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Case report
Microbiology and cytopathology

Negative to date: the diagnostic gap in suspected multisite tuberculosis presenting with cauda equina red flags

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Background and aim

- About 15–20% of tuberculosis (TB) affects sites outside the lungs, and under 10% several sites at once.
- **Aim:** to show why first-line samples can miss TB, and what that means for sampling and reporting.

Case

- Woman, 38, with 8 months of back pain, developed overnight numbness in both legs and urinary incontinence.
- No fever or weight loss. Born in a country with high TB rates.

Imaging

- **MRI:** infection at L4/5 with the disc relatively spared, a collection on the nerve roots and a right psoas abscess. No cauda equina compression.
- **CT:** enlarged chest lymph nodes.
- **Echocardiogram:** no heart-valve infection.

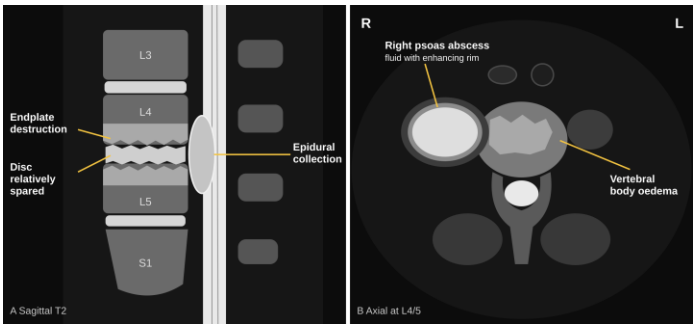


Figure 1. Schematic of the MRI findings (not patient imaging).

Diagnostic pathway

DAY 0	**Urgent MRI** Cauda equina syndrome excluded
DAY 2–3	**CT and whole-spine MRI** Pattern typical of spinal TB
EARLY	**TB drugs and steroids** Started before confirmation
DAY 10	**Lymph node sampling** Endoscopic ultrasound: non-diagnostic
NEXT	**Psoas abscess drainage** Second sampling route, planned

Laboratory results

Sample	Test	Result
Lymph node aspirate	TB DNA test	Not detected
	Cytology	Inflammatory cells; no granulomas
	Acid-fast smear	Negative
	Culture	**Negative to date**
Blood	C-reactive protein	24 mg/L
	Vitamin D	19 nmol/L (low)
Psoas pus	All tests	Planned

Key message: a negative result describes the sample, not the patient.

Why samples can miss TB

- **Few bacteria:** rapid DNA tests detect about 69–83% of TB outside the lungs.
- **Necrotic nodes** can yield debris rather than tissue.
- **Timing:** sampling followed the start of treatment.
- **Slow culture:** results take weeks.

Outcome

- At three weeks: normal strength, sensation and bladder control; back pain improving.

Conclusion and learning points

- Read “negative to date” as an interim result, not an exclusion.
- Send scarce samples for both microbiology and cytology or histology.
- Plan a second sampling route early.
- Pursue culture: only it tests for drug resistance.

References: World Health Organization. Consolidated guidelines on tuberculosis, Module 4: treatment · Aryal A, et al. Asian Spine J 2021;16:749–63 · Rapid molecular diagnosis of extrapulmonary tuberculosis by Xpert MTB/RIF Ultra, PMC9130774 · Review of disseminated tuberculosis diagnostic workup, PMC6515764