

## CASE REPORT

## A rare case of Spinal Tuberculosis presented as right lower abdominal pain

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### Abstract:

Tuberculosis is among the most common infection in the world, similarly vertebral tuberculosis is the commonest form of skeletal tuberculosis. Usually the patient presents with pain in the lower back and weakness of lower limbs. Here we present our case in which patient presented with right lower quadrant pain. This is one of the rare presentation of vertebral tuberculosis.

### Case report:

We present the history of 39-years old Saudi family who presented in the emergency department of King Abdullah Hospital, Bisha with one week history of right lower quadrant pain radiating to back. On examination patient was afebrile and her vitals are within normal limits. Her abdominal examination revealed soft abdomen with mild tenderness right iliac fossa. There was no rebound tenderness, rigidity or guarding in right iliac fossa. Patient was tender at lower dorsal area. Locomotor system revealed no sensory deficit but patient has grade III power in both lower limb. CT spine suggestive of paraspinal abscess extending from D5 to D11. The diagnosis was confirmed by MRI. Spinal surgeon was involved and incision and drainage done. Post-operatively patient has smooth recovery but the power in lower limb remain between grade II and III. Patient had post-operatively physiotherapy showed slow improvement in his motor power. On 6<sup>th</sup> month followup patient has grade IV power in both limbs.

**Conclusion:** Our case illustrate this unusual form of spinal tuberculosis presented with lower abdominal pain and patient was admitted under general surgeon. High index of suspicion is required to diagnose this important disease and appropriate surgical intervention is required for better surgical outcome, to avoid dreadful complications.

**Keywords:** Spinal tuberculosis, RIF pain, paraparesis of lower limbs, motor deficit of lower limb, paraplegia

### Introduction:

The tuberculosis is one of the most common infection involving the skeletal system.<sup>1</sup> Tuberculosis of spine may result in serious deformity including permanent neurological damage. It can involve any part of spine. In majority of cases, there is involvement of lower dorsal and upper lumbar spine.<sup>2</sup>

The usual presentation of the disease is low grade fever, weight loss, pain in the back and pa-

tient may present with weakness of lower limbs and paraplegia.<sup>3</sup> Our patient has an abnormal presentation in the form of right lower quadrant pain which mimic acute appendicitis.

Tuberculosis of the spine was first described by Sir Percivall Pott in 1779.<sup>4</sup> The most common symptom is backache and rarely the tuberculosis of spine may present with pain resembling acute appendicitis, pancreatitis or cholecystitis.

The importance of recognizing this condition

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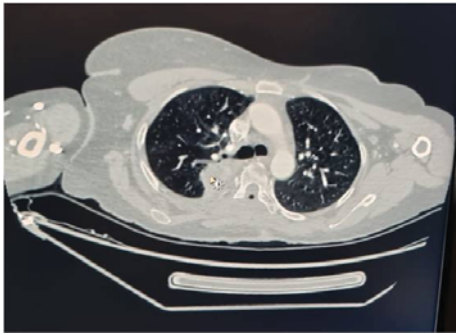


Figure-1: Axial view showing involvement of the vertebrae with consolidation in the right lung.



Figure-2: Showing the paraspinal collection in the lower dorsal and upper lumbar spine



Figure-3: Showing resolution of the abscess following laminectomy & drainage of the abscess

stems from the fact that it has the potential to cause severe neural damage and deformity.<sup>5</sup>

Tuberculosis is among the most common infection in the world. Similarly vertebral tuberculosis is the commonest form of skeletal tuberculosis. Usually the patient presents with pain in the lower back and weakness of lower limb. Here we present our case in which patient presented with right lower quadrant pain. This is one of the rare presentation of vertebral tuberculosis.

