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RESEARCH ARTICLE

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A RARE CAUSE OF URINARY TRACT OBSTRUCTION (THE HIDDEN FUNGAL CULPRIT)

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ABSTRACT

Background: Fungal infections of the urinary tract are not uncommon, but occasionally, these infections can take a more unusual and troubling turn, with the formation of what is known as a fungal ball. A fungal ball in the urinary bladder is an uncommon entity. It presents a unique clinical challenge, especially in pediatric and immunocompromised populations (1,3,4). These masses are typically formed by Candida species, most commonly Candida albicans or Candida tropicalis, (1,4), and can lead to hydronephrosis, urinary retention, and sepsis if not promptly diagnosed and treated. (2,3). **Case presentation:** We report the case of a seven-month-old child presenting with the retention of urine, low-grade fever, diarrhea, and bad perineal hygiene. Obstruction was relieved by urinary catheterization in the emergency department. The patient subsequently underwent cystoscopic intervention for the extraction of the obstructing mass, followed by administration of systemic antifungal therapy. **Conclusion:** Although infrequent, fungal ball formation within the urinary tract represents a potentially severe condition that requires swift identification and coordinated management across specialties. It serves as a stark reminder of how opportunistic infections can manifest in unexpected ways, particularly in vulnerable patients. Timely diagnosis and intervention are crucial, not only to remove the obstruction but to restore normal urinary flow and prevent long-term renal damage. (1,5)

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INTRODUCTION

Fungal bezoars, or fungal balls, in the urinary tract, are rare, but potentially serious causes of obstruction, particularly in neonates, immunocompromised individuals, in patients with indwelling catheters and with prolonged antibiotic use (1,3). A fungal ball, also known as fungus bezoar, is a mass composed of tangled fungal elements, cellular debris, and mucus. It's not an invasive growth, but rather a physical obstruction that sits within the urinary tract most often in the renal pelvis, ureter, or bladder (5). The most common fungal culprit behind this phenomenon is Candida, especially Candida albicans (1,4). Diagnosis often requires imaging modalities like Ultrasound or CT scan, with confirmation via microbiological and pathological analysis (1,5). Treatment approaches vary based on severity and location, combining antifungal therapy (e.g., amphotericin B, fluconazole) with surgical or endoscopic intervention to relieve obstruction and remove fungal masses (1,2,4). Since 1961, only 20 cases have been reported in the literature, and most cases reported in adults (2). We report the case of a 7-month-old child, finally diagnosed to have a urinary bladder fungal ball.

CASE PRESENTATION

A seven-months-old child was born full term via NVD and had no significant birth history. The child presented with complaints of inability to pass urine and excessive crying; the patient was catheterized in emergency department, and the obstruction was relieved. He had a history of excessive crying and urinary dribbling for 3 days; with these complaints, he had visited peripheral hospitals and had been catheterized twice. The child also had complaints of fever, for 7 days, low-grade undocumented, and diarrhea for 7 days, for which he was not taking any medications. On Examination: he was an irritable child, excessively crying, while was active and had a heart rate of 125 beats/min, R/R of 28 breaths/min, and was afebrile. On local examination: he was circumcised, with bilateral descendant testis, and had perineal rash. The rest of the general physical and systemic examinations were unremarkable. His baseline work-up including Complete blood count, urea, and electrolytes was unremarkable. U/S KUB performed was suggestive of mild hydronephrosis in the right kidney, an irregularly shaped, elongated hypochoic area seen in the urinary bladder measuring 2.0 *1.4 cm near the base of the bladder. A Cystoscopy of the patient was performed, and a yellowish-white mass was seen in the urinary bladder, as shown in Fig. 1.

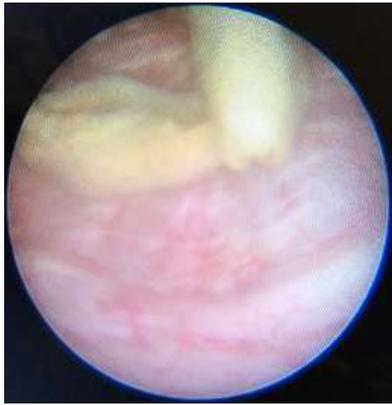


Fig. 1. Cystoscopic view showing yellowish white Foreign body in the urinary bladder

The foreign body was removed periurethral and sent for histopathology.



Fig 2.



Fig 3.

Post-operatively, the patient remained well, he was discharged on antifungals and followed up in OPD. Histopathology of the foreign body confirmed that it was a fungal ball.

DISCUSSION

Fungal ball uropathy is a rare form of urinary tract obstruction caused by the accumulation of fungal elements known as a mycotic bezoar, which block the urine flow. These masses appear as mobile, oval, and echogenic structures on imaging, formed by dense tangles of wide, branching fungal hyphae (5). There has been a noticeable rise in the occurrence of fungal urinary tract infections (UTIs) in recent years. Yeasts are now isolated in approximately 7–8% of urine cultures. (2,4). Among fungal pathogens, *Candida albicans* is the most commonly identified species, followed by *Candida tropicalis*, with *Aspergillus* species being rarely involved (4). *Candida albicans* are typically a harmless part of the body's normal flora found in the mouth, gastrointestinal tract, and vagina. However, in certain conditions, can become pathogenic. Fungal pathogens can access the urinary system through multiple pathways, such as hematogenous spread during systemic infections, direct extension from neighboring organs, or retrograde entry through the urethra (1,3). Immunosuppression, prematurity, presence of urinary catheters, all are predisposing factors for developing urinary tract infection, as these factors facilitate fungal colonization and subsequent infection (1,3,4). Diagnosis is confirmed by urine microscopy and culture; Ultrasound is often the first investigation performed, where fungal balls appear as echogenic (bright) masses. However, their appearance can resemble tumors or blood clots, making further investigation necessary to confirm the diagnosis (5). Managing fungal ball uropathy can be complex, and the treatment can be challenging. The most effective approach involves the combination of systemic antifungal therapy and physical relief of urinary tract obstruction, either through surgical intervention or drainage. (1,2)

CONCLUSION

Although fungal balls are a rare cause of urinary tract obstruction, they should always be considered in the differential diagnosis, especially in patients with known risk factors like immunosuppression or catheter use. Early use of ultrasound can help identify suspicious masses, but definitive diagnosis and successful treatment often require a combination of antifungal medications and procedures to relieve the blockage. Prompt recognition and management are key to preventing serious complications. (1,5)

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