

**ATYPICAL PRESENTATION OF TB POTT'S SPINE IN A MALE PATIENT WITH
PARAPLEGIA- A CASE REPORT****Kripashankar Krithika^{1*}, Ramaswamy A.², Sunil S.³ and Dr. K. V. Giriraja⁴**^{1,2,3}Junior Resident, Department of Internal Medicine, MVJ Medical College and Research Hospital, India.⁴Professor, Department of Internal Medicine, MVJ Medical College and Research Hospital, India.***Corresponding Author: Kripashankar Krithika**

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ABSTRACT

Pott's disease is a form of spondylodiscitis caused by mycobacterium tuberculosis. It is a serious form of spinal infection that can lead to terrible disabilities in case of undiagnosed and must be treated early. This report details the case of a patient with undiagnosed spinal tuberculosis in a 70-year-old man, K/C/O Type 2 diabetes mellitus, Systemic hypertension and CKD on Maintenance Haemodialysis who had complained of lower back pain over the course of several months. The case progressed to the point that he had difficulty standing and numbness, then weakness of the lower limbs and retention of urine. This patient was referred for a whole spine Magnetic Resonance Imaging (MRI) which revealed changes suggestive of tubercular etiology/ Pott's spine. The patient was started on anti-tuberculous drugs. The patient however succumbed to his comorbidities.

KEYWORDS: Pott's spine, paraplegia, Anti tubercular drugs.**INTRODUCTION**

Tuberculosis (TB) is one of the oldest known infectious diseases and it is a chief source of morbidity and mortality worldwide. Around 25% to 33% of the worldwide population has latent TB, according to the World Health Organization.^[3]

Pott's disease or tuberculous spondylitis is a rare condition. It spreads through hematogenous route.^[5] It involves multiple vertebrae with osteomyelitis and arthritis. The most common site is the anterior aspect of the vertebral body. The lower thoracic vertebrae is the most common affected site.

It presents with constitutional symptoms like fever, night sweats, weight loss and malaise, back pain, tenderness, restricted Spinal motion, paraplegia or paraparesis, and kyphotic or scoliotic deformities.^[5]

Spread to the vertebral body may also be from contiguous para-aortic nodes. There is usually a slow collapse of one or usually more vertebral bodies, resulting in gibbus deformity.

This angulation along with epidural granulation tissue and bony fragments, can lead to cord compression. In late-stage spinal TB, large paraspinal 'cold' abscesses can occur.^[7]

Clinically, Pott's spine accounts for 2% of all cases of TB, 15% of extrapulmonary, and 50% of skeletal TB.

Pott's disease is more commonly seen in males. Back pain is the earliest symptom and the most common one.^[2]

Patients usually experience back pain for weeks before seeking treatment. The pain caused by spinal TB can present as spinal or radicular. The neurologic manifestations can range from a single nerve palsy to hemiparesis or quadriplegia.

Magnetic resonance imaging (MRI) is one of the best and the most sensitive diagnostic modality for Pott's spine. MRI demonstrates disc collapse, disc destruction, cold abscess, vertebral wedging, vertebral collapse, marrow edema, and spinal deformities.^[7]

Ultrasound and computed tomographic (CT) guided needle aspiration or biopsy is the best technique for early histopathological diagnosis.

Available Treatment Techniques are Anti-Tuberculosis Chemotherapy, Surgical Drainage of Abscess, Surgical Spinal Cord Decompression, Surgical Spinal Fusion and Spinal Immobilization.^[7]

CASE REPORT

- A 70 year old male, K/C/O Type 2 diabetes mellitus, Systemic hypertension, Chronic Kidney disease (CKD) on MHD (Maintenance Hemodialysis) 2/7 presented with gradually progressive severe backache for around 3 months, which was associated with sudden onset of weakness of B/L lower limbs

with loss of sensation below umbilicus, urinary retention with suprapubic distention and difficulty defecating. Patient denied any history of trauma. His family history was unremarkable.

