

SPONTANEOUS URINOMA SURGEON'S PITFALL - CASE REPORT

Martin Kajić¹, Miran Boras¹, Manuel Tipurić², Nikica Šutalo¹, Danijel Bevanda³ & Josip Mišković¹

¹Department of Surgery, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

²Department of Urology, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

³Department of Internal Medicine, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

received: 28.6.2021;

revised: 20.8.2021;

accepted: 4.9.2021

* * * * *

INTRODUCTION

Spontaneous urinoma is encapsulated collection of extravasated urine in the perirenal or paraureteral space (Adorisio et al. 2011). Spontaneous rupture of renal pelvis is a rare complication of urethral stone obstruction so it causes delays and problems in the diagnosis. Other common causes include trauma, obstructive uropathies and pelvic neoplasms (Gershman et al. 2011). Less often it is caused by pregnancy, abdominal aorta aneurysm and retroperitoneal fibrosis. Renal pelvis rupture with retroperitoneal urinoma is a potentially dangerous event because of the delayed diagnosis. Symptoms may vary from clinically occult to the symptoms of acute abdomen. Here, we report a case 66-year-old man with spontaneous renal pelvis rupture and perirenal urinoma caused by a calculus that was misdiagnosed as acute appendicitis.

CASE PRESENTATION

A 66-year-old man presented to our emergency department with flank pain in the right lower abdomen associated with nausea without vomiting that started previous day. His medical history was unremarkable. There was no history of trauma or previous similar attacks. Abdominal ultrasound, done in outer facility, showed no abnormalities, dilatation of urinary system, intraperitoneal fluids or aortoiliac aneurysms. His vital signs were stable. Physical examination revealed significant tenderness on the right lower abdomen suggestive of localized peritonitis. Abdomen was not distended and bowel sounds were normal. Patient had no fever. The plain abdominal radiograph was normal. Blood tests showed leukocytosis ($16.1 \times 10^9/L$) and elevated CRP serum level (11.6 mg/L). No elevation of serum creatinine or blood urea nitrogen was noted. Urinalysis showed 0-1 red blood cells and 0-2 white blood cells per HPF. Surgeon was consulted who suspected of acute appendicitis. Patient was admitted to the Department of Surgery and emergency surgery was performed. During appendectomy fluid in retroperitoneal space was observed. Peritoneal cavity also contained a small

free fluid amount. Fluid was evacuated and samples were sent to microbiology, cytology and biochemical analysis. Surgery completed with appendectomy and drainage of retroperitoneal space. Biochemical analysis of the fluid revealed urine and so the collection was diagnosed as urinoma. Abdominal CT with endovenous administration of contrast showed extravasation from renal pelvis and a perirenal fluid collection with 6 mm calculus at the right ureterovesical junction with ipsilateral mild hydroureteronephrosis (Figure 1. A-B). At this time patient was referred to the Department of Urology. The patient was managed by an endourological procedure and a double-J catheter was inserted. A follow-up CT urography performed 7 days later showed resorption of urinoma in the right perirenal space and calculus in right ureter (Figure 1. C-D). Postoperative time was unremarkable. Retroperitoneal drain was removed after 5 days. Patient was discharged after twelve days without any complications. After 4 weeks double-J catheter was removed and patient was scheduled for elective FURS lithotripsy.

DISCUSSION

Urinoma is defined as encapsulated collection of extravasated urine in the perirenal or paraureteral space (Adorisio et al. 2011). By its cause urinary extravasation is classified as traumatic and spontaneous. Spontaneous urinoma occurs when intraluminal pressure of the collecting urinary system is increased by an obstruction which is usually caused by urolithiasis, infection, malignancy and congenital abnormalities (Gershman et al. 2011). Most common cause of spontaneous urinoma is urolithiasis (Nagata et al. 1994).

