



## Case Report

# Acute Kidney Injury Revealed by Massive Spontaneous Renal Subcapsular Hematoma in a 58-Year-Old Male

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## Abstract

**Introduction:** A spontaneous kidney hematoma is an unusual pathology. **Observation:** A 58-year-old male with a history of high blood pressure was admitted into the emergency room at the National Hospital of Zinder (Niger) for pain in the right lumbar fossa with no trauma. The pain was accompanied by hematuria and a burning pain when urinating. The patient was in generally good health; blood pressure was 175/100 mmHg. A physical examination was unremarkable apart from tenderness in the right lumbar fossa. Further exploration showed increased serum creatinine (204  $\mu\text{mol/L}$ ), anemia (8.1 g/dL), elevated urine nitrites, and leucocyturia. C-reactive protein was 78 mg/L. He had a normal hemostatic history. Renal ultrasound showed a right peri-renal hematoma. A renal angioscanner showed a right peri-renal hematoma with no secretions from the kidney. **Treatment:** A lombotomy showed a large subcapsular hematoma that was compressing the kidney. After its removal, urine excretion was resumed. Serum creatinine levels normalized within 8 days after surgery. **Conclusion:** Imaging made this condition easy to diagnose: it avoided more invasive surgery and wrongly diagnosing a tumor.

**Keywords:** Spontaneous kidney hematoma; Kidney; Acute kidney injury; Lobotomy

## Introduction

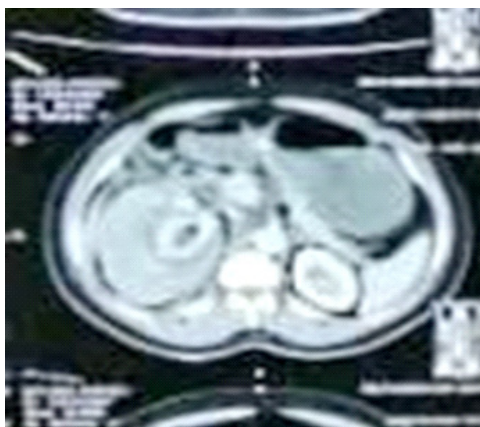
Wunderlich Syndrome (WS) is a rare condition characterized by acute onset of spontaneous, nontraumatic renal hemorrhage into the subcapsular and perirenal spaces; renal neoplasms are

the most common cause for WS, with angiomyolipoma being the most common benign neoplasm, whereas renal cell carcinoma is the most common malignant [1]. Spontaneous subcapsular renal hematoma without perirenal hemorrhage is not a common entity [2-4]. It could be related to tumor, pyelonephritis, uncontrolled hypertension, bleeding diathesis, and sometimes no clear aetiology is found [5-7]. Presurgery renal computed-tomography

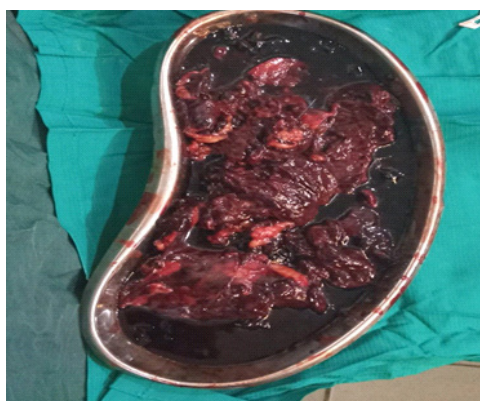
enables a positive diagnosis, often specifying the etiology. The therapeutic approach depends on the clinical course and especially on intraoperative discoveries. Herein, we report on an unusual case may be triggered by mild pyelonephritis.



**Figure 1:** Ultrasound centered on the right lumbar region in mode B in axial and longitudinal sections, showing the homogeneous right peri-renal hypo-echogenic formation corresponding to a hematoma.



**Figure 2:** Abdominal CT scan after injection of contrast medium. This axial section shows the right kidney surrounded by a hypodense formation, corresponding to the hematoma. Note the free appearance of the contours of the left kidney.



