Case Report

Prostatic aspergillosis in a renal transplant recipient

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Introduction

Fungal infections of the prostate are rare, occurring mostly in patients with impaired immune status. Fungal prostatitis had been reported in cases of blastomycosis, coccidioidomycosis, cryptococcosis, candidasis and histoplasmosis [1–5]. Prostatic aspergillosis is an extremely uncommon event with only six reported cases to date [6,7]. We observed a case of prostatic aspergillosis in a renal transplant recipient, which was diagnosed histologically after transurethral resection of the prostate.

Case

In November 1995 a 44-year-old man with end-stage renal disease caused by autosomal dominant polycystic disease received a first cadaveric renal transplant. The transplant was removed 6 days later because of acute thrombosis of the renal transplant artery. In April 1998 he received the second cadaveric transplant. The immunosuppressive regimen comprised cyclosporin A, azathioprine (2.5 mg/kg/day) for 14 days and methylprednisolone (0.4 mg/kg/day) tapered from 32 mg to 6 mg over 6 months. Repeated urinary cultures before discharge were negative on bacteria and fungi. The ureteral splint was removed in May 1998. Three hours after the removal, the patient experienced acute retention of urine. Urinary bladder catheterization was performed. Three days later the catheter was removed and the patient was discharged with a well functioning graft (serum creatinine 153 µmol/l).

Two weeks later he was readmitted because of worsening of hypertension. He also complained of mild dysuria. Symptoms of prostatic involvement dramatically worsened over next 24 h with severe dysuria, frequency, and intensive pain, rendering the rectal examination nearly impossible. At cystourethroscopy, a massive purulent discharge from the right prostatic lobe was observed. Prostatic tissue obtained by subsequent transurethral resection appeared mostly necrotic on macroscopic examination.

Histological examination revealed numerous foci of necrosis in prostatic ducts and acini, accompanied by heavy leukocytic infiltration. Necrotic tissue contained characteristic branching, septate hyphae, morphologically consistent with an Aspergillus species (Figure 1), that was also confirmed by Grocott–Gomori methenamine-silver special staining (Figure 2). Fungal abscesses were surrounded by mononuclear cells with occasional giant cell of Langhans type.

On further investigations no overt focus of Aspergillus infection could be found in the transplant kidney, lungs, nasal sinuses and brain. The patient was treated with itraconazole 200 mg twice per day for 4 months. Convalescence was unremarkable, the follow-up urine cultures on Aspergillus were negative. However, repeated transrectal sonography and MRI scan of prostate, while the patient was still on therapy,

Fig. 1. Numerous branching Aspergillus hyphae in necrotic prostatic tissue. H&E, ×175.
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Discussion

Fungal infections of the prostate are rare. The patients at risk are those with diabetes mellitus and impaired immune system caused by AIDS, chemotherapy and transplantation [8]. Therapeutic procedures such as catheter positioning could also favour the spread of infection into prostatic ducts and subsequent abscess formation. Our patient had several risk factors: he was immunosuppressed and experienced repeated urinary catheterization.

Early clinical findings of prostatic abscess are variable and non-specific. Fever, dysuria, urinary frequency and perineal pain are most frequently present. Transrectal ultrasonography and CT are the most reliable methods to diagnose prostatic abscess [9]. In our patient, dysuria after removal of the ureteral splint was probably the first symptom of prostatic infection. However, the fungal nature of prostatic abscesses was confirmed only by histological examination of the surgically removed prostatic tissue.

In renal transplant recipients Aspergillus infection usually affects the lungs, central nervous system, skin, liver and kidneys, which are the most common target organs in the genitourinary tract [10]. The invasive aspergillosis occurs mostly during the first year after transplantation. In our patient the diagnosis was made 2 months after the renal transplantation. To identify the fungal growth, repeated large volume urine cultures on Sabouraud medium were proposed, though the results were not satisfactory due to high propensity of organism for tissue attachment and invasion [6]. This explains why several urine cultures in our patient were negative. Negative urine cultures were also observed in other cases of prostatic aspergillosis reported so far [6,7]. For this reason tissue cultures should be performed whenever possible [6].

Fungal infections of prostate may present as a local disease or as a part of systemic involvement, usually in immunocompromised patients [6]. Our patient had a localized prostatic disease. We decided for systemic therapy because the prostate could be a common site of persistent infection after apparently effective surgical treatment. This happened to our patient despite systemic treatment with itraconazole, which is supposed to be effective in many patients with aspergillosis [11]. Unsuccessful treatment with itraconazole could result from the resistance of Aspergillus at the beginning of the treatment. It is not clear, whether that was a case in our patient, because bacteriological cultures of prostatic tissue at first examination were not performed. In the NIAID mycoses study group no isolate was identified that was resistant to itraconazole [12]. Occasional resistant isolates have been reported, but whether resistance developed during the long-term therapy with itraconazole is not known [13].

Fig. 2. Silver impregnation of Aspergillus hyphae. Grocott–Gomori methenamine silver, × 175.

Fig. 3. MRI-scan of pelvis demonstrates residual cavity within prostate gland.

References


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