

## Tuberculosis of Sacrum : A Rare Location of Spinal Tuberculosis

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**Abstract.** Tuberculosis is one of the most common infectious diseases in the world. The thoracolumbar spine is the commonest form of vertebral tuberculosis, whereas isolated tuberculosis of the sacrum is rarely reported in the literature.

A male patient of 22-year old had complained low back pain since 2 years before admission to hospital without history of trauma on back. He also got low-grade fever and weight loss. There was no tuberculosis contagion found, no cough or night sweat. Clinical examination revealed neurological deficit with strength of both lower extremities were 4 and hypestesia in the level of lumbar 5 and downward. Radiographs of lumbosacral showed deformity of lumbar 5. CT scans of spine showed deformity of sacrum. MRI revealed spondylolisthesis L5-S1, S1-S2, S2-S3 and mass in the anterior posterior and lateral of paralumbar 5 and parasacral. There is no involvement of gluteus muscle and the around muscle.

The patient underwent surgical of sequestrectomy with drainage abscess and lumbo-sacral-iliac fusion. The culture of sacral tissue showed Mycobacterium tuberculosis. The patient was treated with combination of four anti-tuberculosis agents.

**Keyword:** Lumbo-Sacral-Iliac Fusion, Mycobacterium Tuberculosis, Sequestrectomy, Tuberculosis of Sacrum

**Abstrak.** Tuberkulosis adalah salah satu penyakit infeksi yang sering di Indonesia. Tulang thorakolumbal adalah lokasi tuberkulosis vertebra yang sering timbul, sedangkan tuberkulosis pada tulang sacrum jarang dilaporkan.

Seorang laki-laki usia 22 tahun memiliki keluhan utama nyeri punggung sejak 2 tahun sebelum masuk rumah sakit. Riwayat trauma tidak ditemukan. Pasien juga mengalami demam dan penurunan berat badan. Riwayat kontak penderita TB tidak dijumpai, riwayat batuk tidak dijumpai, riwayat keringat malam tidak dijumpai. Pemeriksaan klinis menunjukkan defisit neurologis kedua anggota gerak bawah dengan kekuatan motoric 4 dan hypestesia setentang lumbar 5 kebawah. Pemeriksaan radiografi lumbosacral menunjukkan deformitas lumbar 5. Pemeriksaan CT scan lumbosacral menunjukkan deformitas sacrum. Hasil MRI menunjukkan spondilolistehsis L5-S1, S1-S2, S2-S3 dan massa di anterior posterior dan lateral paralumbar 5 dan parasakral. Tidak ditemukan keterlibatan otot gluteus dan otot sekitar.

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*Dilakukan operasi sekuestrektomi dengan drainase abses dan fusil umbo-sakral-iliac. Berdasarkan hasil pemeriksaan kultur jaringan, ditemukan bakteri Mycobacterium tuberculosis. Pasien diterapi dengan pemberian obat antituberkulosis.*

**Kata Kunci:** *Fusi Lumbo-Sakro-Iliac, Mycobacterium Tuberculosis, Sekuestrektomi, Tuberculosis Sacrum*

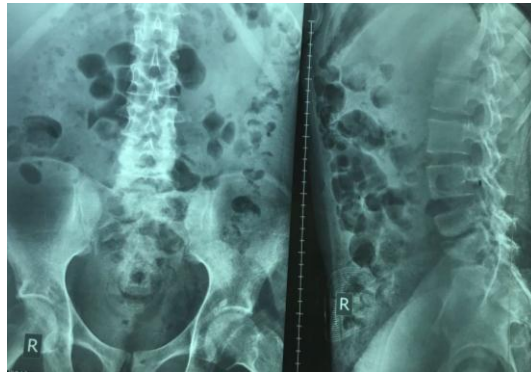
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## 1 Introduction

