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PERCUTANEOUS DRAINAGE OF SPONTANEOUS RETROPERITONEAL URINOMA: A CASE REPORT

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ABSTRACT

An urinoma is defined as an encapsulated collection of extravasated urine in the perirenal or paraureteral space. Urinomas are usually either secondary obstructive or due to blunt or penetrating trauma leading to injuries of the collecting system and/or ureter. Reports of spontaneous perinephric urinomas are rare in the literature. We report spontaneous urinoma of unknown etiology in a 50-year-old male. Percutaneous drainage of the mass was performed with a pigtail catheter.

Key words: Urinoma, Retroperitoneum, Spontaneous.

SPONTAN RETROPERİTONEAL ÜRİNOMUN PERKÜTAN DRENAJI OLGU SUNUMU

ÖZ:

Ürünom, perirenal veya paraüreteral boşlukta, ekstravaze idrarın olusturduğu enkapsüle sıvı birikimi olarak tarif edilir. Ürünomlar genellikle obstrüksiyona sekonder veya toplayıcı sistem ve/veya üreterlerde yaralanmaya neden olan künt veya delici yaralanmalara sekonder gelisir. Spontan perinefrik ürünom olgusu literatürde nadirdir. Biz, 50 yasında etyolojisi bilinmeyen spontan bir ürünom olgusunu sunduk. Koleksiyonun perkutan drenajı bir pigtail katater yardımıyla yapıldı.

Anahtar Kelimeler: Ürinom, Retroperiton, Spontan.

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INTRODUCTION:

An urinoma is an encapsulated collection of chronically extravasated urine usually located in the perirenal space. It can rarely found in the retroperitoneal space, peritoneal cavity, pleural cavity, and even in the mediastinum.[1] Urinoma occurs mainly following trauma to the urinary tract. Obstructive uropathies, including posterior urethral valve, ureteral stones, and tumors of the ureter or bladder, also can cause urinoma.[2] Here, we report a case of spontaneous urinoma of unknown etiology.

CASE REPORT:

A 50-year-old male patient presented with increasing right abdominal pain lasting a week. His history was unremarkable except for chronic renal failure. His physical examination revealed right costovertebral tenderness. His right abdomen was asymmetrically swollen with a firm nontender mass. The laboratory evaluation demonstrated creatinine 5.7 mg/dl, urea 130 mg/dl, erythrocyte sedimentation rate 30 mm per hour, and leukocyte count 12,500 mm^3. Urinalysis showed microscopic hematuria. Plain abdominal radiography was normal. Abdominal ultrasound (USG) revealed right perinephric fluid collection and right hydronephrosis (Figure 1). Computerized tomography revealed a 25 x 14 cm, condense content, fluid collection probably originating from the right kidney, occupying the retroperitoneum and displacing the right kidney to the posterior. Computed tomography showed neither signs of urolithiasis nor ureteral obstruction nor any other pathologies i.e. tumor (Figure 2). A pigtail catheter was placed percutaneously into the right retroperitoneal collection with the guidance of USG and 3150 ml fluid was drained in