- On general examination, there were features of anemia. His vital signs showed no fever, blood pressure of 170/80 mmHg, pulse of 69 beats/min; and respiratory rate of 18 breaths/min.
- A head and neck examination revealed tenderness at the thoracic spine with gibbus like deformity in the thoracic spine at T8 level.
- There was no lymphadenopathy and the respiratory system examination showed minimal B/L basal crepitations and cardiovascular examinations showed Ejection systolic murmur in the pulmonary area.
- On neurological examination, power, tone, and reflexes appeared normal in the upper limbs bilaterally and in the lower limbs there was decreased tone in B/L lower limbs, with a power of 0/5. The superficial and deep tendon reflexes below the T8 level were completely lost. On examination of sensory system, all modalities of sensation were lost below the T8 level.
- The routine laboratory test results and urine analysis were within the normal limits except for a raised serum potassium of 6.4.

- An ultrasound examination of abdomen pelvis revealed gross distention of bladder due to urinary retention.
- MRI of the spine showed bony ankylosis of T7-T8 vertebra with complete loss of intervening disc space with focal area of altered signal intensity with a small pre/para vertebral collection seen anterior and lateral to vertebra appear to be tracking from bone at this level- suggestive of tubercular etiology/Pott's spine. Chest radiograph showed no abnormalities of the lungs.
- Venous doppler of right lower limb showed features suggestive of Deep vein thrombosis.
- Pulmonologist opinion was sought for starting Anti tubercular therapy and it was started as per renal dosage.
- Patient was continued on Haemodialysis, during one of the dialysis sessions, patient went in for hypotension in view of which the dialysis was aborted and patient was shifted to ICU.
- Patient was on inotrope support in the ICU. Despite triple inotropic support the patient's BP did not improve.
- The patient attenders wanted to take the patient to a higher centre for further management. Ultimately the patient succumbed to his comorbidities.

Stages of spinal tuberculosis (table 1)

Stage	Description	Clinicoradiological features	Usual duration
1	Stage of implantation, incipient stage or pre destruction stage	Dull back pain with muscle spasm in the back, straightening of spine or loss of curve	<3 months
2	Stage of early destruction	Diminished disc space, paradiscal erosion kyphosis <11 degree(K1)	2- 4 months
3	Stage of advanced destruction and collapse	2 or more vertebral involvement with collapse, kyphosis 11 to 60 degree (K2) or gibbus> 60 degrees(K3)	3 to 9 months
4	Stage of neurological involvement	Stage 3 or 4 with 4 grades of paraplegia	variable
5	Stage of residual deformity and aftermath	Kyphosis K1, K2, K3 disease active locally grumbling, reactivated, or healed	3-5 years

Classification of paraplegia in spinal tuberculosis (table 2)

Grades of paraplegia	Complaints/symptoms		Examination/neurological deficit		
	Weakness	Walking	Motor	Sensory	Autonomic
1	Negligible or weakness appearing after exercise	Able to walk without support	Extensor plantar+/- brisk ankle jerks muscle power grade 4 to 5	-	-
2	Mild or feels weakness	Able to walk with support	Motor weakness, brisk tendon jerks, ill sustained muscle clonus, muscle power grade 1 to 2	Sensory dulling and paraesthesia	-
3	Moderate or weakness is more marked	Not able to walk Confined to bed Can move limbs	Brisk tendon jerks, sustained muscle clonus, muscle power grade 1 to 2	Hypo aesthetic and anaesthetic patch	May be present
4	Severe or complete loss of power and control	Not able to move limbs even in bed	Paraplegia in extension, power grade 0 Paraplegia in flexion, power grade 0, flaccid paralysis	Total loss	Complete loss of bladder and bowel control and incontinence