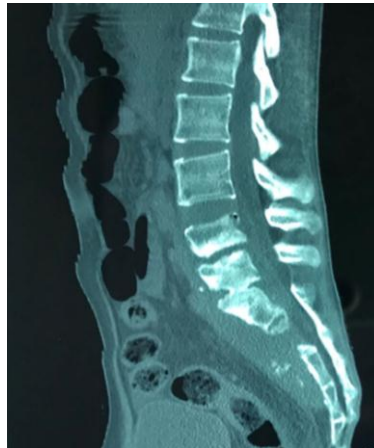
Tuberculosis remains one of the most common infectious diseases in the world<sup>1</sup>. Tuberculosis is still a major public problem for the developing countries<sup>2</sup>. The proportion of spinal tuberculosis (TB) to all TB cases varied from 1% to 5%<sup>3</sup>. Vertebral tuberculosis is the commonest form of osteoarticular tuberculosis (OAT), which represent 2% to 5% of all cases of tuberculosis and 11% to 15% of extrapulmonary tuberculosis. The principal location of the OAT is the spinal cord, which represents about 50%<sup>1</sup>. The thoracolumbar spine is affected most frequently, whereas the cervical spine and sacrum is rare<sup>4</sup>. Sacroiliac joint infections represent a diagnostic dilemma for their vague and nonspecific clinical presentation<sup>2</sup>. Isolated tuberculosis of the sacrum is rarely reported in the literature. This leads to a delay in diagnosis and increases the morbidity and mortality of normally curable disease<sup>1</sup>.

## 2 Case Report

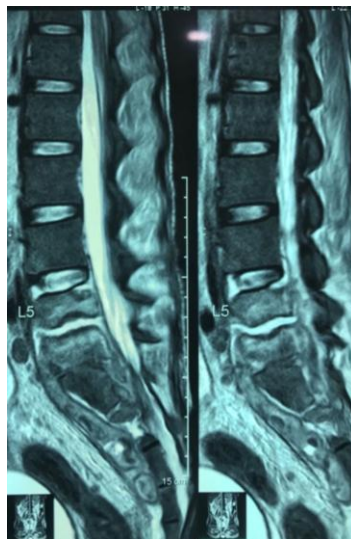
A male patient of 22-year-old had complained low back pain since 2 years before admission to the hospital without history of trauma on the back. The pain was aggravated while sitting and squatting. He also got low-grade fever and weight loss. There was no tuberculosis contagion found, no cough or night sweat. The other complain was a chronic wound on the left posterior thigh associated pus discharged came out from the wound. Clinical examination revealed neurological deficit with strength of lower extremities were 4 and hypesthesia in the level of lumbar 5 and downward since 2 days before admission to the hospital. Laboratory examination showed a total leukocytic count of 8890 / $\mu$ L with neutrophils (82,6%), lymphocytes (10%), and hemoglobin 8,4 g/dl. Chest x-ray was normal. Radiographs of lumbosacral showed deformity of lumbar 5 (Figure 1). Radiograph of fistulography showed 2 cutaneous-subcutaneous fistels. There is soft tissue process, but no osteomyelitis in the left femur radiograph. Bacteriological study with research tuberculosis of fluid discharged of the wound revealed direct examination and the culture were negative. CT scan spine showed deformity of lumbar 5 and sacrum (figure 2). MRI revealed spondylolisthesis L5-S1, S1-S2, S2-S3 and mass in the anterior posterior and lateral of paralumbar 5 and parasacral. There is no involvement of gluteus muscle and the around muscles (Figure 3).



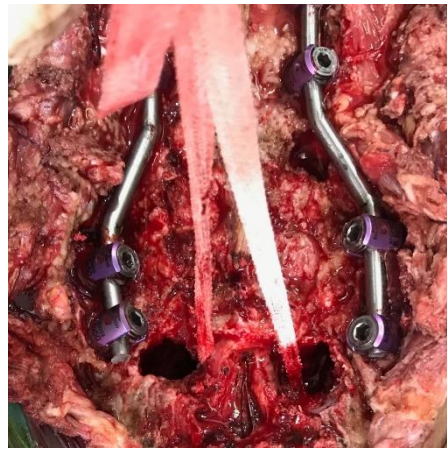
**Figure 1.** Radiographs of lumbosacral showed deformity of lumbar 5<sup>th</sup>



