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Radhika Sheth

Priya Menon

Vivek Kak

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A Case of *Gemella bergeri* Endocarditis and Vertebral Osteomyelitis From Dental Caries

To the Editor,

Gemella species are catalase-negative, facultatively anaerobic, gram-positive cocci. They were initially mistakenly classified under *Neisseria* species. The genus currently includes *G. haemolysans*, *G. morbillorum*, *G. bergeri*, *G. sanguinis*, *G. asaccharolytica*, *G. taiwanensis*, *G. parahaemolysans*, *G. palaticanis*, and *G. cuniculi*. They are commensals of the oral and upper respiratory tract mucosa. *G. bergeri* was first isolated from the blood cultures of 6 patients, of which 3 were diagnosed with endocarditis. There are a handful of cases of infective endocarditis (IE) by *G. bergeri* that have been published in the current literature. We report a case of *G. bergeri* bacteremia causing IE and seeding to the vertebrae, and we believe it is the first reported case in the literature.

A 63-year-old man with a history of uncontrolled type 2 diabetes mellitus and a chronic diabetic foot ulcer presented with a 3-week history of worsening lower back pain and lower extremity weakness. The pain radiated to his left leg and was aggravated by movement. He also reported chills, night sweats, and fatigue. Initial vitals were significant for a temperature of 101°F and pulse of 110 beats/minute. On physical examination, he had 3 carious and 2 broken teeth, splinter hemorrhages in his fingernails, a diastolic blowing murmur over the aortic area, and point tenderness over the lumbar spine. Neurological examination, including muscle strength and rectal tone, yielded normal results.

Laboratory investigations showed leukocytosis with neutrophilic predominance. Magnetic resonance imaging of the lumbar spine showed discitis and osteomyelitis of the L4–L5 level, an epidural abscess behind L4–L5 vertebral bodies, and a left lateral paraspinal abscess (Fig. 1). Blood cultures were drawn, and the patient was started on vancomycin and ceftriaxone for empiric coverage. The paraspinal abscess was aspirated and cultured. A transesophageal echocardiogram (Fig. 1) demonstrated mobile echodensities on the mitral and aortic valves, along with a flail aortic leaflet. The blood and abscess fluid cultures grew gram-positive cocci in both aerobic and anaerobic bottles, later identified as *G. bergeri* that was susceptible to clindamycin, ceftriaxone, penicillin, and meropenem. The patient was discharged on ceftriaxone for a total of 6 weeks with plans for surgery.

Before the course was completed, the patient returned to the emergency department with worsening shortness of breath due to an acute exacerbation of heart failure and required a transfer to a tertiary care facility for aortic valve replacement surgery. Before surgery, he underwent tooth extraction because of concerns that the *Gemella* infection may be odontogenic. The patient had a mechanical aortic valve replacement and a mitral valve patch repair. He was switched to oral linezolid for the rest of his antibiotic course.

Gemella species are nonsporulating cocci that are arranged in pairs, tetrads, or clusters and can sometimes appear rod shaped. Patients with poor dental hygiene, underlying structural heart disease like tetralogy of Fallot, rheumatic heart disease, and bicuspid heart valves, and immunocompromised conditions have a predisposition to *Gemella* IE. *Gemella* species have been reported to cause central nervous system infections, mediastinal abscesses, ocular infections, joint infections, and even septic shock.

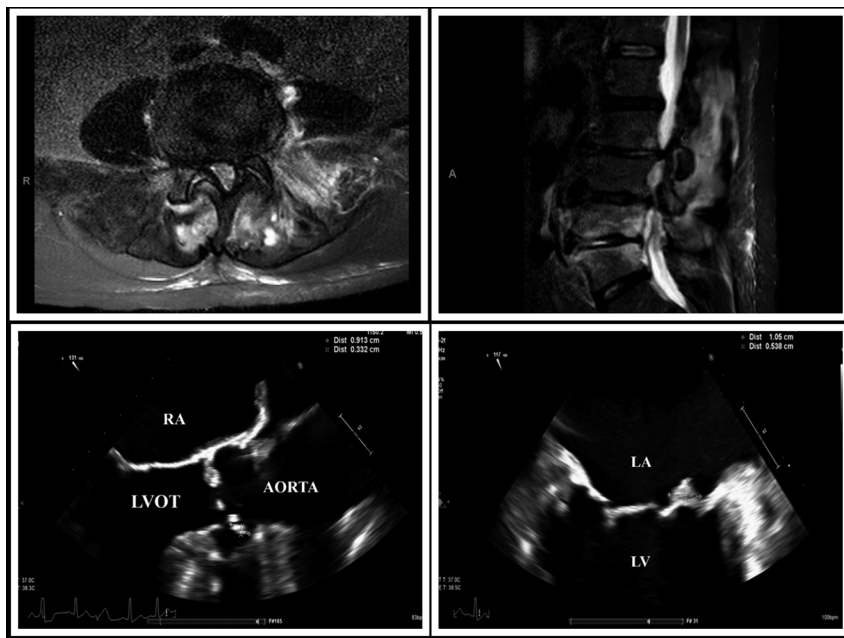


FIGURE 1. (Clockwise) Transverse and sagittal views of magnetic resonance imaging of the lumbar spine demonstrating discitis osteomyelitis at the left lateral aspect of the L4–L5 level with epidural abscess posterior to the vertebral body. Transesophageal echocardiogram images demonstrating echodensities on the mitral valve and aortic valve.

Gemella has in vitro susceptibility to β -lactams, including penicillin and vancomycin.¹ Synergy between penicillin G and either gentamicin or streptomycin, and between vancomycin and the aforementioned aminoglycosides is also observed.² Only about 4 cases of discitis from *Gemella* have been reported, and they have all involved immunocompetent patients with *G. hemolysans* as the causative organism. Martha et al³ reported a case of a 72-year-old woman with *G. hemolysans* discitis that was treated with amoxicillin and clindamycin. Gatibelza et al⁴ reported a case of ruptured infected aortic aneurysm and discitis from *G. hemolysans*, which was treated with in situ graft repair, spinal stabilization, and long-term amoxicillin and rifampin. Rajagopal et al⁵ reported 2 cases of *G. hemolysans* discitis—both treated with long-term antibiotics with good outcomes. Ours was the first reported case of discitis and osteomyelitis from *G. bergeri*.

Our patient had no underlying structural heart disease but had poor dentition and poorly controlled diabetes. He was diagnosed with native aortic and mitral valve endocarditis, and further imaging revealed vertebral osteomyelitis and epidural and paraspinal abscesses. He underwent computed tomography–guided aspiration of the abscess and did eventually require surgical valve repair and replacement after he developed heart failure. He also needed dental extraction for appropriate source control. He responded well to ceftriaxone initially and was later switched to oral linezolid for a total of 6 weeks of antibiotic therapy. His inflammatory markers declined, and he continues to do well.

Radhika Sheth, MD
Priya Menon, MD
Vivek Kak, MD

Department of Internal Medicine
 Henry Ford Allegiance Health
 Jackson, MI
 sheth.radhika22@gmail.com

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