



<https://doi.org/10.1016/j.jemermed.2017.12.007>

## Clinical Communications: Adult

### POTT'S DISEASE IN A PATIENT WITH SUBTLE RED FLAGS

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□ **Abstract—Background:** Tuberculosis (TB) is now rare in developed countries; however, it is an important diagnosis for the Emergency Physician to be able to make. Classically thought of as a respiratory disease, TB can present in other ways, making it more challenging to recognize. **Case Report:** We report the case of a 41-year-old woman who presented to the Emergency Department with a 4-week history of back pain. A diagnosis of T12 osteomyelitis and right psoas muscle abscess was made after magnetic resonance imaging. The concurrent finding raised concern for TB as psoas muscle abscess is usually found along with spinal TB. A computed tomography-guided fine-needle aspiration confirmed the diagnosis. This patient's social history was negative for many of the classic predisposing factors associated with TB: immunosuppression, personal travel, crowded living conditions. Repeated investigation into the patient's history revealed a visit several months prior from a family member from Vietnam who had been treated for TB. **Why Should an Emergency Physician Be Aware of This?:** It is important for Emergency Physicians to be aware of the relatively high incidence of TB as a cause for concurrent psoas abscess and vertebral osteomyelitis. © 2017 Elsevier Inc. All rights reserved.

□ **Keywords—**tuberculosis; Pott's disease; vertebral osteomyelitis; infectious disease

#### INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis*. Although it is rare in North America (3.2 cases/100,000 in the United States, 5.1 cases/

100,000 in Canada in 2015), with similarly low rates in Western Europe, the disease still carries significant morbidity and mortality worldwide. Sixty percent of new cases in 2015 occurred in six countries: India, Indonesia, China, Nigeria, Pakistan, and South Africa. For comparison, the incidence in India during 2015 was 217 cases per 100,000 persons. In 2015, there were 10.4 million new TB cases and 1.4 million TB-related deaths (1).

Pott's disease and tuberculous psoas abscess are two well-documented forms of extrapulmonary TB. Both conditions can be challenging to diagnose due to nonspecific early symptoms that mirror other pathologic conditions (2–6). Recognition of these atypical presentations can be challenging for clinicians and consequently, may result in delayed diagnosis. We present the case of a previously healthy 41-year-old Vietnamese woman with a 4-week history of worsening back pain diagnosed with Pott's disease and concurrent tuberculous psoas abscess.

#### CASE REPORT

The patient was a 41-year-old Vietnamese woman who arrived as a transfer from a referring emergency department (ED). She reported 4 weeks of throbbing, nonradiating low back pain that had worsened in the past 2 weeks. She denied complaints other than the back pain. A notable feature of the history of present illness was that her back pain worsened when lying down. The patient's history lacked alarming signs/symptoms for back pain

such as intravenous drug use, history of cancer, fever, neurologic deficit, bowel incontinence, urinary retention, or immunosuppression. The patient had no known chronic medical diseases and denied recent cough or other respiratory complaints. She was Vietnamese, but had no history of recent travel outside of the United States. Her last trip to Vietnam had been in 2008 (6 years prior), and she had lived in the United States for 14 years. She was born in Vietnam. She worked in a nail salon. Her physical examination, including a detailed neurologic and musculoskeletal examination, was normal. Her vital signs upon presentation to the ED were heart rate 70 beats/min, blood pressure 114/66 mm Hg, respirations 18 breaths/min, oxygen saturation 100% on room air, and temperature °C (98.5°F).

Laboratory tests obtained during the initial visit included a complete metabolic panel, complete blood count with differential, erythrocyte sedimentation rate, and a urinalysis. The erythrocyte sedimentation rate was mildly elevated at 51. C-reactive protein was 2.7. The complete blood count was unremarkable; white blood cells 6.4 K/uL, segmented neutrophils 61.9%, lymphocytes 29.8%, platelets 280 K/uL, hemoglobin 11.0 g/dL, and hematocrit 34.1%. There were no abnormalities in the comprehensive metabolic panel or the C-reactive protein. Urinalysis did not demonstrate any evidence of infection or blood.

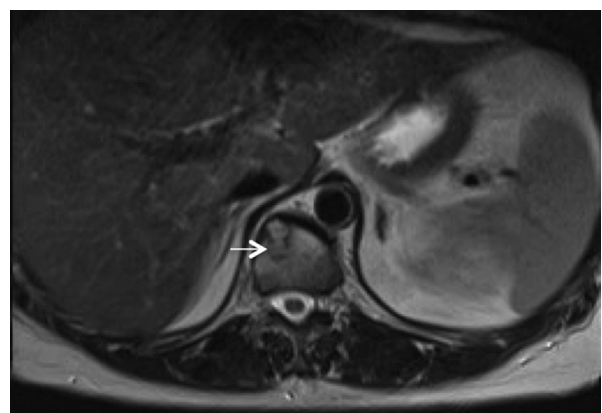
Due to the concerning symptom of exacerbated pain with supine and symptoms lasting for 4 weeks, a magnetic resonance imaging (MRI) scan with and without contrast of the lumbar spine was obtained. The MRI scan revealed T12 osteomyelitis, pathologic loss of height at the inferior aspect of the vertebral body, sparing of the disc space, and subligamentous propagation of phlegmon (Figure 1). The MRI scan also showed abscess invading the vertebral body (Figure 2) and a large right psoas muscle abscess (Figure 3). Subligamentous spread skipping the disc space is classic for tuberculous osteomyelitis.

Further investigation into the patient's history revealed that although the patient herself had not traveled recently, she had several relatives currently in Vietnam who she thought may have been diagnosed with TB over the years, but exact history and timing of possible exposure was unclear. She had a brother who was treated for pulmonary TB years prior, when the patient was in her teens, with directly observed therapy, and other household members were also treated for latent TB/TB exposure. She reports being in the home during this time. She reports having a negative PPD test after immigration to the United States. She denied ever receiving the BCG vaccine. An uncle had traveled to visit her in the United States several months prior to her presentation, but was not noted to be ill. This new information prompted expansion of the differential to include Pott's disease.



**Figure 1. Sagittal view of thoracolumbar junction vertebral abscess with epidural spread (arrows). MRI, T2 weighted.**

She was admitted for further testing, and samples obtained by computed tomography (CT)-guided fine-needle aspiration tested positive for *Mycobacterium tuberculosis*. A QuantiFERON TB-Gold (Qiagen, Hilden, Germany) antigen test was positive, as was the acid-fast



**Figure 2. Abscess in the vertebral body. Coronal MRI, T2 weighted.**

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