An Awareness of a Possible Cause of Obstruction Due to an Ureteric Aspergilloma Mistaken for Stone

Prabhdeep Singh NAINa; Rikki SINGALb; Arvind GOYALc; Kuldip SINGHd; Harish MATTAc; Samita SINGALd

aDepartment of Surgery, Dayanand Medical College & Hospital, Ludhiana, Punjab, India
bDepartment of Surgery, Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana, (Distt-Ambala), Haryana, India
cDepartment of Urology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India
dDepartment of Radiodiagnosis and Imaging, Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana, (Distt-Ambala), Haryana, India

ABSTRACT

Ureteric aspergilloma is a rare cause of ureteric colic and obstruction. We are presenting a rare entity in a 58-year old man who had complained of pain abdomen. It is a case of unilateral ureteric aspergilloma in a middle aged diabetic male. He was diagnosed as a case of ureteric calculi on ultrasound and X-ray KUB. On ureteroscopy yellow pus like ball was removed and sent for pathology examination. To our surprise on histopathology, it revealed as aspergilloma. Patient was treated with voriconazole.

Keywords: ureter, obstruction, ultrasonography, stone, Mycelial clumps, or bezoars (fungus balls), diabetic

INTRODUCTION

Spores of Aspergillus are dangerous opportunistic pathogens in patients with low immunity, affects the lungs, central nervous system, sinuses and skin. Fungus balls rarely cause upper urinary tract obstruction, and they are most often found in patients with diabetes mellitus or impaired immunity (1,2). The USG abdomen findings of fungal balls of the urinary tract are nonspecific and have rarely been described, while in most cases, radiolucent filling defects are observed on excretory or retrograde urography. Here, an unusual case of an aspergilloma causing ureteral obstruction is presented; it was initially mistaken for a pelviureteral stone on USG abdomen. The doctors treating the causes of ureteric colic and obstruction should be aware of a possible cause of obstruction due to a ureteric aspergilloma.
A 58-year-old man presented to outpatient department with left flank pain that developed one month earlier & difficulty in passing urine since 15 days. He also complained of mild fever, nausea, vomiting, and decreased urine output. He was diabetic since 2 years and hypertensive for the same period. Before coming to our hospital patient had ultrasound abdomen one month earlier showing hydronephrosis, on cystoscopy a large white friable mass was seen at the lower end of the ureter, a retrograde pyelogram performed, and a DJ stent inserted.

On admission, his initial blood pressure was 140/80 mmHg and his body temperature was 100°F. A physical examination revealed left costovertebral angle tenderness. Initial blood investigations showed leukocytosis (white blood cell count-20,800/ mm³) and an elevated creatinine level (2.26 mg/dl), serum glucose level was 207 mg/dl. Urinalysis demonstrated hematuria.

X-ray KUB showed stone in left side ureter along with a DJ stent (Figure 1). Ultrasound abdomen done on next day of admission revealed mild fullness of pelvocalyceal system of the left kidney, ureter is mildly prominent with DJ stent in situ on the left side (Figure 2). An echogenic focus with posterior acoustic shadow measuring 9.5 mm is seen in distal ureter at crossing of iliac vessels, suggestive of stone as the cause of the ureteral obstruction.

To relieve the obstruction ureteroscopy was done under short general anaesthesia, pus seen at lower left ureteric level. This pus like / fungal ball removed and sent for biopsy. Retrograde pyelography demonstrated no filling defect in the distal ureter. The culture of the urine yielded no growth of pyogenic organisms. After 8 days of hospitalization, the patient’s serum creatinine level decreased to 1.0 mg/dl. On ureteroscopy, movable light yellow pus like ball was found in the left lower ureter. Ureteroscope passed till pelvoureteric junction, thick pus flakes with putty-like consistency was present. Retrograde pyelography done, no filling defects were present. Histopathological examination revealed clumps of hyaline septate fungal hyphae with dichotomous branching, suggestive of Aspergillus flavus (Figure 3). In addition, Gram-positive cocci with calcifications were observed in the specimen. The tissue culture of the specimen yielded both Aspergillus species and Enterococcus faecalis. Post-operatively, the patient was treated with an antifungal agent, voriconazole. The patient had no subsequent urinary tract infections and is now well at the one month follow-up.

DISCUSSION

Aspergillus bezoars of the urinary tract is a rare entity and difficult to diagnose. There have been fewer than 20 cases of Aspergillus bezoars of the urinary tract (1,2). In the literature, approximately 60 cases of fungal bezoars of the urinary tract have been reported (2). The great majority has been associated with Candida species. The most frequent predisposing factor is diabetes mellitus. Other predisposing conditions are; therapy with immunosuppressive agents in transplant patients or long antibiotics, intravenous drug abuse, catheter or foreign bodies and malignancy may cause formation of aspergillosis in the urinary tract (3-5). As in our case patient also had a history of diabetes mellitus which might be the predisposing factor.

Furthermore, the initial sonographic abdomen findings did not raise suspicions of a fungus ball, but rather gave the impression of a large distal ureteral stone. The urine cultures yielded no bacterial growth. Therefore, the patient was initially misdiagnosed as having a ure-
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Non-enhanced helical CT nowadays is the choice of modality for evaluating urinary tract diseases and for revealing other causes of abdominal pain with suspected renal colic (6). However, challenge remains still there for diagnosing fungus ball disease. The CT findings the urinary tract is not specific, and has rarely been described in case of fungal bezoars (6). While in most reported cases, radiolucent filling defects could be observed on excretory or retrograde urography. It is seen that in the present case the fungus ball was observed as a stone-like lesion with echogenic focus with posterior acoustic shadow on ultrasound abdomen. In our case pathology, was removed successfully by ureteroscopy.

It is remarkable that imaging modalities, including excretory urography, computed tomography, and retrograde ureteropyelography, did not identify filling defects to suggest a fungal causation of the ureteral obstruction, even in the presence of a rapidly progressing process (2). Modi P and Goel R reported a rare case of bilateral synchronous involvement of kidneys and ureter and its management (7). The main aim is to relief the obstruction by percutaneous drainage of the kidney and systemic infusion or local irrigation of antifungal agents. When these measures fail, percutaneous surgical debulking of the fungal bezoar is indicated (7). Percutaneous therapy has usually been used to remove fungal balls and to irrigate the pelvicalyceal system with antifungal solution (4). Ureteroscopy should be the first-line therapy in patients who have a fungal mass of <3 cm, whilst for more extensive bezoars the percutaneous therapy may be more appropriate in both time and logistics (4). As in our case fungus ball was in ureter which was managed successfully by ureteroscopy. Fungus balls in the upper urinary tract that are not too large can be initially treated with antifungal agents before surgery (9).

The development of a fungus ball accompanied by encrustation or even hard stone formation has been reported previously, although no information on the appearance of the fungus ball on ultrasound was presented.

Our experience suggests that the combination of ultrasound and X-ray KUB is less invasive and more sensitive than intravenous urography for the diagnosis of calculi in patients with symptoms and signs suggestive of stone disease or who are at high risk for stone formation.

We believe that ultrasonography added to KUB only demonstrate upper urinary tract ob-
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of course, to diagnose fungal infections promptly, a high index of suspicion in certain clinical settings cannot be overemphasized. In addition, multiple large-volume urine cultures may be necessary to identify therapy was not considered preoperatively because the patient was misdiagnosed with a urinary stone.

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CONCLUSION

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