ARCHIVES OF HELLENIC MEDICINE: ISSN 11-05-3992

CONTINUING MEDICAL EDUCATION
ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

ARCHIVES OF HELLENIC MEDICINE 2021, 38(6):855–856
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2021, 38(6):855–856

# Medical Imaging Quiz – Case 68

**E. Botsa,**
**I. Thanou,**
**C. Georgokosta,**
**L. Thanos**

*Department of Interventional Radiology and Diagnostic Imaging, "Sotiria" General Hospital of Chest Diseases, Athens, Greece*

A 50-year-old male patient was admitted to the hospital due to back pain and fever. He was diagnosed with spondylodiscitis and started treatment with intravenous antimicrobial agents. Two weeks later he suffered from severe pain. Spine computed tomography (CT) was performed and revealed worsening of imaging findings with paraspinal abscess and persistent spondylodiscitis of lumbar spondyl 2–3 (fig. 1). Due to pure response to antibiotics further investigation was performed with Mantoux and QuantiFERON tests. Purulent fluid was aspirated after CT guided percutaneous drainage of paraspinal abscess. Acid fast bacilli were seen on drain fluid microscopy, and GeneXpert testing was positive for *Mycobacterium tuberculosis*.

## Comments

*Tuberculous spondylitis, also known as Pott disease, refers to vertebral body osteomyelitis and intervertebral discitis from tuberculosis (TB). The spine is the most frequent location of musculoskeletal tuberculosis. Tuberculous spondylitis is one of the most common infections of spine in countries where TB is prevalent. Discitis and or osteomyelitis comprise approximately 50% of all musculoskeletal TB, and usually affects the lower thoracic and upper lumbar levels of the spine 2. Patients usually present with back pain, lower limb weakness/paraplegia, and kyphotic deformity. Constitutional symptoms (fever and weight loss) are also common but not as pronounced as with bacterial discitis/osteomyelitis. The spine is involved due to hematogenous spread that can occur via both arteries and veins.*

*In adults and particularly older individuals the disc is conspicuously spared due to its sparse vascularity. Spread via the venous plexus of Batson typically results in infection arising centrally within the vertebral body 2,8. This is more common in older individuals. Posterior involvement, also known as an appendiceal pattern is also due to venous hematogenous spread via the posterior venous plexus.*

*In late-stage spinal TB, large paraspinal abscesses can develop*

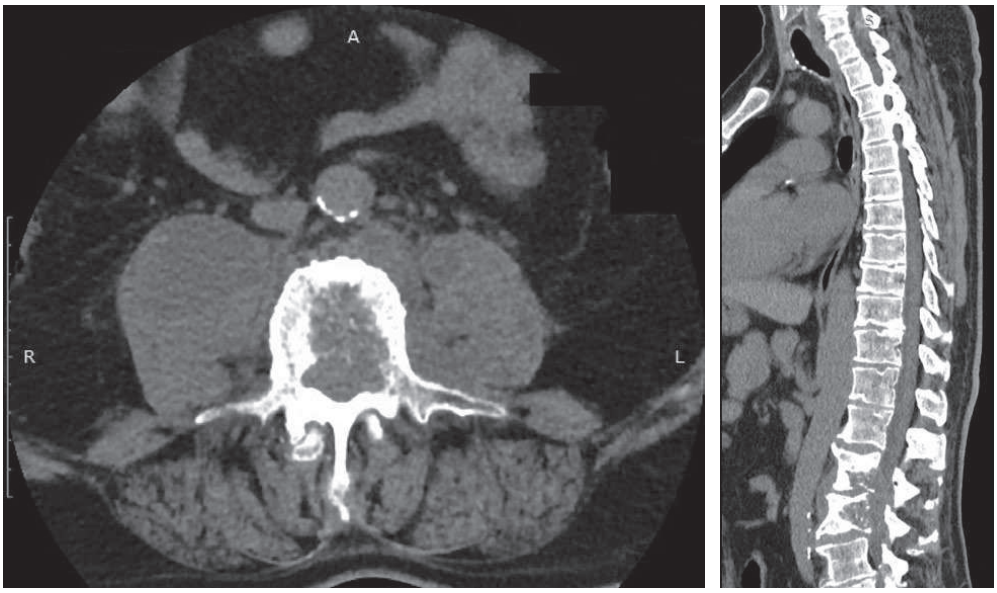


**Figure 1.** Lumbar spine computed tomography (CT) reveals spondylodiscitis at L2–3 and right paravertebral abscess.

*without severe pain or frank pus or prominent inflammatory signs and symptoms; thus "cold abscess". Tuberculous spondylitis can be difficult to detect in early stages because of relative preservation of the disc space. A reduction in vertebral height is often seen with the irregularity of the anterosuperior endplate being relatively early and subtle sign. Due to the subligamentous extension, there may be some irregularity of the anterior vertebral margin. This is a classical appearance with TB spondylitis. Later, paraspinal collections can develop which can be remarkably large. Ivory vertebrae can result in re-ossification. Other associated features may include gibbus deformity, vertebra plana. Cross-sectional imaging is required to assess better the extent of involvement and particularly for the presence of an epidural component and cord compression. Magnetic resonance imaging (MRI) is the modality of choice for this, with CT with contrast being a distant second.*

*TB is the most common cause of vertebral body infection in many parts of the developing world. TB can also affect the meninges of the spine, causing an intense pachymeningitis that enhances dramatically. Differential diagnosis includes other infections (such as pyogenic infection, brucellosis, fungal infection), sarcoidosis or metastasis.*

## References


1. WORLD HEALTH ORGANIZATION. Global tuberculosis report 2017. WHO, Geneva, 2017. Available at: http://www.who.int/tb/publications/global report/ gtbr2017_main_text.pdf
2. De VUYST D, VANHOENACKER F, GIELEN J, BERNAERTS A, DE SCHEPPER AM. Imaging features of musculoskeletal tuberculosis. *Eur Radiol* 2003, 13:1809–1819
3. GARG RK, SOMVANSHI DS. Spinal tuberculosis: A review. *J Spinal Cord Med* 2011, 34:440–454
4. ALMEIDA A. Tuberculosis of the spine and spinal cord. *Eur J Radiol* 2005, 55:193–201
5. BRANT WE, HELMS CA. *Fundamentals of diagnostic radiology*. Lippincott, Williams & Wilkins, Philadelphia, 2007
6. BURRILL J, WILLIAMS CJ, BAIN G, CONDER G, HINE AL, MISRA RR. Tuberculosis: A radiologic review. *Radiographics* 2007, 27:1255–1273



*Corresponding author:*

L. Thanos, Department of Computed Tomography, "Sotiria" General Hospital of Chest Diseases, 152 Mesogeion Ave., 115 27 Athens, Greece
e-mail: loutharad@yahoo.com