



# Tuberculous Spondylodiscitis And Accompanying Bilateral Psoas Abscess, MRI Findings

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## Abstract

**Introduction:** Spondylodiscitis is defined as infection of the vertebral body, intervertebral disc and posterior vertebral arch. Tuberculous spondylodiscitis may occur as a primary infection and may also occur with the activation of latent tuberculosis. In the tuberculosis spondylodiscitis, the lower thoracic and upper lumbar vertebrae are most affected, and there is often an involvement of the first lumbar spine due to infection. In this case we aimed to investigate magnetic resonance imaging (MRI) findings of tuberculous spondylodiscitis and accompanying bilateral psoas abscess.

**Case:** A 22-year-old male patient was admitted to the clinic with the complaint of back pain for 1 year. MRI was performed to the patient. L4, L5 and S1 vertebrae corpus destruction, bone marrow edema in these vertebrae and accompanying bilateral psoas abscess appearance were observed.

**Discussion:** Conventional radiology has a key role in the diagnosis of musculoskeletal tuberculosis. Bone involvement with simple direct graphy can only be seen after eight weeks. Computed tomography (CT) or MRI is more specific in diagnosis. CT, MRI and bone sintigraphy are radiological methods required for early diagnosis and wide spread of infection and soft tissue involvement. Significant MRI findings for tuberculosis spondylodiscitis are the vertebral interosseous abscess and jumping lesions, subligamentous and epidural spread, broad-edged progression in the paraspinal area.

**Conclusion:** Radiological examinations should be performed as soon as possible to avoid delay in diagnosis in spinal tuberculosis. Delayed diagnosis significantly reduces cure rates and increases complication development and morbidity.

## Introduction

Spondylodiscitis is defined as infection of the vertebral body, intervertebral disc and posterior vertebral arch. Extrapulmonary tuberculosis is an important health problem in developed and developing countries. Tuberculosis (Tbc) spondylodiscitis diagnosis is usually made by traditional methods such as acid-fast bacilli staining, radiographic findings, and culture. Current diagnostic methods are inadequate due to low levels of mycobacteria in the sample and/or time-consuming procedures. Tuberculous spondylodiscitis may occur as a primary infection and may also occur with the activation of latent tuberculosis. In the tuberculosis spondylodiscitis, the lower thoracic and upper lumbar vertebrae are most affected, and there is often an involvement of the first lumbar spine due to infection [1-3].

Tuberculosis psoas abscess is usually associated with Pott's disease, but it may also develop through a hematogenous spread of a secret source or direct dissemination from neighboring structures. In this case we aimed to investigate magnetic resonance imaging (MRI) findings of tuberculous spondylodiscitis and accompanying bilateral psoas abscess.

