

# Prostate Abscess in an Adolescent With AIDS

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## Introduction

Widespread use of antibiotics and a decrease in incidence of gonococcal urethritis has resulted in a decrease in prostate abscesses.<sup>1,2</sup> However, chronic prostatitis, underlying immune suppression (including diabetes and AIDS), and urological procedures remain important risk factors. Because prostate abscess is also associated with benign prostate hypertrophy, they usually present in the fifth or sixth decades of life.<sup>1,2</sup> However, our adolescent patient described here presented with an acute febrile illness accompanied by lower urinary tract symptoms consistent with prostate abscess.

## Case

A 20-year-old male with perinatally acquired HIV infection presented with an acute febrile illness accompanied by suprapubic abdominal pain, dysuria, hematuria, incomplete bladder emptying, and purulent penile discharge. He reported chills, fatigue, malaise, anorexia, and dysphagia but denied vomiting, diarrhea, and flank or rectal pain. Though known to our group since birth, the patient had been lost to follow-up for 2 years preceding admission, during which time he took no antiretroviral medications.

His past medical history was significant for lymphoma successfully treated at age 3. As an adolescent he became involved in prostitution and was diagnosed several times with sexually transmitted infections. Additionally, he reported use of cigarettes, marijuana, and cocaine.

At presentation, he was febrile and ill-appearing. He had oral thrush but no palpable lymphadenopathy, and his lungs were clear. His abdomen was soft without peritoneal signs or organomegaly but he had suprapubic tenderness. His genitals were normal without ulcers or penile discharge. The rectal exam was significant for perianal condylomata and prostate tenderness and fluctuance.

Laboratory evaluation demonstrated a normal complete metabolic panel, a white count of 7800/μL (78% neutrophils, 13% lymphocytes), hematocrit 35%, and platelet count of 161 000/μL. His urine had moderate blood and protein with >182 white blood cells but was nitrite negative. Blood and urine cultures were obtained,

and rapid plasma reagin (RPR), urine GC/*Chlamydia* nucleic acid amplification tests, HIV viral load, and lymphocyte subsets were sent.

Computed tomography (CT) with intravenous contrast revealed 2 communicating, rim-enhancing fluid collections measuring 1.9 × 1.5 cm and 2.3 × 1.4 cm within the prostate consistent with abscess (Figure 1A). Urology recommended broad-spectrum antibiotics but no immediate drainage. The patient was started on meropenem as well as oral fluconazole for thrush/candidal esophagitis.

The patient defervesced after 3 days of antibiotics. His GC/*Chlamydia* test was negative and RPR nonreactive. The urine culture grew pansensitive *Escherichia coli*. His HIV viral load was 137 000 copies/μL, and his CD4+ T cell count was 11 cells/μL. Because of his history of drug use, we were concerned about discharge with central venous access and thus opted for a trial of oral ciprofloxacin and metronidazole on discharge. Though clinically improved in Urology follow-up 3 days after discharge, repeat CT imaging demonstrated worsening of the abscess (Figure 1B). Intravenous ceftriaxone was thus initiated, and transurethral unroofing of the abscess was performed, and culture of abscess fluid yielded no further pathogens. Repeat CT imaging after 7 days of ceftriaxone showed full resolution.

## Discussion

In the pre-antibiotic era, prostate abscess was most often associated with *Neisseria gonorrhoea* infection. Currently, members of Enterobacteriaceae, tuberculous and nontuberculous mycobacterial species, *Staphylococcus aureus*, and some fungi cause the majority of described cases in Western countries. Culture of urine and abscess fluid