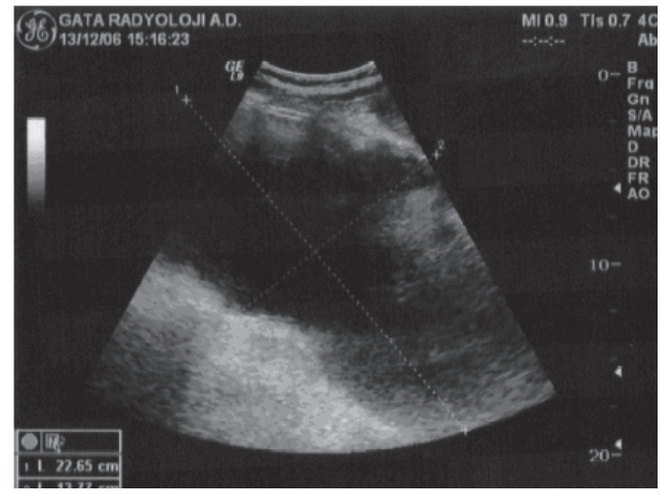

Figure 1: USG image of the urinoma

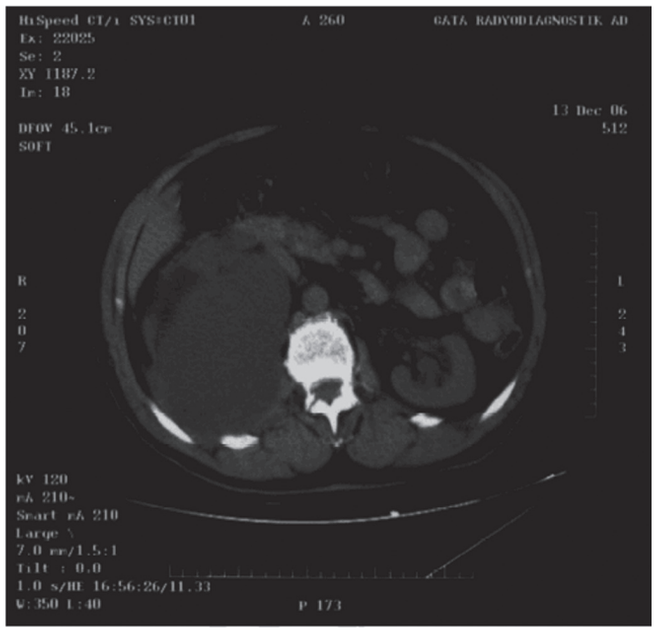

Figure 2: CT scan image of the urinoma

the first 24 h. The bladder was also catheterized. Biochemical analysis of the fluid revealed urine and so the collection was diagnosed as urinoma. No other aspiration was done after the first day of drainage. Voiding cystourethrography and serological evaluation of tuberculosis were also performed and both were reported as normal. USG revealed a 40 cc prostatic volume but no signs of lower urinary tract obstruction were detected. Urodynamics were normal. Finally, MR urography was performed and no signs of urinary tract extravasations were detected (Figure 3). Although the culture was negative, the patient was given oral prophylactic antibiotics for 1 week. Control USG was performed on the 7th day. Resolution of the collection was proved with USG and the drainage catheter was removed. The patient was discharged with no complaints. The 2-month follow-up period was unremarkable.

DISCUSSION:

Rupture of the collecting system, distal obstruction, and continued renal function are factors contributing to the formation of urinoma.[3] If the collecting systems become obstructed,

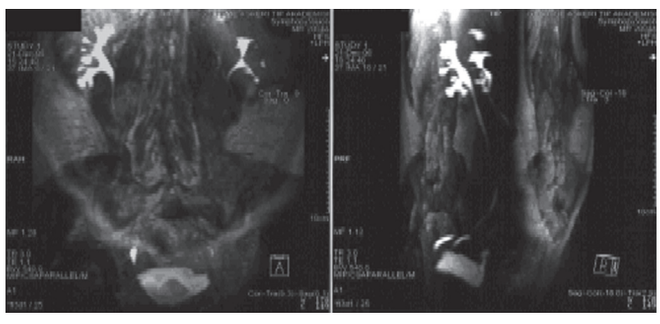

Figure 3: Urinary tract imaging with MR urography, showing no evidence of extravasation

the high backpressure provokes extravasation of the urine into the perinephric space via the rupture of a fornix.[2,4] Of the several hypotheses proposed,[5] the most convincing is that whenever intrapelvic pressure rises 35 to 40 cm H2O or greater, pyelosinus backflow occurs, leading to rupture of caliceal fornices. Protecting the kidney from further injury, urinomas occur to decompress the high-pressure system. Extravasated urine can be located extraperitoneally, intraperitoneally, or in both locations.[1,5] The extravasated urine causes lipolysis and an inflammatory and fibrotic reaction, which may result in the formation of a fibrous sac around the collected urine. Although urinomas occur mainly following trauma to the urinary tract, rarely they can be seen spontaneously (non-traumatic). In children it can be secondary to obstruction such as ureteropelvic or ureterovesical junction obstruction, posterior urethral valve, ureteral stone disease, and neurogenic bladder[1]. In adults, most cases are secondary to ureteral stone disease related ureteral obstruction. However, several malign or benign disorders leading to ureteral obstruction such as benign prostatic hyperplasia can cause spontaneous urinoma.[6]

Abdominal ultrasonography (USG) is the initial screening procedure. Therapeutic tap can be performed with the guidance of USG, along with placement of pigtail catheters in the most dependent point of urinoma. The location and the relationship to the kidney, ureter, and fascial planes can be better demonstrated on CT scans. In children, voiding cystourethrography is necessary to exclude vesicoureteral reflux and posterior urethral valve obstruction. Urodynamics is required in occasional cases, when no obvious cause is evident for urinoma.

MR urography is a more recent imaging concept in evaluating the urinary tract. Investigators have described the use of MR urography in various urologic abnormalities. Nolte-Ernsting et al. concluded in their study that this technique is a promising and accurate alternative to excretory urography for imaging the morphology and the excretory function of the urinary tract.[7] It is also recommended in patients with nephropathy when information about anatomic details of the pelvicaliceal systems, ureters and excretory function of the kidney is needed.[8]

Reports of spontaneous perinephric urinomas are rare in the literature.[1] Percutaneous drainage is the treatment of choice for this condition. In our case, we could not find an etiologic cause including trauma, neurogenic bladder, detrusor sphincter dyssynergia, ureteral calculus, or any obstructive pathology reported in the literature. In our case, we thought a spontaneously passed ureteral stone to be the cause of urinary extravasation, due to his right mild hydronephrosis and microscopic hematuria. We performed percutaneous drainage as the treatment of choice. Our patient had chronic renal failure and so we decided to perform MR urography to determine whether there was continuing extravasation. Subsequent urinary tract imaging with MR urography revealed no extravasation. Reso-

lution of the collection was proved with USG and the drainage catheter was removed.

As in our case, percutaneous drainage should be performed in such cases when no etiology is determined. In these patients, we recommend urinary tract imaging, and if no extravasation is detected the removal of the catheter and following up the patient with USG.

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