

A rare case of spondylodiscitis caused by *Helicobacter cinaedi*

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Aim

- In 2024 an 85-year-old man presented at the orthopedics department with spinal canal stenosis in the lumbar region for which decompression surgery was performed.
- In 2025 the patient returned due to sudden severe lumbar pain with a positive MRI for **spondylodiscitis**.
- Surgery was performed involving the placement of a **lumbar pedicle screw fixation** with decompression (laminotomy) and collection of two deep tissue samples for microbiology.

Methods

- Tissue homogenization was followed by subculturing on chocolate II agar and incubation in aerobic and anaerobic blood culture bottles which were incubated for one and two weeks, respectively.
- 16S-ITS-23S ribosomal DNA (rDNA) was performed on the homogenized tissue.
- Visualisation of the PCR amplified DNA fragment of the correct length (4500 base pairs) was performed by using a gel electrophoresis and followed by sequencing using nanopore sequencing technology.
- Data analysis for identification was performed using a bioinformatics platform and an in-house developed database.

Results

- The patient was initially treated with flucloxacillin and vancomycin due to a positive blood culture for *Staphylococcus epidermidis* (1/2 bottles). Rifampicin was associated once the wound was dry.
- Aerobic and anaerobic cultures from the deep samples remained negative.
- By performing 16S-ITS-23S rDNA sequencing *Helicobacter cinaedi* was identified in both samples.
- *H. cinaedi* is a **Gram-negative, spiral-shaped bacterium** that has a strong ability to enter the bloodstream through translocation from the intestine and, in rare cases, cause secondary infections such as arthritis or cellulitis.
- This microorganism is resistant to quinolones and is generally susceptible to **carbapenems, tetracyclines and aminoglycosides**.
- Treatment with minocycline 2x100 mg orally was initiated.
- A few weeks later, the treatment was switched to doxycycline 2x100 mg due to gastrointestinal side effects associated with minocycline.
- A treatment duration of three months was chosen since screw fixation was performed in an infected region and foreign material remained *in situ*.
- The patient made a positive recovery and currently shows no signs of pain or infection.

