A Hidden Infection: MSSA Bacteremia Complicated by Cervical Epidural Abscess Requiring Surgical Intervention

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Introduction

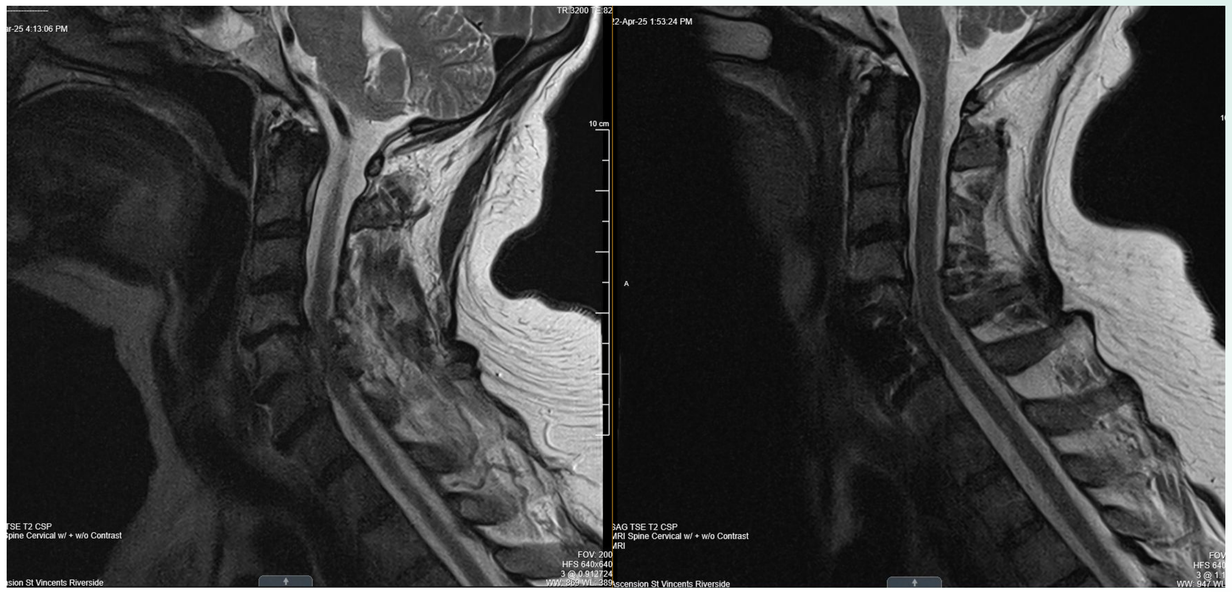
Staphylococcus aureus bacteremia is a serious infection with a wide spectrum of complications. Hematogenous seeding of the spine can result in spondylodiscitis and epidural abscess, both of which carry a risk of neurologic compromise. Diagnosis can be delayed due to nonspecific symptoms, and persistent bacteremia despite appropriate antibiotics should raise concern for deep-seated infection.

Case Presentation

A 63-year-old female with a history of HTN, HLD, CKD stage 3a, and obesity was transferred to our facility for higher-level care following a presentation to an outside hospital with worsening shortness of breath, hypoxia, and lab findings concerning for sepsis and acute kidney injury. Initial workup showed leukocytosis (WBC 26.1), hyponatremia (Na 123), and elevated creatinine (Cr 3.7). Chest imaging demonstrated multilobar pneumonia, and she was started on IV Rocephin and doxycycline. Upon arrival, the patient was placed on a sepsis protocol. Blood cultures subsequently grew methicillin-sensitive Staphylococcus aureus (MSSA), and Infectious Disease was consulted for management of bacteremia. She was transitioned to Ancef once cultures identified MSSA. Despite appropriate antibiotic therapy,her blood cultures remained persistently positive after 6 days, and she continued to have marked leukocytosis, even though her respiratory symptoms were improving.

During hospitalization, the patient developed progressive weakness and limited range of motion in her right upper extremity. Of note, patient had no throat pain or infection, and no neck pain, and denied IV drug use. Concerned about possible metastatic infection, ID recommended spinal imaging.

Case Presentation and Images



MRI of the cervical spine revealed C5–C6 spondylodiscitis with an anterior epidural abscess measuring 2.0 x 0.5 x 1.6 cm (Image 1) causing severe spinal canal stenosis and mass effect on the spinal cord. Neurosurgery was urgently consulted, and the patient underwent anterior cervical discectomy and fusion (ACDF) with drainage of the abscess that same night. She was transferred to the ICU for post-op airway protection and was successfully extubated on post-op day 0. Her right upper extremity strength and mobility gradually improved. A PICC line was placed for outpatient antibiotic therapy (OPAT),and she was continued on IV Ancef for an 8-week course. Repeat imaging on day 9 showed improvement in the cervical and thoracic spine but worsening of a lumbar paraspinal collection, which was later drained by Interventional Radiology. A transesophageal echocardiogram ruled out endocarditis. The patient was medically stabilized and discharged home with PT, OPAT, and outpatient follow-up with ID, neurosurgery, nephrology, and primary care. Follow up imaging showed resolution of abscess after surgery (Image 2).

Discussion

This case highlights the serious complications that can arise from Staphylococcus aureus bacteremia. The patient likely developed bacteremia secondary to multilobar pneumonia, which then led to hematogenous seeding of the cervical spine. While pneumonia is not the most common source of epidural abscess, it can allow for systemic spread in vulnerable patients.

Persistent MSSA bacteremia despite appropriate antibiotics should always prompt evaluation for metastatic infection. In this case, the patient's ongoing leukocytosis and new upper extremity weakness raised concern, prompting spinal imaging and the diagnosis of a cervical epidural abscess.

Cervical abscesses are less common but carry higher risk due to the tight spinal canal and proximity to critical structures. Early recognition and timely surgical intervention likely prevented permanent neurological damage. This case underscores the improtance of multidisciplinary approach, having a low threshold for spinal imaging in the setting of bacteremia and persistant leukocytosis despite treatment, and early surgical intervention.

References

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