Clinical presentation of urinoma is very unspecific such as abdominal pain, nausea, vomiting. Also physical examination most of the time reveals abdominal tenderness and signs of peritoneal irritation which often leads to misdiagnosis such as appendicitis, cholecystitis, rupture of the ovarian cyst etc. (Ross et al. 2003).

Imaging studies used to diagnose urinoma are ultrasonography, plain abdominal radiograph, intravenous urography, and contrast-enhanced abdominal CT.

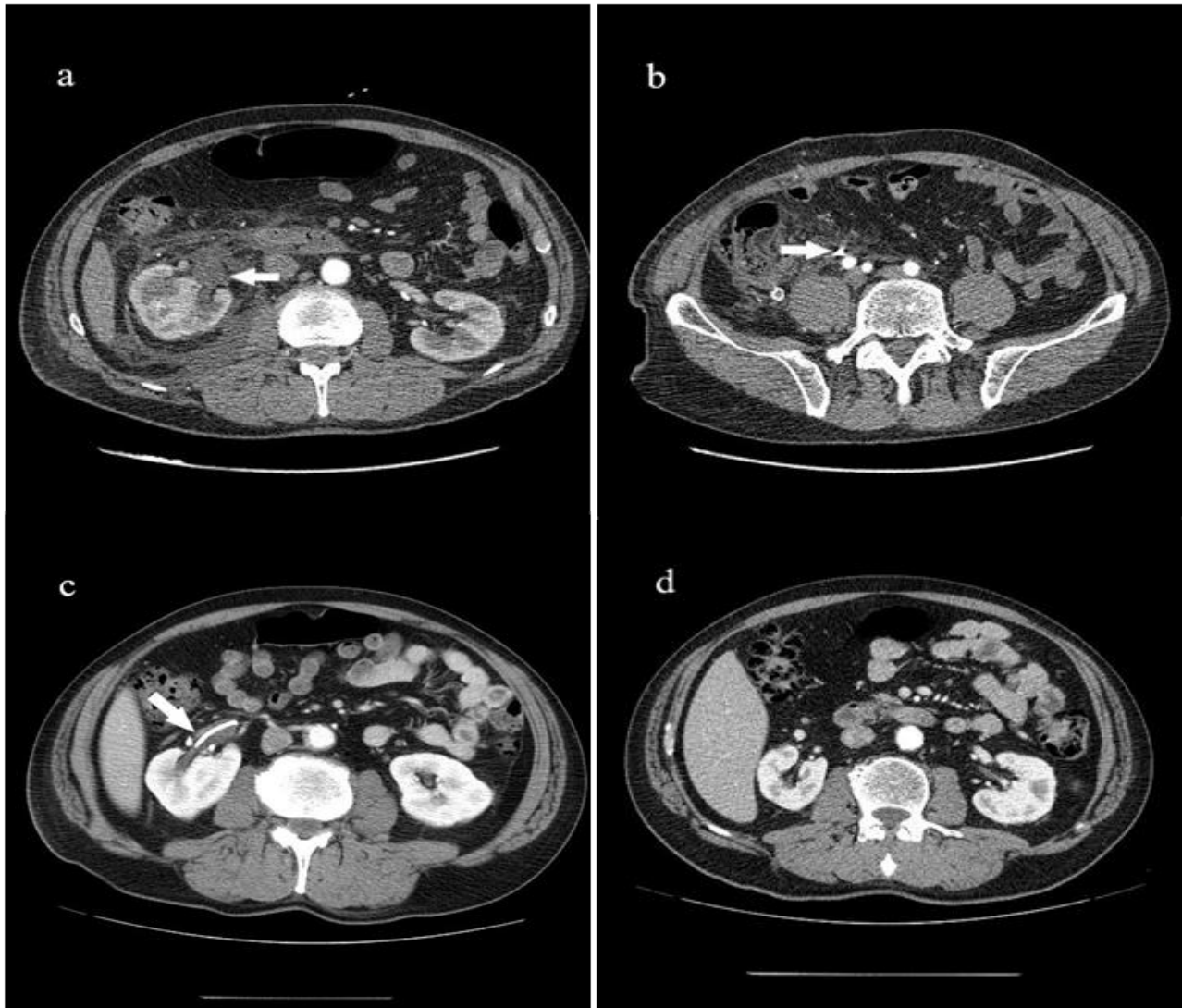


Figure 1. a) postoperative contrast MSCT of abdomen and pelvis reveals hydronephrosis over right kidney, free fluid accumulation over right perirenal space and inferior part of duodenum, b) total obstruction of right ureter with calculus, c) MSCTU of abdomen and pelvis reveals placement of a double-J ureteral stent, d) urinoma regression

Treatment of the urinoma depends on its cause and should be individualized for each case.

In our case a multi slice computed tomography (MSCT) scan of the abdomen and pelvis with contrast was obtained postoperatively. It identified extravasation of the contrast around right renal pelvis, urinoma and fluid accumulation over the right perirenal space, hydronephrosis of right kidney and complete obstruction of right ureter with a 6 mm large calculus at the level of the intersection with the iliac vessels.

The patient underwent placement of a double-J ureteral stent. Seven days after procedure the multi slice computed tomography urography (MSCTU) scan demonstrated significant urinoma regression, calculus were still visible in the middle third of the right renal collecting system. After 4 weeks double-J catheter was removed and patient was scheduled for elective FURS lithotripsy. The patient withstood the procedure well and was free of symptoms thereafter.

In the majority of the related literature we found that the management of urolithiasis with calyceal rupture is conservative with excellent results like in our case (Sallami et al. 2009).

CONCLUSION