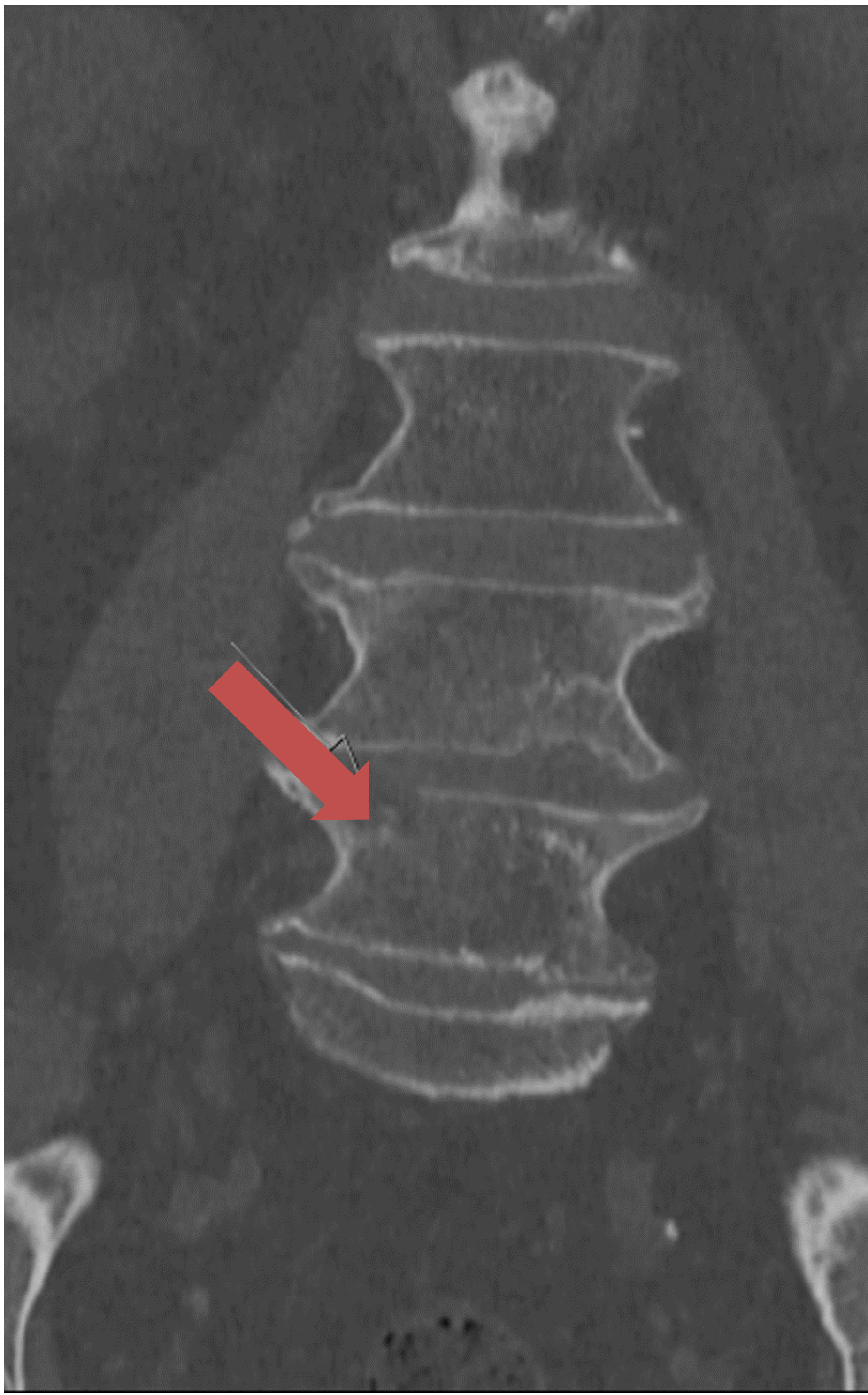
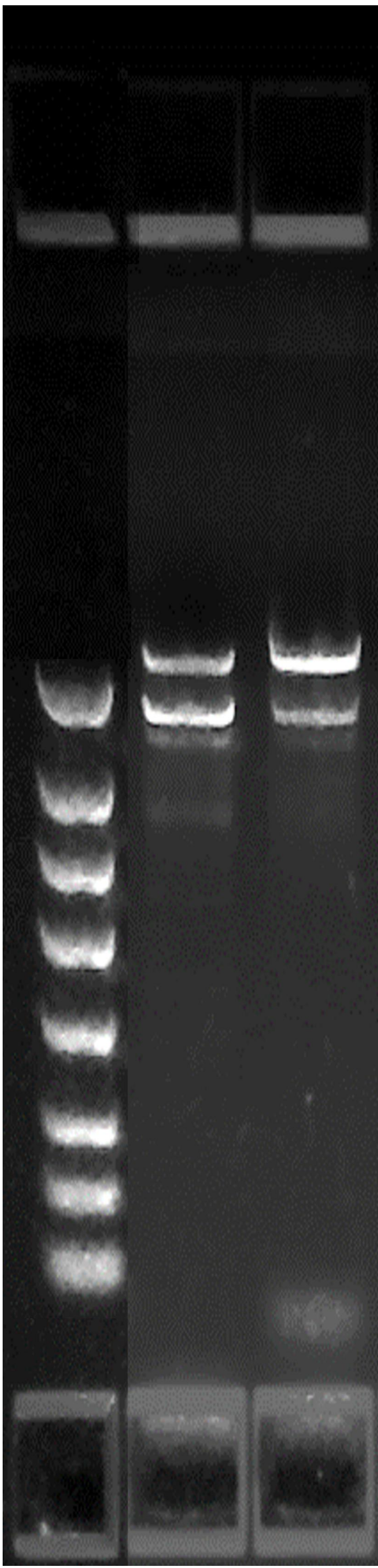


Figure 1: left: result gel electrophoresis with upper band showing bacterial DNA; right: MRI scan showing a spondylodiscitis

Conclusions

- Performing **16S-ITS-23S rDNA sequencing** on normally sterile samples with negative microbiological cultures provides **significant added value** in identifying the pathogen.
- This case also highlights the importance of recognizing *H. cinaedi* as a **possible cause of spondylodiscitis**.

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