



Case Report

# Black disc morphology during routine lumbar discectomy with subsequent diagnosis of enterococcal discitis

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## ABSTRACT

**Background:** *Enterococcus faecalis* is reported infrequently as an infectious cause of discitis. In the literature, the diagnosis is commonly made based on the clinical picture coupled with blood cultures, imaging, and tissue cultures.

**Case Description:** A 62-year-old male with chronic lower back pain underwent lumbar decompression for a lumbar disc. At surgery, the patient had significant black discoloration of the disc material. Later, the cultures demonstrated *E. faecalis* infectious discitis.

**Conclusion:** Here is an example of enterococcal lumbar discitis found during a routine lumbar discectomy. As operative cultures revealed *E. faecalis*, the patient required not one but two operations (i.e., second for seroma/hematoma due to infection) following which antibiotic therapy eradicated the infection.

**Keywords:** Black disc, Discectomy, Enterococcal, Infectious discitis

## INTRODUCTION

Infectious discitis typically occurs through direct inoculation (i.e., contiguous spread of adjacent infection) or is attributed to hematogenous spread of infection to the disc space.<sup>[2,4]</sup> Common organisms include; Staphylococcal, and Streptococcal species.<sup>[1,3]</sup> Alternatively, *Enterococcus faecalis* rarely causes lumbar discitis. Rather, it is a Gram-positive bacterium that is typically found in the; colon, oral cavity, vagina, female perineum, and the anterior urethra of both men and women.<sup>[2,3]</sup> Here, a 62-year-old male presented with Enterococcal discitis suspected when the disc material appeared black intraoperatively; it was confirmed on the final tissue cultures, and after two operations responded to antibiotic therapy.

## CASE PRESENTATION

A 62-year-old male presented with back pain and bilateral lower extremity radiculopathy (i.e., left greater than right) without other focal neurological deficits. He had a history of type II diabetes mellitus, obesity, hyperlipidemia, and multiple colon polyps requiring repeated colonoscopies; his last colonoscopy which included a polypectomy had been performed 2 months before the onset of symptoms/complaints. The lumbar magnetic resonance documented a central-left-sided disc protrusion at the L4–L5 level accompanied by severe stenosis at L4–L5, and moderate stenosis at L3–L4 [Figures 1 and 2]. The CT obtained 6 weeks preoperatively confirmed similar findings. Notably, all preoperative laboratory studies were normal.

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## Surgery

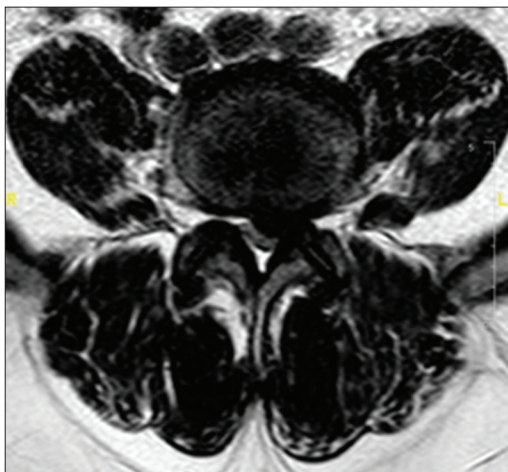
The patient initially underwent a laminectomy from L3 to L5 with a left L4–L5 partial discectomy. At surgery, the removed disc fragments appeared black; there were no accompanying reactive tissue changes or purulence [Figure 3]. Due to the disc fragments' discoloration (i.e., black), a Gram stain and cultures of disc were obtained. Without waiting for the Gram stain/culture results, the patient was routinely discharged the next day.

## Follow-up

Three days later, the culture grew *E. faecalis*, and the patient was immediately readmitted. On admission, the complete blood count, complete metabolic panel, and blood cultures were



**Figure 1:** Sagittal T2 magnetic resonance imaging of lumbar spine indicating lumbar stenosis and left-sided L4–L5 disc herniation.



**Figure 2:** Axial T2 magnetic resonance imaging of lumbar spine indicating lumbar stenosis and left-sided L4–L5 disc herniation.

negative, but the C-reactive protein (CRP) and erythrocyte sedimentation rates (ESR) were elevated. Although, the elevated CRP and ESR rates were largely attributed to the recent surgery, he was, nevertheless, empirically placed on vancomycin. Based on subsequent microbiology susceptibility data, this antibiotic was changed to intravenous (IV) ampicillin.

## Reoperation

Five days following the initial surgery, the patient underwent a secondary surgery consisting of a wound re-exploration for hematoma. Cultures from the 2<sup>nd</sup> operation grew a *Bifidobacterium* spp. At discharge, therefore, the patient was placed on 3 weeks of IV ampicillin followed by 6 months of oral amoxicillin, a regimen that could effectively treat both *E. faecalis* and *Bifidobacterium* discitis.

## Long-term follow-up

Ten weeks postoperatively, the patient had mild residual low back pain, but the infection had fully resolved. Further, at 4 postoperative months, CRP and ESR values had normalized.

## DISCUSSION

Lumbar enterococcal discitis is rare. In the literature, it occasionally occurs in; immunocompromised geriatric patients, those with uncontrolled diabetes, patients with recent genitourinary/gastrointestinal surgery, and/or those on hemodialysis.<sup>[1-4]</sup> Risk factors for our patient's enterococcal discitis included; poorly controlled diabetes, and a recent gastrointestinal procedure (i.e., recent colonoscopy). This case shows how successful treatment of enterococcal discitis, prompted by black intraoperative disc fragments leading to Gram stains and cultures, should lead to appropriate antibiotic therapy with full resolution of the infection.



**Figure 3:** Intraoperative photo of discolored, extruded L4–5 intervertebral disc.

## CONCLUSION

Here is an example of enterococcal lumbar discitis found during a routine lumbar discectomy. As operative cultures revealed *E. faecalis*, the patient required not one but two operations (i.e., second for seroma/hematoma due to infection) following which antibiotic therapy eradicated the infection.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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