Bilateral Spontaneous Urinoma- A Common Condition due to Uncommon Cause

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Abstract

Bilateral spontaneous urinoma is an encapsulated collection of urine around the kidney. Urinoma usually occur due to an obstructive cause. Urinoma due to neuro-vesical dysfunction is rare. In our manuscript, we present a young female who presented with spontaneous asymptomatic bilateral sub capsular urinoma due to poorly compliant bladder with high pressure voiding.

This case report indicates the need for thorough clinical, appropriate imaging and urodynamic assessment in patients with neuro-vesical dysfunction with high pressure voiding in order to detect these rare conditions earlier.

Keywords

Urinoma; Obstruction; High-pressure Void; Neuro-vesical dysfunction; Compliance

Introduction

Urinoma is defined as an encapsulated collection of urine around the kidney in the perinephric space. In most occasions, it is preceded by a definite antecedent history. Acute ureteric obstruction secondary to calculus disease is one of the common conditions that we come across in clinical practice. It may also occur secondary to retro-peritoneal fibrosis, malignancies of intra-abdominal solid organs or after a blunt injury to abdomen [1]. Such urinomas are usually located in the peri-renal region. Rarely, they may be found extending to peritoneal cavity, pleural space or even the mediastinum [2]. Most of the urinomas are unilateral. Bilateral spontaneous urinomas are rare. Such bilateral urinomas are usually secondary to obstructive uropathy, especially posterior urethral valves, pelvi-ureteral junction obstructions or vesico-ureteral reflux [3,4]. Most of the reported cases are usually observed in children [5]. Spontaneous bilateral perinephric urinomas in adults are extremely rare. It is even rarer to come across a condition of bladder outlet obstruction and poor compliance of urinary bladder, especially in young adult females. In our manuscript, we present a young female who presented with spontaneous asymptomatic bilateral subcapsular urinoma due to poorly compliant bladder with high pressure voiding.

Case report

A 20-years-old unmarried female patient presented with bilateral loin pain and recurrent episodes of high grade fever with chills and rigors for 2 weeks. She had a past history of voiding difficulty with constipation, since childhood. On admission, she was febrile and had bilateral loin tenderness with a palpable tender right loin mass. Laboratory investigations revealed a high total
leucocytic count of 22,000 with raised creatinine of 2.3mg/l. Urine and blood culture grew E. coli. She was managed conservatively with antibiotics and antipyretics. Ultrasound (USG) showed bilateral thick walled subcapsular collection [Figure 1A and 1B]. Magnetic Resonance Imaging (MRI) scan of whole abdomen showed bilateral urinoma with mass effect on both the kidneys [Figure 1C and 1D].

Patient was planned for cystoscopy, bilateral Retrograde Pyelogram (RGP) and bilateral diagnostic ureteroscopy. Diagnostic ureteroscopy with ‘double J’ stenting was done. She was managed conservatively with IV antibiotics. Serum creatinine improved to 1.5mg/dl and the patient was discharged after catheter removal on second post-operative day. Within a week, she presented to the emergency with fever and bilateral loin pain. Computed Tomography (CT) scan revealed an increasing perinephric collection with double J stents in position [Figure 2A and 2B]. Hence, bilateral Percutaneous Drainage (PCD) nephrostomy tube placement was done. About 150ml and 90 ml of clear fluid was aspirated from the right and left side respectively. The aspirated fluid creatinine levels were suggestive of extravasated urine. Patient was also evaluated for bladder dysfunction with uroflow and urodynamic evaluation. Uroflowmetry showed a Qmax 11 ml/sec with a post void residue of 170ml [Figure 3A]. Urodynamic evaluation revealed high pressure voiding with poorly compliant bladder [Figure 3B]. She was catheterized and started on alpha blockers and anticholinergics following which she improved and her serum creatinine levels normalized. Patient was discharged on seventh post-operative day. Foley catheter and the stents were removed after 4 weeks. She was followed up with urine culture, blood culture, ultrasound and repeat uroflow. Her cultures were sterile and the upper urinary tracts were normal. She voided with a Qmax 30ml/sec and nil post void residual urine. Patient is on regular follow up and remains asymptomatic till date.

Discussion

Encapsulated collection of urine in the perinephric space is defined as urinoma [6]. Though commonly seen around the perinephric space, urinomas can also be seen in the retro peritoneum, peritoneal cavity, pleural cavity, and even in the mediastinum [7]. Urinoma usually occurs due to obstructive uropathy like calculi, pelvic tumors, congenital obstructive causes, prostatic enlargement and non-obstructive causes [8]. Neurogenic voiding dysfunction as a cause of bilateral spontaneous urinoma is rare. Urinomas have also been reported secondary to NSAID induced acute interstitial nephritis and membrano proliferative glomerulonephritis [9,10]. Urinomas secondary to neuro-vesical dysfunction are rarely reported. Only a few such cases were reported in the literature to our knowledge [11].
Various theories have been proposed for urinoma formation. Obstruction of the urinary tract leads to increased intrapelvic pressure, pyelo-sinus backflow with resultant rupture of the collecting system as a pop off mechanism leading to urinoma formation in the subcapsular or perirenal space [12,13]. Maitra et al reported a case of bilateral spontaneous urinoma in a patient with bladder outlet obstruction [14]. Fujita et al reported a case of Urinoma secondary to neurogenic bladder and Vesicoureteric reflux [15]. Our patient had high pressure voiding with poor bladder compliance resulting in bilateral spontaneous urinoma which is unusual. Contrast enhanced CT usually reveals hydrourerteronephrosis and contrast extravasation into the perinephric space. Our patient had an MRI done in view of deranged renal function. It is very imperative for the treating urologist to take a detailed history and perform a thorough clinical examination in such patients. A high index of clinical suspicion is also needed to identify such conditions at an earlier stage itself. Patient with neurogenic bladder dysfunction should be probed for any history of voiding difficulty or bowel disturbances, which might help in making early diagnosis.

**Conclusion**

Bilateral spontaneous urinomas, although rare, should be considered as one of the significant complications in patients with neuro-vesical dysfunction. This case report demonstrates the need for adequate history and appropriate imaging and urodynamic evaluation in patients with neurogenic high pressure voiding dysfunction in order to diagnose such rare conditions at an earlier stage.

**References**


