

Conflicts of interest: There are no conflicts of interest.

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