An epidural abscess following transrectal ultrasound-guided biopsies of the prostate

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We report the occurrence of an epidural abscess following TRUS-guided prostate biopsies, which highlights the fact that severe complications may occur with this technique in spite of antibiotic prophylaxis. Ciprofloxacin-resistant Escherichia coli is a frequent cause of fever following TRUS-guided prostate biopsies as was the case in our patient. Early suspicion of the presence of ciprofloxacin-resistant Escherichia coli may help avoid serious complications in these patients.

Key Words: prostate, biopsy, infection

Introduction

Complications of transrectal ultrasound-guided (TRUS) biopsies of the prostate are often minor and include pain, hematuria, hemospermia and fever. Although the definition of urinary tract infection varies in different studies, a recent literature review found few serious outcomes, such as septic shock or death.[1] We report the occurrence of an epidural abscess following TRUS-guided prostate biopsies, which highlights the fact that severe complications may occur with this technique in spite of antibiotic prophylaxis.

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Case report

In January 2002 a 54 year-old asymptomatic male patient with no prior medical history underwent six TRUS-guided prostate biopsies for an elevated Prostate Specific Antigen (PSA) of 4.0 ng/mL. Digital rectal exam was normal. Antibiotic prophylaxis with 500 mg of oral ciprofloxacin was given to the patient beginning with one dose 2 hours prior to TRUS-biopsies and two other doses at 12-hour intervals following the exam. It was confirmed that the patient had taken the antibiotics as prescribed. No urine culture was taken prior to biopsy since the patient had no prior history of prostatitis, urinary tract infection or recent antibiotic use.

A few hours after the exam the patient reported chills, dysuria, pollakiuria and gross hematuria. He was admitted to hospital the following day because of fever at 39.8 Celsius. On admission, DRE and a

repeat TRUS were normal. Intravenous ciprofloxacin was started. Two days later, cefazolin and gentamicin were prescribed because urine cultures demonstrated Escherichia coli that was resistant to ciprofloxacin. On post-biopsy day 5, the patient developed an adult respiratory distress syndrome (ARDS) and was admitted to the intensive care unit (ICU) for non-invasive respiratory support (B-PAP). Trans-rectal ultrasound was unchanged compared to the one obtained at the time of biopsy. No evidence of bleeding nor abcess was detected. Cardiac sonography and abdominal CT-scan were negative. On day 6 he continued to be febrile (38.7 Celsius) and cefotaxime was substituted for cefazolin for broader spectrum coverage. The fever gradually decreased over the next few days and the patient was released from ICU. On post-biopsy day 10 the patient developed paresthesias in both upper extremities. Physical exam was normal, including cervical palpation. Further investigation with a gallium scan, a nuclear bone scan and magnetic resonance imaging were consistent with the presence of an epidural abscess in the cervical spine. On day 11, surgical drainage of an epidural abscess was done by our neurosurgical team. The patient rapidly recovered from the operation without any neurological complications and his fever subsided. Prostate biopsy showed Gleason grade (3+3) adenocarcinoma.

Discussion

Complications of transrectal ultrasound-guided biopsies of the prostate are often minor and include pain, hematuria, hematospermia and fever. In 2002 Raaijmakers et al reviewed their extensive experience with TRUS-guided biopsies in 5802 patients. The authors found that only 3.5% of the men studied developed fever after transrectal ultrasound-guided sextant biopsies of the prostate and only 27 men (0.5%) were admitted to the hospital for treatment. Also, only one patient was admitted to the intensive care unit because of signs of septic shock. All men received intravenous antibiotic therapy and recovered from the fever within days. Escherichia coli was the most frequent pathogen in men with proven urosepsis. Risk factors for the development of fever could not be determined in this study. In another series Rodriguez and Terris found an association between the number of biopsies and the presence of fever[2] but there was no association of fever or chills with a history of urinary tract infections. These investigators also concluded that having prostate cancer was not a risk factor for any of the complications.

The use, type, and duration of antibiotic prophylaxis have been discussed in published reports. Placebo-controlled studies have shown a benefit for antibiotic prophylaxis versus placebo in preventing signs of urinary tract infection. Kapoor showed that single-dose oral ciprofloxacin reduced bacteriuria after biopsy compared with placebo in patients undergoing transrectal prostatic biopsy.[3] In two randomized studies one day of prophylactic antibiotics was shown to be effective.[4,5]

In the case of our patient these suggested antibiotic prophylactic regimens were met. However the patient developed an epidural abscess following TRUS-guided prostate biopsies. Although this complication is rare we believe it underlines the fact that serious infections may occur following this procedure and that early intervention may avoid life threatening sequelae. Patients should be advised of the risks of prostate biopsy while being reassured that serious complications are very rare.

Conclusion

This case illustrates a rare complication due to TRUS-guided prostate biopsies. Ciprofloxacin-resistant Escherichia coli is a frequent cause of fever following TRUS-guided prostate biopsies as was the case in our patient. Early suspicion of the presence of ciprofloxacin-resistant Escherichia coli may help avoid serious complications in these patients. □

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