



## FAIT CLINIQUE / CASE REPORT

## Spontaneous rupture of the upper urinary tract without identified cause in an elderly man : successful conservative management in N'djamena, Chad.

*Rupture spontanée des voies urinaires supérieures sans cause identifiée chez un homme âgé : prise en charge conservatrice réussie à N'Djamena, au Tchad*

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### RÉSUMÉ

La rupture spontanée des voies urinaires hautes est une entité urologique rare, caractérisée par la présence d'une rupture à un endroit quelconque, sans lien avec une intervention chirurgicale, l'utilisation d'instruments ou un traumatisme. En raison de sa présentation clinique atypique, l'imagerie est la seule modalité diagnostique. L'attitude thérapeutique doit être dictée par la présentation clinique, l'état du patient et l'étiologie. La dérivation urinaire (néphrostomie percutanée ou cathéter urétéral double J) est le pilier de la prise en charge. Dans cet article, nous rapportons un cas de rupture spontanée des voies urinaires supérieures sans cause identifiée chez un homme âgé. Le traitement a été conservateur, avec une évolution favorable.

### ABSTRACT

Spontaneous rupture of the upper urinary tract is a rare urological entity, defined by the presence of a rupture at any site not related to surgery, instrumentation, or trauma. With an atypical clinical presentation, imaging is the only diagnostic modality. The therapeutic attitude must be dictated by the clinical presentation, the patient's condition, and the aetiology. Urinary diversion (percutaneous nephrostomy or double J ureteral catheter) is the mainstay of management. In this article, we report a case of spontaneous rupture of the upper urinary tract without an identified cause in an elderly man. Treatment was conservative, with an ultimately favourable outcome.



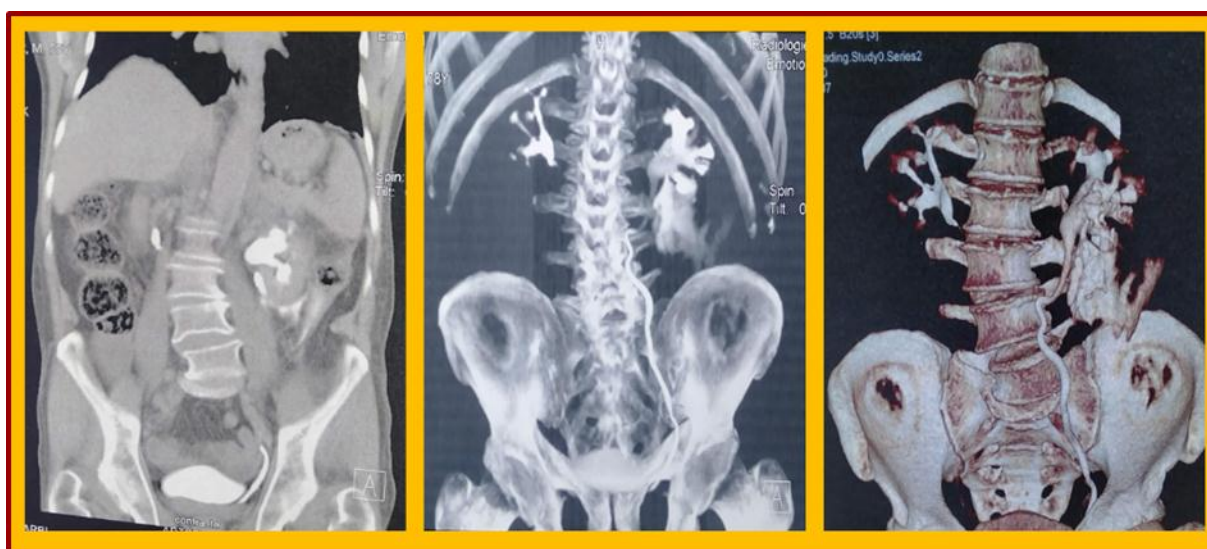
## 1. Introduction

Spontaneous rupture of the upper urinary tract is defined as any rupture of the urinary system that is not related to surgery, instrumentation, or trauma (1). It is a rare entity, the first case of which was reported by Mathé et al. (2) in 1927, during a diagnostic autopsy. The main cause is urinary calculus (3). Rupture can result in the formation of a urinoma, which can become infected and lead to potentially serious infectious complications. Management options are discussed on a case-by-case basis (4). In this article, we report a case of spontaneous rupture of the upper urinary tract without an identified

cause in an elderly man. Treatment was conservative, with an ultimately favourable outcome.

## 2. Observation

The patient was 75 years old, had no known history of any particular pathology, and came to the emergency department with pain in the left lower back that had been present for 4 hours. Upon questioning, the patient reported a sensation of lower back pain that had been evolving for about 2 weeks, without other associated signs. He reported no lower urinary tract problems, no fever, and no idea of passing a stone.



