Tepecik Eğit. ve Araşt. Hast. Dergisi 2021;31(1):114-6
doi:10.5222/terh.2021.38233

# A Rare Case Report: Spontaneous Rupture of Renal Pelvis

## *Spontan Renal Pelvis Ruptürü: Nadir Görülen Bir Olgu Sunumu*

Olgu Sunumu
*Case Report*

**Mert Hamza Özbilen, Mehmet Yiğit Yalçın, Tufan Süelözgen, Yusuf Özlem İlbey**

**ABSTRACT**

*Renal urinary leak and associated urinoma usually develop secondary to renal trauma. Spontaneous rupture of the renal collecting system is not expected to occur in a healthy kidney. Here we present differential diagnosis and treatment of a case of spontaneous renal pelvic rupture.*

***Keywords:*** *Spontaneous, pelvis renalis, rupture, hydronephrosis*

**ÖZ**

*Renal idrar kaçağı ve buna bağlı ürinom genellikle renal travmalara ikincil gelişmektedir. Renal toplayıcı sistemin spontan rüptürünün sağlıklı böbrekte meydana gelmesI beklenmemektedir. Burada spontan renal pelvis ruptürü gelişen bir vakanın ayırıcı tanısı ve tedavisi sunulmuştur.*

***Anahtar kelimeler:*** *Spontan, pelvis renalis, ruptür, hidronefroz*

## INTRODUCTION

Renal urinary leak and associated urinoma usually develop secondary to renal trauma. Spontaneous rupture of the renal collecting system is not expected to occur in a healthy kidney. Generally, stone-related obstruction, hydronephrosis, tumor or infection may lead to spontaneous rupture of the renal collecting system [1,2]. Here we present differential diagnosis and treatment of a case of spontaneous renal pelvic rupture.

## CASE REPORT

A 61-year-old male patient was admitted to the emergency room with a left side ache that had been present for a few weeks and aggravated within the previous 3 days. It was learned from him that he had not chronic disease, trauma, relevant surgery. Renal obstruction or other pathologies in the kidney were not detected. The patient had no fever. On physical examination, abdomen and urogenital system examination were normal. His vital findings were stable. Some of his remarkable laboratory results were as follows:hemoglobin: 9.2 g/dl, white blood cell: 11600 K/uL, urea: 73 mg/dL and creatinine: 2.1 mg/dL. Complete urinalysis was normal. Intravenous contrast- enhanced abdominal computed tomography performed in emergency department showed a cystic lesion measuring 12x8 cm at its

**Received/Geliş:** 26.01.2019
**Accepted/Kabul:** 25.03.2019
**Published Online:** 29.04.2021

**Mert Hamza Özbilen**
Sağlık Bilimleri Üniversitesi,
Tepecik Eğitim ve Araştırma
Hastanesi, Üroloji Kliniği,
İzmir, Türkiye
merthozbilen@hotmail.com
**ORCİD:** 0000-0002-5733-6790

**M.Y. Yalçın** 0000-0001-9943-7453
**T. Süelözgen** 0000-0003-0790-3926
**Y.Ö. İlbey** 0000-0002-1483-9160
*Sağlık Bilimleri Üniversitesi,*
*Tepecik Eğitim ve Araştırma*
*Hastanesi, Üroloji Kliniği,*
*İzmir, Türkiye*

**Cite as:** Özbilen MH, Yalçın MY, Süelözgen T, İlbey YÖ. A Rare Case Of Report: Spontaneous Rupture Of Renal Pelvis. Tepecik Eğit. ve Araşt. Hast. Dergisi. 2021;31(1):114-6.

widest point with lobulated contour and extending to the posterior retroperitoneal area in relation to the left renal pelvis and evaluated as urinoma (Figure 1).

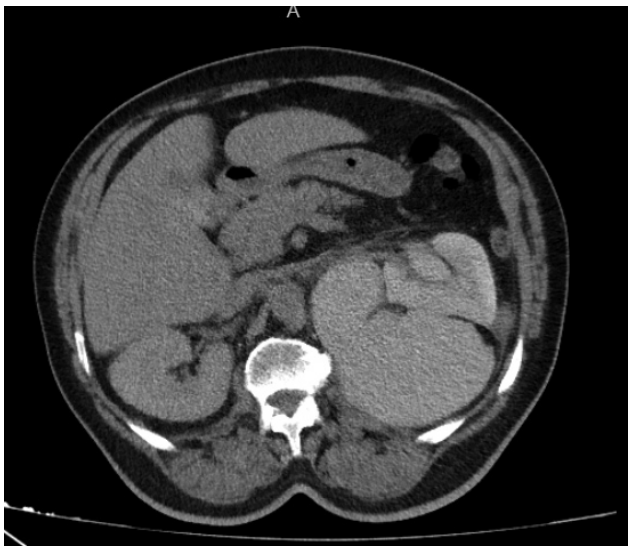

**Figure 1. A 12x8 cm sized urinoma extending to the retroperitoneal area in intravenous contrast-enhanced abdominal computed tomography.**

Left nephrostomy was inserted to drain the urinoma. Mild dilatation was observed in the left renal collecting system in antegrade contrast-enhanced pyelograms. The distal ureter was open with normal calibration. It was seen that the contrast material passed into the bladder. A 4.8F 28 cm JJ stent was placed over the guide wire. Since the creatinine levels of the patient were at the upper limit for a week, magnetic resonance imaging (MRI) was preferred as control imaging. On magnetic resonance imaging (Figure 2) taken 10 days after the procedure, it was seen that the urinoma was resolved. Ultrasonography of the control urinary system taken 15 days later revealed the presence of an irregularly cicumscribed hypoechoic area of about 5x4 mm in the parenchyma of the upper pole of the left kidney.

