



Inflammation and infection

Intravesical Mycetoma misdiagnosed as enterovesical fistula

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ABSTRACT

Fungus formation in the urinary tract mainly occurs in immunosuppressed patients, and is a rare and dangerous complication of candiduria that is commonly misdiagnosed. We report a case of intravesical mycetoma associated with hydronephrosis, initially diagnosed as enterovesical fistula. Cystoscopy revealed spongy material within the urinary bladder, and histopathological examination showed Mycetoma of *Candida* species. The urine culture showed *Candida tropicalis*. Endoscopic removal and antifungal therapy with fluconazole was initiated, and no complications occurred during follow-up.

1. Introduction

The prevalence of fungal urinary tract infections (UTIs) has risen during the last decades. *Candida* spp. account for 1% of all positive urine cultures in hospital laboratories, and for 0.2% of all cultures.¹ *Candida albicans* is the most common fungal species, followed by *Candida glabrata* and *Candida tropicalis*.² Diabetes, immunosuppression, long-term hospitalization, use of broad-spectrum antibiotics, kidney stones, urinary tract indwelling catheters and urinary tract malformation are risk factors for candida urinary tract infections. Patients with candiduria are usually asymptomatic, only 2–4% present with dysuria, urgency, flank pain or hematuria.² Fungus may form in balls and can cause obstruction of the lower and upper urinary tract, with the need for surgical intervention. Computerized tomography (CT) imaging typically shows the simultaneous presence of a low-density filling defect, calcified areas and gas bubbles.³ The standard therapy is antifungal therapy with fluconazole. In this case report, we present an elderly patient with hematuria and pneumaturia due to a *Candida tropicalis* infection of the bladder.

2. Case presentation

A 62-year old male was admitted to our ward with hematuria, pneumaturia, dysuria, pelvic pain and obstructive urinary symptoms. The patient had a history of medically controlled diabetes, arterial hypertension, prostatic hyperplasia and stable chronic kidney disease (serum creatinine 1,8mg/dl). On clinical examination, the only abnormal finding was swelling of the penis and scrotum. C-reactive protein (7.9 mg/dL; normal range: 0.1–0.5 mg/dL), serum creatinine

(1.8mg/dL; normal range: 0.7–1.2mg/dL) and serum potassium (5.0 mmol/l; normal range: 3.4–4.5mmol/L) were elevated. Ultrasound and CT scan of the abdomen revealed bilateral hydronephrosis (right: II°, left: I°) with a thickened urinary bladder, partly filled with air, as shown in Fig. 1 (panel A). Under the preliminary diagnosis of an enterovesical fistula, the patient received intravenous ciprofloxacin (500 mg b. i.d) and metronidazole (200 mg b. i.d). Enterovesical fistula was ruled out via irroscopy and colonoscopy. Preoperative skin antisepsis, using an antiseptic involving iodine, which is a known antibacterial and antifungal disinfection, was performed.⁴ Cystoscopy revealed a creamy, spongy material within the urinary bladder as shown in Fig. 1 (panel B). Macroscopically, the urothelium appeared vulnerable and thickened, the right ureteric orifice was normal, the left ureteric orifice could not be identified. The material was evacuated and referred to histopathological examination Fig. 1 (panel C). The histopathological diagnosis was Mycetoma of *Candida*-Species. The urine culture showed *Candida tropicalis* (10⁵). The patient received oral treatment with fluconazole for 14 days and was discharged after 6 days of therapy with a catheter due to prostatic obstruction. No anaphylaxis or postoperative complications were observed during the pharmacological treatment period.

3. Discussion

Candiduria is a rare condition in healthy populations, but is occasionally seen under certain conditions and can cause opportunistic urinary tract infections. In a recent study, the incidence of candiduria in 400 clean-catch midstream urine specimens collected from type 2 diabetes patients was 10%, and 87.5% of the patients included in the study

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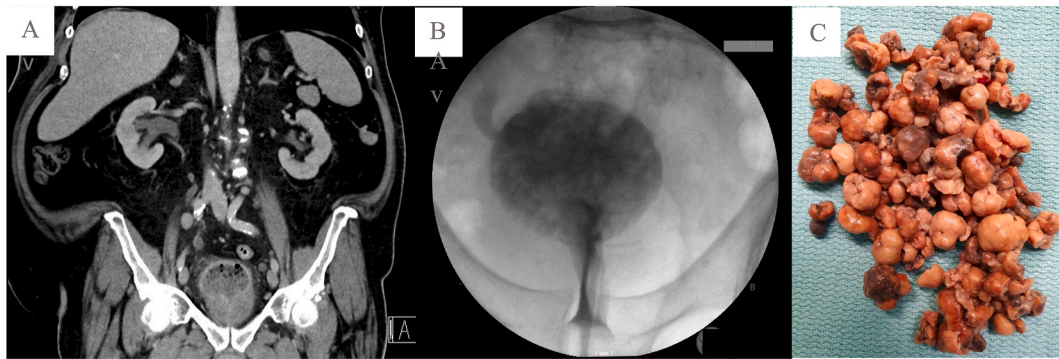


Fig. 1. (A) CT scan of the abdomen: thickened urinary bladder, partly filled with air, (B) cystoscopy: reflux and material within the bladder, gas bubbles, (C) spongy material.

were females.⁵ Candiduria itself is not a valid predictor for candidemia. Outcomes of 530 candiduria patients were evaluated in a multicenter prospective study and only 7 patients (1.3%) developed invasive candidiasis during the 10 weeks of follow-up.²

Two risk factors for *Candida* infection were present in our patient: bladder outlet obstruction due to prostatic hyperplasia, and diabetes mellitus. The imaging of our patient showed obstruction and gas bubbles in the urinary bladder.

Treatment with antifungal agents in asymptomatic candiduria is recommended only in patients at high risk for developing candidemia; these are neutropenic patients, patients exposed to urological manipulations, and very low-birth-weight infants (<1500 g). For the treatment of symptomatic *Candida* UTIs or for patients undergoing urologic procedures, fluconazole is usually the drug of choice, as it is well tolerated, has high oral bioavailability, and approximately 80% of fluconazole is eliminated via urine without prior metabolism, resulting in 10–20 higher urinary than serum concentrations. Amphotericin B, injected intravenously or irrigated into the bladder, is an alternative if fluconazole cannot be used or in case of fluconazole resistance.⁶

4. Conclusion

Isolated intravesical mycetoma represents a rare condition that is commonly misdiagnosed. Endoscopic removal and anti-fungal therapy may be used to manage this rare condition.

Consent

Informed consent was obtained from the patient prior writing this report.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationship that could have appeared to influence the work reported in this paper.

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