#### Case report:

We present the history of 39 years old Saudi lady who presented in the emergency department of King Abdullah Hospital, Bisha with one week history of right lower quadrant pain radiating to back. On examination patient was afebrile and her vitals were within normal limits. Her abdominal examination revealed soft abdomen with mild tenderness right iliac fossa, there was no rebound tenderness, rigidity or guarding in right iliac fossa. Patient was tender at lower dorsal area. Locomotor system revealed no sensory deficit but patient had grade III power in both lower limb. CT spine suggestive of paraspinal abscess extending from D5 to D11. The diagnosis was confirmed by MRI. The spinal surgeon was involved and incision and drainage done. Post-operatively patient had smooth recovery but the power in lower limb remain between grade II and III. Post-operatively patient received intense physiotherapy which resulted improvement in his motor power. On 6<sup>th</sup> month followup patient has grade IV

power in both limb and on 9 month followup she has grade V power in both lower limbs.

#### Discussion:

In tuberculosis of joints and bones the symptoms are non-specific therefore there is a delay in diagnosis and further sequelae is destruction of joints and in the case of spine may have paresthesia in the legs which may lead to paraplegia, if no treatment is offered. Spinal tuberculosis is rare in developed countries. Tuberculosis of the spine has the potential for serious morbidity, including permanent neurologic deficit and severe deformity.<sup>5</sup>

Tuberculosis of spine may involve any part of the spine, there is a predilection for the lower thoracic and upper lumbar vertebrae.<sup>6</sup> The usual presentation includes, low grade pyrexia irritability, weight loss, back pain, kyphosis abnormal gait and paraplegia.<sup>4,6</sup> A typical presentation of spinal tuberculosis mimick malignancy and fracture.<sup>7,8</sup>

Pande et al, highlighted one of the atypical presentation of tuberculosis of spine as a herniated lumbar intervertebral disc.<sup>9</sup>

These atypical presentation of spinal tuberculosis present a challenge for an appropriate diagnosis and early treatment to avoid serious complications like paraplegia.

Spinal tuberculosis present as acute abdomen has been describe in few reports, but in these cases the abdominal pain occurs due to psoas abscess with the etiology being tuberculosis.

Abdominal ultrasound may show hypoechoic lesions suggestive of psoas abscess in 60% of cases but may not be able to identify underlying etiology.<sup>10</sup>

MRI have 90% sensitivity and 80% specificity for diagnosing psoas abscess.<sup>11</sup> Patient with thoracic spine disease are particularly at risk of developing paraparesis and paraplegia like in our case.<sup>12</sup>

Spinal tuberculosis can cause referred pain to abdomen as in this case. There are certain theories. Firstly, the hyperexcitability theory, according to which, referred pain occurs through cross connection between second order neurons supplying the different regions, it only happens when the input reaches a certain threshold.<sup>13,14</sup>

Secondly, the Axon Reflex theory, explains that certain primary sensory neurons have bifurcating axons innervating both somatic and visceral targets leading to confusion for the source of afferent activity.

Thirdly, the Convergence theory, which suggest that the different nerve fibers from one region converge in the spinal cord with different fibers from another region onto a common, second order neurons there by allowing mis-interpretation of the source of pain by central nervous system.<sup>15</sup>

Spinal tuberculosis is a medical disease and timely diagnosis with anti-tuberculosis drugs play important role in recovery of the patient. 4-drug regimen with Rifampasin, Isonized, Ethambutal and Pyrizinamide for 3 months followed by combination of Rifampasin, Isonized and Ethambutal for 9-months play an important role in controlling the disease.

### Conclusion:

Spinal tuberculosis may present with unusual symptoms like abdominal pain. The clinician have to be vigilant and he needs to perform complete physical and neurological examination in order to reach the diagnosis.

Surgeons should be aware that spinal tuberculosis may have unusual presentation. So he needs to keep spinal tuberculosis in the differential diagnosis of abdominal pain, proper early workup to reach the diagnosis and appropriate treatment is must to avoid complications.

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### Role and contribution of author:

Saleh Al-Khabti Alghamdi, collected the data, and did intense search on spinal tuberculosis presented as acute abdominal emergency. He also collected the references and wrote the article.

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