First Confirmed Case of Spondylodiscitis and Epidural Abscess Due to *Parvimonas micra*: Review of *Parvimonas micra* Infection

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### Introduction

Gram-positive anaerobic cocci (GPAC) are commonly associated with various human infections. Routine culture and identification of these slowly growing anaerobes to the species level has been limited in diagnostic laboratories. Extensive taxonomic changes have occurred recently in this group of bacteria based on 16S ribosomal RNA (16S rRNA). Severe infections caused by GPAC have been reported, including rare cases of spondylodiscitis or epidural abscess. To our knowledge, this is the first confirmed case of *Parvimonas micra* causing spondylodiscitis and epidural abscess in the world. We also reviewed the literature relevant to *P. micra*.

### Case Reports and Literature Review

#### Case

A 55-year-old woman presented to our hospital with gradually progressive lower back pain for 2 months. She had no history of fever, invasive dental procedures, or immunosuppressive therapy. A radiograph of the lumbar spine revealed no focal changes. However, MRI showed T1 low intensity / T2 hyperintensity of the L2 and L3 vertebra, as well as within the L2-L3 disc space. Laminoplasty of the affected lumbar vertebrae and debridement of the epidural abscess were performed. Sequencing of 16S rRNA and VITEK® MS revealed *P. micra* in surgical and needle biopsy specimens. After surgery, she was treated with high-dose intravenous sulbactam/ampicillin and made an almost complete recovery.

#### Literature review

We identified all reported cases of *Parvimonas micra* infection in the English literature using the search terms “*Parvimonas micra*”, “*Parvimonas micra* AND infection” in PubMed database.

### Results

- **MRI (FAT-SAT)**
  - MRI detected low intensity of the L2 and L3 vertebral bodies and L2-L3 disc space on T1-weighted images with hyperintensity on T2-weighted images

- **CT (sagittal)**
  - CT revealed bone destruction at the posterior borders of the L2 and L3 vertebral bodies on sagittal and traverse images

- She had reproducible pain with the femoral stretch test.
- Manual muscle testing was 4 for the left quadriceps femoris muscle.
- Relevant laboratory investigations
  - WBC 6.6 cells/mm³, ESR 30 mm/h (67 mm/2 h), CRP 0.8 mg/dl, Multiple negative blood cultures
  - A radiograph of the lumbar spine revealed no focal changes.

The literature search identified 21 articles.

- 10 articles were oral cavity infection
  - odontogenic infection, dental root canal infection, apical abscess, and periodontitis
- Other articles were reports on
  - novel species, oral or vaginal flora, and surgical site infection.
- A few reports of rhinosinusitis and pericarditis as severe infection.
- But no report of spondylodiscitis with epidural abscess.

### References


### Conclusions

This is the first confirmed case of spondylodiscitis and epidural abscess due to *P. micra*. Our findings indicate that *P. micra* is a potential cause of these serious infections, so we should monitor its prevalence. This case also emphasizes the importance of performing accurate epidemiological investigation of GPAC, including *P. micra*. 