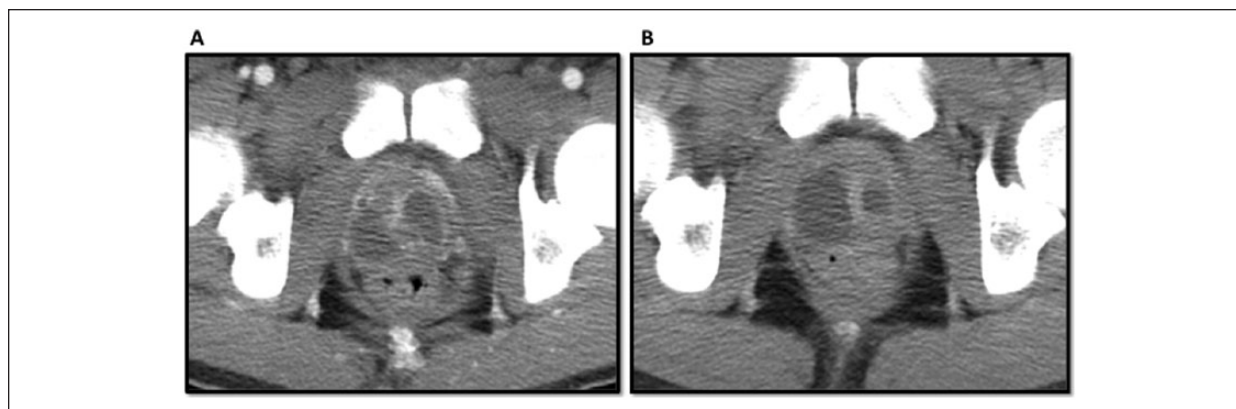
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**Figure 1.** Transverse image of complex prostatic abscess in our patient at diagnosis (A), and after 5 days of antibiotic treatment (B).

should be done prior to initiation of antibiotics if possible and tests for gonorrhea, HIV, and tuberculosis should be performed.<sup>1,2</sup>

Immune suppression correlates with the risk of prostate abscess but does not help predict the causative pathogen.<sup>2</sup> Meropenem was chosen empirically for our patient to cover multidrug-resistant Enterobacteriaceae, which is prevalent in our area. A negative tuberculin skin test and no recovery of mycobacterial species from abscess fluid together made a mycobacterial pathogen unlikely. Historically, prostate abscesses were diagnosed by culture of midstream urine.<sup>2</sup> In our patient, recovery of *E coli* from urine guided antibiotic coverage with ciprofloxacin and then ceftriaxone.

Drainage of prostate abscess can be achieved by transurethral unroofing, as in our patient, or by image-guided transperineal or transrectal fine needle aspiration. Severe or refractory cases may require resection of the prostate gland. The role of surgical drainage in the treatment of prostate abscess has been addressed in some case series. Ludwig et al described failure of medical management in 3 of 6 patients with monofocal, subcentimeter abscesses.<sup>3</sup> Bhagat et al reported 8 spontaneous abscess ruptures in 48 patients treated medically, though 2 patients with microabscesses responded to medical management.<sup>4</sup> Oliveira et al also reported successful medical management of 2 patients with microabscesses.<sup>2</sup> Trauzzi et al similarly reported successful medical management of 1 patient.<sup>5</sup> Because of the relatively poor perfusion of the prostate gland, antibiotics should be considered adjunctive therapy to surgical drainage of prostate abscess.

CT is often used to diagnose prostate abscess because of concern for precipitating urosepsis with transrectal ultrasound prior to initiation of antibiotics.<sup>1,2</sup> However, transrectal ultrasound should be considered for repeat imaging to reduce radiation exposure.

Immune suppression is a key risk factor for prostate abscess and should be addressed when treating patients. Titration of immunosuppressant drugs and improving diabetic control should be considered where appropriate. Assessment of our patient's HIV-resistance patterns guided reinstitution of antiretroviral medications once his acute illness had resolved. To date, the patient has had no recurrence of lower urinary tract symptoms and has responded favorably to reinstitution of antiretroviral therapy.

#### Author Contributions

SCM and CB contributed to conception, design, analysis, drafting and giving final approval on the manuscript.

#### Declaration of Conflicting Interests

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