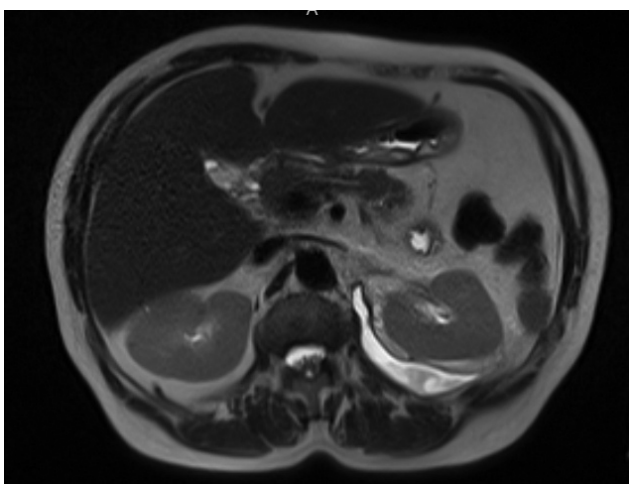

**Figure 2. Control magnetic resonance imaging after insertion of a left nephrostomy catheter, and antegrade JJ stent.**

Following the procedure, the patient was discharged with normal diuresis, urea and creatinine values.

## DISCUSSION

Rupture of the renal parenchyma or renal pelvis is usually secondary to an underlying kidney pathology. [1] The most common reasons among these pathologies are conditions that restrict the functions of the renal pelvis and hydronephrosis [3]. In addition, tumors, strictures and stones can be included in the etiology [4]. As in our case, spontaneous rupture of the renal pelvis without any underlying cause is quite rare. Renal pelvis rupture usually occurs at the ureteropelvic junction, known as the weakest area. [5] Increases in pelvic pressure can be compensated by calyces. This condition is not considered as a pathological event and does not leave permanent damage [6]. However, in a true rupture, urine leakage into the retroperitoneum is often observed secondary to ruptured ureteropelvic junction [7]. Although ultrasonography can show the presence of fluid in perirenal tissue as a diagnostic tool, it does not have sufficient specificity in the differential diagnosis of hematoma, urinoma or abscess. In this respect, contrast-enhanced computed tomography is a non-invasive imaging modality that can give us the most accurate information in the diagnosis of urinoma [8]. The management of the rupture may vary depending on the underlying cause. Usually, urinary leakage is prevented by placing a double-j stent or percutaneous nephrostomy. Urinoma should be followed up and drained when necessary without progressing to

abscess formation. Although open surgery is not frequently performed today, it should be considered as the last option in difficult cases [9]. In our case, the patient who developed spontaneous renal pelvis rupture without a predisposing factor was treated successfully with percutaneous nephrostomy and antegrade jj stent placement.

**Conflict of Interest:** There is no conflict of interest related to any person and/or institution.
**Informed Consent:** Informed consent was taken from the patient.

## REFERENCES


1. Caro DJ, Waldbarum RS. Spontaneous rupture of renal pelvis. Urology. 1976;8:410-2. [CrossRef]
2. McAleer IM, Kaplan GW, LoSasso BE. Congenital urinary tract anomalies in pediatric renal trauma patients. J Urol. 2002;168:1808-10. [CrossRef]
3. Bollack C, Masson JC, Doremieux J. Spontaneous ruptures of the upper urinary apparatus (4 cases). J Urol Nephrol. 1971;77:850-6.
4. Van Winter JT, Ogburn PL, Engen DE, Webb MJ. Spontaneous renal rupture during pregnancy. Mayo Clin Proc. 1991;66:179-82. [CrossRef]
5. Kulkarni PM, Mukha RP, Kekre NS. Ureteropelvic junction rupture - An unusual presentation of distal ureteric calculus. Urol J. 2014;10:1151-3.
6. Daughtridge TG. Ureteral compression device for excretory urography. AJR. 1965;95:431-8. [CrossRef]
7. Khan AU, Malek RS. Spontaneous urinary extravasation. J Urol. 1976;116:161-5. [CrossRef]
8. You JS, Chung YE, Lee JY, Lee HJ, Chung TN, Park YS, et al. The spontaneous rupture of the renal fornix caused by obstructive nephropathy. Emerg Med. 2012;43:488-9. [CrossRef]
9. Bogdanovic J, Djozic J, Idjuski S, Popov M, Sekulic V, Stojkov J. Successful surgical reconstruction of ruptured renal pelvis following blunt abdominal trauma. Urol Int. 2002;68:302-4. [CrossRef]