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CLINICAL VIGNETTE

An Unusual Case of *Staphylococcus Aureus* Prostatic Abscess

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Case Presentation

A 58-year-old chef originally from Guatemala presented to the emergency room for generalized weakness, dysuria, and gross hematuria for two weeks. He also reported a 70-pound weight loss over the past year with associated lower extremity weakness. Past medical history was significant for poorly controlled type II diabetes mellitus. He consumed three to four alcoholic drinks per week and denied any tobacco or drug use. Physical examination revealed a frail appearing male in no acute distress. He was afebrile and hemodynamically stable. His exam was significant for weakness of bilateral lower extremities requiring assistance for ambulation. He had no suprapubic or costovertebral angle tenderness.

Urinalysis showed pyuria and hematuria and the urine culture was positive for methicillin-sensitive *Staphylococcus aureus* (MSSA). He was treated with IV cefazolin following susceptibility results. However, given his clinical presentation of significant weight loss and weakness, he underwent a CT scan to evaluate for potential malignancy as an underlying cause of hematuria. The CT scan showed an incidental finding of liver cirrhosis with a 1.9cm hypodense hepatic lesion and a 3.5cm x 3.0cm prostatic abscess (**Figure 1**).



Figure 1

Despite appropriate antibiotic coverage of MSSA, patient remained intermittently febrile with urine cultures persistently positive. He underwent CT guided transrectal drainage of the prostate abscess with cultures also positive for MSSA. Given

the atypical organism of *S. aureus* on urine and abscess culture without a history of prior instrumentation and persistent fevers, there was concern for hematogenous seeding from an endovascular source. A transesophageal echocardiogram was done which showed no evidence of infectious endocarditis and blood cultures were negative for bacteremia. The patient was continued on four weeks of outpatient oral Trimethoprim Sulfamethoxazole with urology follow up.

Further evaluation for the hepatic lesion with an Eovist enhanced MRI revealed a hepatic lobe lesion 8.1cm x 6.3cm x 4.4cm consistent with primary hepatocellular carcinoma with a tumor thrombus extending into the portal veins.

Serology tests also revealed positive anti-smooth muscle antibodies 1:80 with marked IgG elevation suggesting autoimmune hepatitis as a likely underlying contributing factor to the hepatocellular carcinoma. The patient was referred to outpatient hepatology and oncology for further treatment options and was discharged with appropriate follow up.

Discussion

Prostatic abscesses is a rare condition diagnosed in only 0.2% of patients with urologic symptoms due to widespread use of antibiotics.¹ Before the modern antibiotic era, *Neisseria gonorrhea* was often the causative organism.² However, recent data suggest enterobacteria and other gram negative bacilli, specifically *Escherichia coli* responsible for up to 70% of cases.¹ *Staphylococcus* species can also be a causative organism, but have been associated with hematogenous spread from distant foci such as cutaneous abscesses, prior urethral instrumentation, and complications from intravenous drug use.^{3,4} Prior cases of prostate abscess have been associated with immunocompromised patients with underlying diabetes, hepatitis and HIV.⁵ Clinical presentations are often nonspecific with symptoms such as fever, dysuria, urgency, and frequency often mimicking other common lower urinary tract diseases.³ Without proper treatment, prostate abscess can progress to severe sepsis and death. Therefore, in patients with increased risk factors for infection presenting with urinary tract infections refractory to standard antibiotic coverage, prostatic abscess should be considered. Imaging assessment includes transrectal ultrasound, CT or MRI and should be integrated with clinical findings.

Currently, there are no guidelines for the management of prostate abscesses. However, treatment typically consists of adequate gram-negative antibiotic coverage with or without drainage. Drainage is usually required for patients who do not respond to antibiotic therapy alone. Several approaches for drainage have been proposed including transrectal, transurethral, or transperineal drainage versus transurethral resection of the prostate. Decision to drain versus surgical resection depends on size of the abscess, accessibility, and risk of complications.^{4,6} Based on review of current literature, there is conflicting evidence regarding the preferred method of drainage and no conclusive guidelines can be provided at this time.

Our case is the first reported case of *S. aureus* prostatic abscess in a patient with hepatocellular carcinoma with underlying autoimmune hepatitis. Given his comorbidities of diabetes and hepatitis, this patient's immunocompromised status is similar to the forty previously reported cases of *S. aureus* prostatic abscess. Interestingly, no distant source of infection was identified as an underlying etiology for *S. aureus* in our patient including skin infection, prior instrumentation, bacteremia, or endocarditis. The patient was treated with IV antibiotics and IR guided transrectal drainage and was continued on oral antibiotics for four weeks.

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