Spontaneous calyceal rupture should always be considered in the differential diagnosis of a patient presenting with complex symptoms after renal colic. Symptoms will regress with conservative management. Diagnosis is suspected on ultrasonography, and confirmed by computed tomography. With a low pressure system and antibiotic treatment, the outcome is excellent. Endourologic treatment offers excellent results. Spontaneous rupture of the ureter should always be considered in the differential diagnosis of a patient presenting with complex symptoms after renal colic.

Acknowledgements: None.

Conflict of interest: None to declare.

Contribution of individual authors:

Šutalo Nikica & Mišković Josip: design of the study, literature searches and analyses, interpretation of data, manuscript writing.

Martin Kajić, Miran Boras, Manuel Tipurić & Danijel Bevanda: literature searches and analyses, manuscript writing.

References

1. Adorisio O, Silveri M, Colajacomo M, Bassani F, Rivo-secchi M: The impact of perinatal urinoma formation on renal function: our experience and review of the literature. *J Paediatr Child Health*. 2011; 47:217-22
2. Gershman B, Kulkarni N, Savani DV, Eisner BH: Causes of renal forniceal rupture. *BJU Int* 2011; 108:1909–12
3. Nagata Y, Kawakami T, Horiba M, K Suzuki, Hihara T: Urinary extravasation: report of five cases and review of the Japanese literature. *Acta Urol Jpn* 1994; 40: 21-5
4. Sallami S, Rhouma B, Rebai S, Gargouri M, Horchani A: Spontaneous rupture of the upper urinary tract caused by ureteral calculi: effectiveness of primary ureteroscopic treatment. *UroToday Int J* 2009: 5784-92
5. Titton R, Gervais D, Hahn P, Harisinghani M, Arellano R, Mueller P: *Urine Leaks and Urinomas: Diagnosis and Imaging-guided Intervention*, 2003. Available at: <https://pubs.rsna.org/doi/full/10.1148/rg.235035029>

Correspondence:

Assistant Professor Josip Miskovic, MD, PhD
Department of Surgery University Clinical Hospital Mostar
Bijeli Brijeg, 88 000 Mostar, Bosnia and Herzegovina
E-mail: josip.miskovic@mef.sum.ba