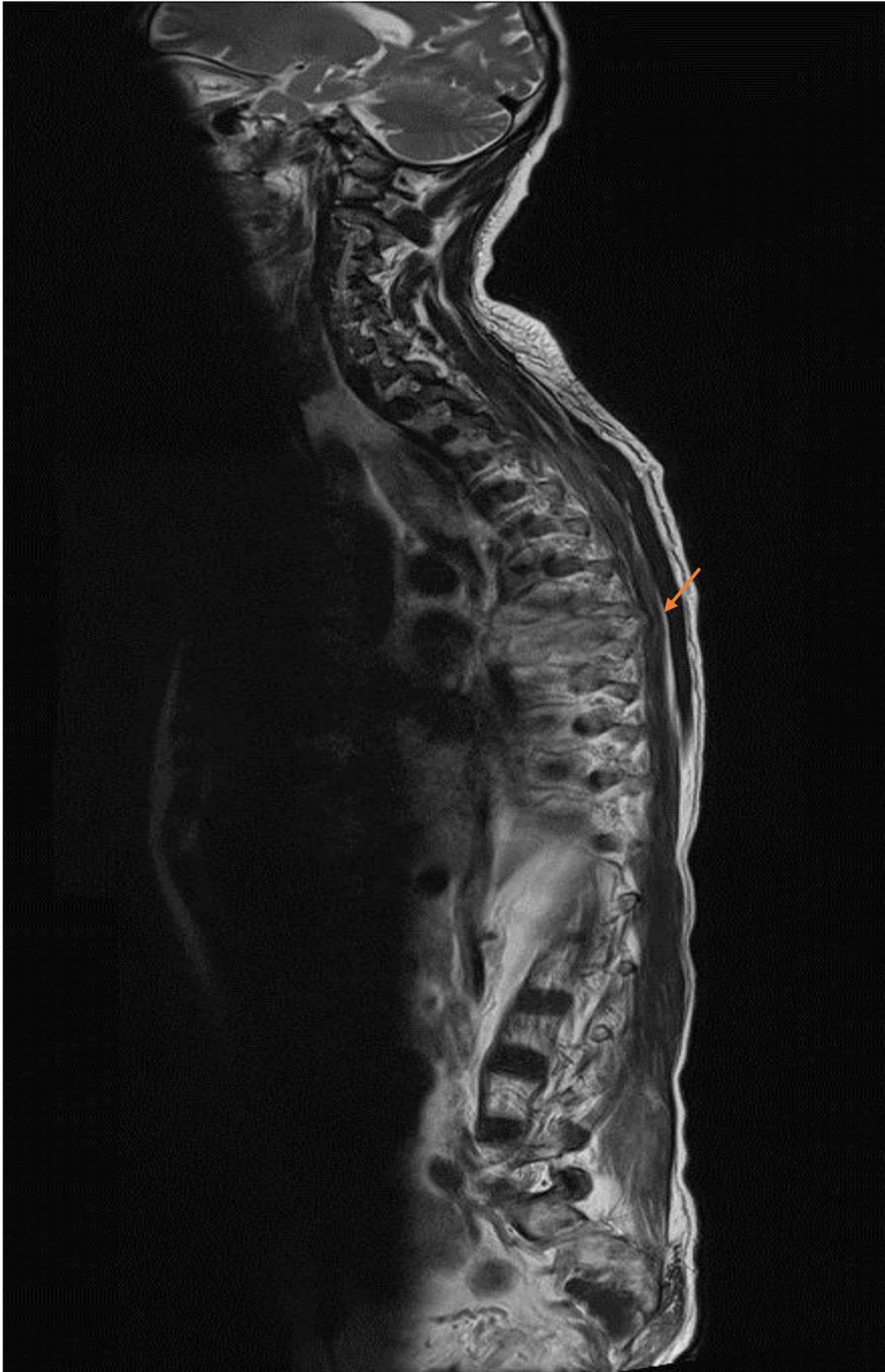


Image 1- Mri whole spine.



Image 2- Lumbar spondylosis.



Image 3- Bony ankylosis of T7-T8 vertebra.