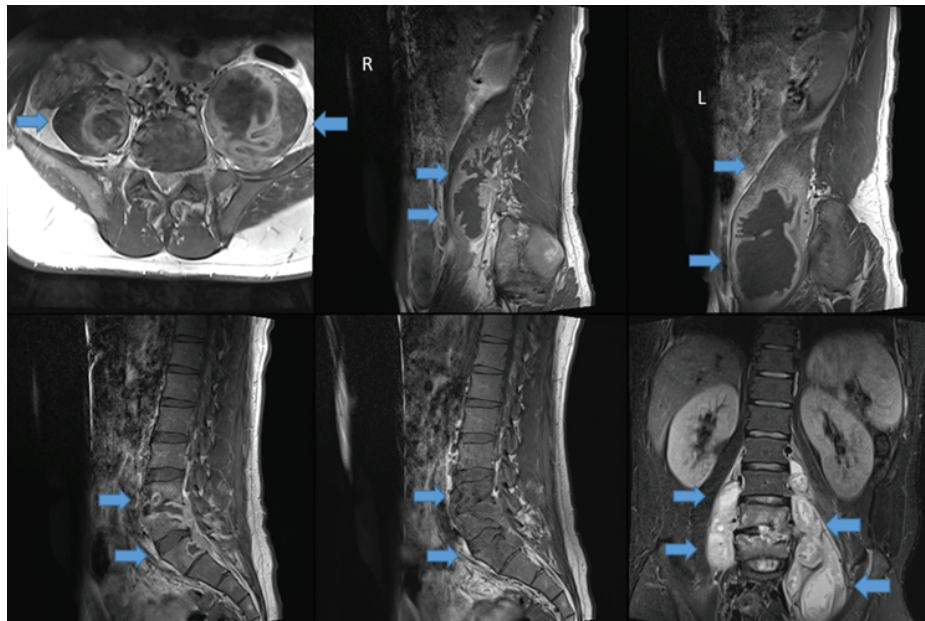
## Case

A 22-year-old male patient was admitted to the clinic with the complaint of back pain for 1 year. MRI was performed to the patient. L4, L5 and S1 vertebrae corpus destruction, bone marrow edema in these vertebrae and accompanying bilateral psoas abscess appearance were observed. In the axial and sagittal T1 post contrast series; contrast enhancement in bilateral psoas abscess and vertebral corpus. In T1 sagittal image, heterogenous and hypointense appearance. In T2 coronal image, hyperintense bilateral psoas abscesses were observed (Figure 1). For sampling, abscess drainage was performed on our patient and the result of the study performed with the Real-Time PCR method on the same sample was determined to be positive for Tbc.

## Discussion

Tbc spondylodiscitis usually has an insidious onset and a slow progression. It causes local symptoms such as night pain and muscle spasm. It is one of the rare but highly morbid causes of low back pain, and almost all patients are diagnosed late due to the lack of specific symptoms [1,4]. As a result of ischemic changes due to vertebral compression, paraparesis,

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**Figure 1:** In the axial and sagittal T1 post contrast series; contrast enhancement in bilateral psoas abscess and vertebral corpus. In T1 sagittal image, heterogenous and hypointense appearance. In T2 coronal image, hyperintense bilateral psoas abscesses were observed.

paraplegia, spasticity, increased deep tendon reflexes, varying degrees of motor impairment, bladder and anorectal dysfunction occur [4].

The sites of involvement of tuberculosis in the spine are quite common. In Pott's disease, the infection usually begins in the anterior part of the vertebral corpus and is held more often than in the posterior portion. Demineralization and loss of bone matrix occur. As the infection progresses, obliteration is seen with anterior splitting and angulation of the vertebra. Reactive sclerotic changes occur and the vertebral surfaces become brighter and then move to the disc near the bone.

Conventional radiology has a key role in the diagnosis of musculoskeletal tuberculosis. Bone involvement with simple direct graphy can only be seen after eight weeks. Computed tomography (CT) or MRI is more specific in diagnosis[5-8]. CT, MRI and bone scintigraphy are radiological methods required for early diagnosis and wide spread of infection and soft tissue involvement. Significant MRI findings for tuberculosis spondylodiscitis are the vertebral interosseous abscess and jumping lesions, subligamentous and epidural spread, broad-edged progression in the paraspinal area. Only vertebral involvement, only disc involvement, or 2 adjacent vertebrae involvement without disc involvement may occur. If spondylodiscitis presents with atypical findings, it may be confused with bone tumors and metastasis. Characteristic findings of spondylodiscitis are hypointensity on T1-weighted (A) images, hyperintensity on T2- weighted images and fat-suppressed T2 weighted images, and contrast enhancement on contrast-enhanced images in the disc and adjacent vertebrae, and abscess or phlegmon in the paravertebral soft tissue and epidural space. Phlegmon stains homogeneously, while abscesses show peripheral ring-like staining. It is difficult to distinguish

tuberculosis, brucellar, and pyogenic spondylodiscitis radiologically. Multiple level involvement, large paravertebral abscess, meningeal involvement, and subligamentous spread are observed in tuberculosis spondylodiscitis. Brucellosis spondylodiscitis mostly affects the lumbar region. Bone destruction is less severe than tuberculosis. Osteophyte observed in the anterior vertebral endplate is typical. [9].

## Conclusion

Radiological examinations should be performed as soon as possible to avoid delay in diagnosis in spinal tuberculosis. Delayed diagnosis significantly reduces cure rates and increases complication development and morbidity.

## Ethical statements

The approval of the ethics committee was obtained before the initiation of the study.

## Conflict of Interest

The authors declare that there are no financial or other relations that could lead to a conflict of interest.

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