**Figure 1:** CT image injected with delayed time showing the rupture with extravasation of the contrast product in different sequences

Four hours before going to A&E, the patient noticed a worsening of lower back pain, which radiated to the external genitalia. At admission to A&E, the patient was conscious, with Performans status of 1, and was hemodynamically and respiratoryly stable, with a temperature of 37.1 ° C. Physical examination revealed tenderness of the left lumbar area with no other associated signs. No hypogastric pain. On rectal examination, the prostate was found to be uninflated, soft, and painless. Urgent laboratory tests revealed hyperleukocytosis of 13,000/mm<sup>3</sup> with a c-reactive protein of 85. Plasma creatinine was normal. Urine sample taken for bacteriological analysis (sterile culture). Ultrasound revealed dilation of the left calyces with no detectable obstruction and no post-void residue. Complementary scans (with injection) showed moderate dilatation of the pyelocaliceal cavities with evidence of

extravasation of the perirenal contrast medium from the lower border of the renal pelvis. There was also a fluid effusion in the left parieto-colic gutter (Figure 1).

After conditioning, the patient was admitted to the hospital. In addition to analgesics, ceftriaxone-based antibiotics were started. Strict clinic-physiological monitoring focused on general condition, fever, low back pain, and biological inflammatory syndrome. After 72 hours in the hospital, the patient showed clinical and biological improvement, without pain and normalization of the biological parameters. It was decided to discharge him, with the advice to seek urgent medical attention for any pain or fever in the lower back.

### 3. Discussion

Spontaneous rupture of the upper urinary tract is often the result of an obstruction somewhere in the urinary tract. This obstruction results in an impediment to flow, which can cause dilation of the upper urinary tract, leading to an increase in intraluminal pressure that can result in rupture. In the event of rupture, urine extravasates, forming a urinoma that could become infected and subsequently form an abscess (4). Rupture occurs when pressure exceeds a critical level reported between 20 and 75 mmHg. The fornix is the most common site of rupture, followed by the ureter (5). In addition to calculi, other etiologies such as prostatic hyperplasia, pregnancy, intravenous urography, and certain pelvic cancers have been reported by Jou et al. (3). A case of upper urinary tract rupture that complicates urinary retention has been reported in a patient with a neurological bladder (6). In our case, no cause was identified. None of the criteria for spontaneous rupture was reported.

The presentation of this entity is broad, ranging from mild flank pain symptoms to more severe acute abdominal symptoms resulting from extravasation of urine (1). Typically, lumbar pain is a sudden onset of pain on the affected side. If fever is present, it suggests an infected urinoma, an abscess, or chemical peritonitis. In rare cases, if the rupture of the collecting system is associated with a parenchymal tear, a lumbar mass may be palpable. This is due to the collection of urine and blood leaks (5). In our case, the patient reported left lumbar pain without other signs, which had been evolving for 4 hours prior to admission. The reduction in pain reported by the patient may explain the rupture, which reduces the hyperpressure in the excretory tract. Imaging is the only means of demonstrating the rupture of the upper excretory tract with extravasation of urine or urine formation (1, 2-5). CT is the best diagnostic modality. In the present case, ultrasound showed minimal dilation of the minimal cavities with no obstructions. The supplementary scan made the diagnosis, specifying dilatation, rupture area, and presence of fluid effusion in the left parietocolic gutter.

Urinary diversions are often performed using percutaneous nephrostomy or double J ureteral catheters, with excellent results. Conservative management is also possible and offers an alternative to surgery. The therapeutic approach should be dictated by the clinical presentation, the patient's condition, and the etiology (7). In view of the patient's age and clinical presentation (reduction of pain), our approach consisted of hospitalization, rest, introduction of analgesics and a cover course of antibiotics, and strict monitoring of

clinical and biological parameters. After 72 hours, the pain had completely disappeared and the patient's biology was fine. He was discharged with instructions to seek urgent medical attention if there was any back pain or fever.

If there is a delay in diagnosis or management, it can be complicated by a urinoma, which can become superinfected or become an abscess. This can lead to infectious complications (4).

### 4. Conclusion

Spontaneous rupture of the upper urinary tract is a rare entity. Although often caused by an identifiable upper urinary tract obstruction, it can also be idiopathic. It should be suspected in the presence of acute lower back pain, especially in elderly patients, and confirmed by CT. Treatment may be conservative or surgical. The conservative approach can be successfully adopted, underlining the importance of individualised assessment and careful management to ensure favorable outcomes.

### Conflit d'intérêt

Les auteurs déclarent n'avoir aucun conflit d'intérêt.

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