Findings on MRI whole spine

1. Bony ankylosis of T7-T8 vertebra with complete loss of intervening disc space with focal area of altered signal intensity with a small pre/para vertebral collection seen anterior and lateral to vertebra, appears to be tracking from bone at this level -suggestive of tubercular etiology/pott's spine.
2. Diffuse osteopenia
3. Lumbar spondylosis
4. Mild disc bulge with anterior disc osteophyte complex at l2-l3 disc level causing mild anterior thecal sac indentation.
5. Diffuse disc bulge with central disc protrusion l4-l5 disc level causing anterior thecal sac indentation and narrowing of bilateral lateral recesses and neural foramina causing indentation of bilateral traversing nerve roots and bilateral exiting nerve roots.
6. Mild diffuse disc bulge at l5-s1 disc level causing anterior thecal sac indentation and mild narrowing of of bilateral lateral recesses and neural foramina causing indentation of bilateral exiting nerve roots.

DISCUSSION

Tuberculosis is one of the most common causes of death by infectious diseases worldwide.

The spinal form is the most common bone joint localization. It occurs at an average age of between 30 and 40 years. The risk factors include the presence of a chronic disease such as diabetes or chronic kidney

failure, a long-term corticosteroid therapy, or HIV infection.

In this case, the patient had predominantly anterior spinal tuberculosis, which is considerably more common. Moreover, the last thoracic vertebra was involved in our patient, which is also a typical location. MRI revealed characteristic cold abscesses.^[5]

Based on the relation between the clinical picture and radiographic findings, the anterior form of tuberculosis is divided into 5 stages (Table 1).^[5]

The anterior form of spinal tuberculosis is usually associated with anterior spinal cord compression.

Therefore, motor nerve fibers are usually destroyed first, as they are located anteriorly to sensory fibers in the spinal cord. The destruction of sensory fibers occurs at a later stage of the disease.

The compression of neural structures in the thoracic and lumbar segments leads to paresis, and, finally, lower limb paralysis. The risk of developing neurological deficits in patients with anterior spinal tuberculosis ranges from 23% to 76%.

Paraplegia in the course of tuberculosis is classified into two groups: Paraplegia in patients with the active disease (early-onset paraplegia) and paraplegia in convalescents (late-onset paraplegia).^[5]

The former type requires the immediate introduction of active treatment and is associated with more favorable prognosis, while the latter may occur even after 20 to 30 years after tuberculosis infection and is usually associated with permanent spine deformities.

Paraplegia occurring in spinal tuberculosis is divided into 4 grades depending on the degree of paresis and locomotor capabilities. (Table 2).^[5]

Basing on the relation between the clinical picture and radiographic findings, the present patient may be classified as phase IV of anterior 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.

This 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 such cases, the diagnosis should be made by performing needle biopsy from the affected site, which is the gold standard.^[3] On the other hand, a surgery is the

treatment of choice in patients with anterior 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 indication of surgery is: Severe kyphosis with gibbus, wide cold abscess or lack of response to conservative treatment.^[7]

Our patient initially presented with worsening right lower extremity weakness and paresthesia and subsequently found to have cord compression.

The patient chose to forego surgical intervention although risks were emphasized including permanent paralysis.

Our patient was ultimately advised for ATT for 6-9 months. The toxicity of the drugs should be constantly monitored.

CONCLUSION

Primary tuberculosis with osseo-articular involvement, including the spine, is a rare phenomenon.^[5]

In the presented case, Pott's disease initially masked itself as a simple back pain.

Treatment was started based on high clinical suspicion of TB, plus MRI characteristic findings.

Early identification and prompt treatment enhance the prognosis for spinal TB. Even in the absence of neurological symptoms and indications, individuals who appear to have persistent back pain must be viewed with a high degree of clinical suspicion.^[5]

Medical treatment is generally effective. However, MDR/XDR TB is increasing and should be identified early by using molecular methods to diagnose spinal TB and drug resistance. Advanced cases with significant bone involvement, abscess development, or paraplegia require surgical intervention. The only strategy to avoid spinal TB is to stop the spread of the disease.

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