**Figure 3:** Evacuated subcapsular hematoma, which was sent for pathophysiological examination.

## Observation

A 58-year-old male presented at the National Hospital of Zinder (Niger) with sudden onset of pain and swelling in the area of the right kidney. Initially, the swelling was painless but later became painful associated with fever and postprandial vomiting. There was no history of a fall or trauma to the abdomen. He was a known hypertensive patient, diagnosed 15 years previously, and had been receiving nifedipine at 20 mg daily, which provided good blood-pressure control. He was not a diabetic, and had not been taking aspirin or any other anti-coagulant. Questioning the patient revealed the possibility, that macroscopic haematuria had developed 24 hours before admission. In addition, because he presented 3 days before with pain while urinating he was prescribed Ceftriaxone 2 g/day. There was no history of bleeding disorders in his family. A general physical examination revealed mild respiratory distress, he was pale, was dehydrated, and had mild bilateral pedal oedema. He was not febrile. His pulse rate was 108 beats per minute, blood pressure was 140/100 mmHg, and his respiratory rate was 28 cycles per minute. His abdomen was somewhat enlarged and moved with respiration. A large tender mass extended from the right hypochondrium to the lumbar region. Other body systems were essentially normal. Assessment of the right renal mass was made using the following investigations. Biological exploration showed an anomaly on a urinary strip (protein +, hematuria + ++, leukocyturia +, and nitrites +). The patient was already on antibiotics: i.e., ceftriaxone at 2 g per day. A cytobacteriological examination did not find any infection although leukocyte levels were elevated: the full blood count showed Hb 9.1 g/dL, WBC of 11600/mm<sup>3</sup>, neutrophils at 79%, lymphocytes at 13%, and a platelet count of 446 x 103/mm<sup>3</sup>. Serum creatinine was increased to 204 µmol/L and serum urea was 0.86 g/L. A blood ionogram was normal (Na= 143 mmol/L; K= 4.1 mmol/L). Clotting profiles were within normal ranges. The diuresis was normal. Any urinary infection may have been cleared by the antibiotic therapy, which was started 72 hours before the urine test. Abdominal ultrasound revealed a dense mass in the right subcapsular space containing 784 mL of thick fluid (Figure 1). Uroscanner with injection of iodinated contrast product showed a dense mass encasing the right kidney with no excretion of urine (Figure 2). Ceftriaxone 2 g per day) and was given a transfusion of globular concentrates. The patient was prepared for surgical exploration of the right renal area. Intra-operative findings were a large subcapsular hematoma that contained more than 500 mL of blood (Figure 3). The compressed kidney was preserved and there were no histological features suggestive of malignancy, although there were numerous leukocytes. The findings suggested probable pyelonephritis. He recovered well after surgery and had an uneventful recovery. The patient was discharged from hospital with a normal creatinine level (92 µmol/L) and a follow-up renal-ultrasound after 4 weeks showed normal-sized kidneys and no peri-renal mass.

## Discussion

We report the case of a patient aged 58 years, known to have hypertension, who presented with a spontaneous hematoma in the area of the right kidney. This type of hematoma is rare in such a context. From an etiological perspective, a renal tumor was a possibility, or a haemostasis disorder, or pyelonephritis. In our patient, pyelonephritis was probably the cause. This type of infection has been also described by Bajaj, et al. [6]. In our patient, the hematoma was compressing the urinary tract (as evidenced after injecting iodine contrast medium). After consulting with urologist colleagues, a decision to carry out surgery was made. During the intervention and after evacuation of the hematoma, the secretion of urine resumed. Thus, we were able to provide conservative treatment, unlike cases in the literature where a nephrectomy was performed [4]. Normal urinal function returned within the week after surgery, and a follow-up ultrasound showed no sign of the hematoma.

## Conclusion

A spontaneous hematoma is a rare clinical situation and can be a challenge to diagnose. We made this diagnosis using a renal angioscanner and thus avoided unnecessary extensive surgery.

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