

A Case of *Aerococcus Urinae* Vertebral Osteomyelitis

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ABSTRACT

Aerococcus urinae is an aerobic, alpha hemolytic gram positive coccus bacterium that grows in pairs or clusters. We report the first case of vertebral osteomyelitis due to *A. urinae*. This has not been previously reported in the literature.

Key words: *Aerococcus urinae*, Osteomyelitis, Alpha hemolytic

CASE REPORT

A 37-year-old obese Hispanic male came to the emergency room (ER) with a 4 weeks history of nonradiating, dull lower back pain. No other symptoms were noted. He denied any history of recent trauma. He had been in a motor vehicle accident many years prior, which had led to multiple episodes of urinary tract infections (UTIs) due to urethral strictures; the most recent UTI 1 month prior was due to *Enterococcus fecalis*. Urethral dilatation by cystoscopy and a course of amoxicillin-clavulanic acid was provided for treatment. Physical examination revealed elevated erythrocyte sedimentation rate (ESR) of 92 and C-reactive protein (CRP) 35.9. Computed tomography (CT) lumbar spine revealed new destructive changes within the endplates of paralleling L2-L3 levels with apparent surrounding inflammatory changes highly suspicious for osteomyelitis/discitis. The patient was admitted and started empirically on vancomycin and piperacillin-tazobactam by the primary admitting team. Infectious disease consultation recommended bone culture and pathology, which was subsequently obtained by interventional radiology early in hospital course. Bone specimen culture revealed a catalase negative gram positive cocci growing in pairs and clusters. Because of its unusual growth pattern, further biochemical analysis was done and showed the organism to be positive

for hippurate hydrolysis, indentifying it as belonging to the *Aerococcus* genus. Antibiotic susceptibility revealed the organism to be penicillin-sensitive but resistant to trimethoprim-sulfamethoxazole, identifying the species as *A. urinae*. The patient was switched to cefazolin and was treated for 6 weeks. The patient showed clinical improvement in terms of his back pain with proper analgesia.

DISCUSSION

A. urinae is a commensal organism of the urinary tract. Due to our patient's history of frequent genitourinary (GU) infections and manipulations, it can be postulated that he possibly developed transient *A. urinae* bacteremia, allowing the bacteria to lodge in his lumbar vertebrae, ultimately causing osteomyelitis and discitis. *A. urinae* is a rare human pathogen, and this is the first case report of it causing vertebral osteomyelitis. This uncommon human pathogen is commonly mistaken for *Staphylococcus* or *Streptococcus*, owing to the difficulties in identifying this organism.^[1] Originally classified as *Aerococcus*-like organism, *A. urinae* was assigned as a distinct species in this genus in 1992.^[2] Rare case reports have described this organism as a cause of urinary tract infections, sepsis, bacteremia, and endocarditis.^[3,4] *A. urinae* strains have been found to be resistant to sulfonamides and other antimicrobials used for treating urinary tract infections, including cotrimoxazole, trimethoprim, nalidixic acid, and polymyxins.^[5] Clinicians should remember *A. urinae* as a potential pathogenic organism in patients with history of

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10.4103/0974-777X.157246

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GU infections and manipulations. Therefore, again it has been noted to be susceptible to penicillin and resistant to trimethoprim-sulfamethoxazole.

ACKNOWLEDGMENT

I would like to acknowledge my fellowship program director Dr. Slim, and all faculty for their assistance in the preparation of this manuscript.

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How to cite this article: Jerome M, Slim J, Sison R, Marton R. A case of aerococcus urinae vertebral osteomyelitis. J Global Infect Dis 2015;7:85-6.

Source of Support: Nil. **Conflict of Interest:** None declared.