

Commensal *Neisseria*: A Rare Cause of Osteomyelitis and Discitis

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Introduction: Non-meningococcal, non-gonococcal *Neisseria spp.* are commensal to the human oropharynx and are rarely pathogenic. Invasive infections are described primarily in case reports with endocarditis and meningitis. Discitis and vertebral osteomyelitis are exceedingly rare presentations of invasive infections of commensal *Neisseria spp.* We describe a case of vertebral osteomyelitis, discitis, and epidural abscess from *Neisseria sicca/mucosa spp.*

Case Presentation: A 68-year-old male with history of stroke, CAD, heart failure, essential hypertension, knee osteoarthritis, chronic lower back with recent radiofrequency ablation (RFA) and epidural steroid injections presented to the emergency department at request of his neurosurgeon due to intractable back pain for one week duration. He denied trauma, fevers, chills, urinary symptoms, weakness or changes in sensation. On admission he was afebrile and hemodynamically stable. His exam was notable for midline point tenderness to the lumbar spine (L-spine) and normal neurologic exam. Labs were significant for WBC $15.5 \times 10^3/\mu\text{L}$, ESR 49 mm/h, and CRP 16 mg/dL. MRI L-spine showed findings consistent with spondylodiscitis, osteomyelitis, paraspinal phlegmon and an extensive complex septated epidural abscess with mass effect at L3-L4. He was admitted and taken for right complete discectomy at L3-L4 with removal of infected disc and interbody fusion with titanium cage followed by L3-L4 posterior segmental instrumented fusion and laminectomy of L3-5 with decompression and evacuation of epidural abscess the following day. He was started on empiric vancomycin and ceftriaxone postoperatively. Surgical cultures from the epidural abscess, infected disc, and lumbar tissue all grew gram negative diplococci later identified as *Neisseria sicca/mucosa* by MALDI-TOF and were sent out for identification and susceptibility which remain pending. Blood cultures were negative. Ultimately, the vancomycin was discontinued, and the patient was discharged to home on intravenous ceftriaxone with plans for a 6-week course. His back pain improved with antibiotics post-operatively.

Discussion: *N. mucosa* and *N. sicca* are slow growing, fastidious gram-negative diplococci which are often misclassified with MALDI-TOF, thus necessitating advanced diagnostics to differentiate, as in this case. Of invasive infections with non-meningococcal, non-gonococcal *Neisseria spp.*, *N. mucosa* is the predominant pathogen described in literature. Risk factors for invasive *Neisseria* disease include recent procedures (particularly dental), presence of prosthetic devices, and immunocompromised status. Iatrogenic spinal infections due to commensal *Virdans group streptococci* are well described with non-use of face masks during invasive procedures. Only a single case of iatrogenic invasive infection has been described in a patient who underwent intrathecal contrast injection with an unmasked proceduralist and subsequently developed meningitis with cultures growing *N. Sicca*. The etiology of vertebral osteomyelitis and epidural abscess in this case was thought to be iatrogenic inoculation during recent RFA versus from transient bacteremia in the setting of epidural steroid use. This case highlights a rare etiology of osteomyelitis/discitis and stresses the importance of proper use of protective personal equipment when performing invasive procedures.

References:

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