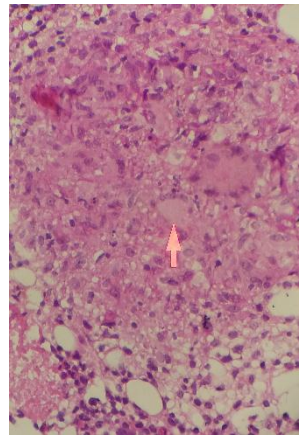
**Figure 2.** Non Contrast CT Scan of spine showed deformity of lumbar 5<sup>th</sup> and sacrum



**Figure 3.** MRI of lumbo-sacral showed spondylositehsis L5-S1, S1-S2, S2-S3 and mass in the anterior posterior and lateral of paralumbal 5 and parasacral



**Figure 4.** Sequestrectomy with drainse abscess and lumbo-sacral-iliac-fusion



**Figure 5.** Pathology anatomy study of sacral tissue biopsy showed Langerhans cell

### 3 Discussion.

The patient underwent surgical of sequestrectomy with drainage abscess and lumbo-sacral-iliac fusion (Figure 4). After surgery, the pain decreased than before. The culture of sacral tissue showed *Mycobacterium tuberculosis*. The pathology study of sacral tissue biopsy from surgical revealed a chronic inflammatory proces of tuberculosis. It has Langerhans cells (figure 5). The patient was treated with combination of anti-TB agents involving four drugs: Isoniazid, Rifampicine, Pyrasinamide, and Ethambuthol for 2 months followed by double drugs (Isoniazid and Rifampicine) for 10 months.

Tuberculosis still remains one of the most pressing health problems in the developing world, and tuberculosis of the spine occurs by hematogenous spread of infection from a pulmonary or extrapulmonary site, pulmonary infection is detected in around 50% of cases of spinal tuberculosis. More rarely, the condition may be encountered in the absence of a pulmonary infection<sup>5</sup>.

Spine tuberculous remains a frequent disease in developing countries. The lumbar spine is the most common site (95%), whereas the cervical spine is affected in 5% cases only. Tuberculosis of sacral spine is rarely reported. Infection of the lumbosacral junction by tuberculosis occurs in

only 1 to 2% of all cases of spinal tuberculosis, moreover, isolated sacrococcygeal or coccygeal tuberculosis is much rarer<sup>5</sup>. The sacrum is an uncommon site for tuberculosis involving the spine. In a review of 107 patients of tuberculous spondylitis by Lifeso et al.<sup>6</sup>, no patient had lumbosacral and sacrococcygeal involvement<sup>6</sup>. Dayras et al. reported first case of isolated sacral tuberculosis with lower back pain<sup>7</sup>.

The deficit and radicular symptoms are less common<sup>1</sup>. Clinical manifestations of sacral tuberculosis depend primarily on the age of the patient. Presenting symptoms and signs of sacroiliac tuberculosis are often insidious and localized to that joint<sup>8</sup>. Pain is the most common initial symptom<sup>9</sup>. The usual presentation is a chronic low back pain, a fistula or abscess with or without neurologic deficit<sup>10</sup>.

The diagnosis can be easily delayed because of non-specificity of clinical signs<sup>3</sup>. Magnetic Resonance Imaging (MRI) is the most sensitive diagnostic radiologic imaging. MRI reveals diffuse marrow edema that is hypointens on T1- dan hyperintens on T2-weighted images. Surgical biopsy has the significant role in diagnosis tuberculosis by pathological study<sup>2</sup>. Medical treatment involves a combination of four anti-TB agents for 2 months, followed by double drugs for 10 months<sup>3</sup>. After confirmation of diagnosis, drugs were given for 12 months with serial x rays and bloods test. The prognosis of sacral tuberculosis is good, if a rapid and correct diagnosis is made and adequate treatment is provided<sup>11</sup>.

#### **4 Conclusion.**

Tuberculosis of sacrum is rare. The symptoms are not specific. MRI is the most sensitive diagnostic radiologic imaging. Surgical biopsy establishes the diagnosis after culture of *Mycobacterium tuberculosis*. Medical treatment is anti-TB agents.

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