

Visual Diagnosis in Emergency Medicine

AN UNUSUAL COMPLICATION OF URINARY STONE DISEASE: SPONTANEOUS PERIRENAL HEMATOMA

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INTRODUCTION

Although renal failure and sepsis are occasional complications of nephrolithiasis, a spontaneous perirenal hematoma is another possible consequence of nephrolithiasis. Early recognition of this occasional complication of renal stone disease can facilitate a favorable outcome. Herein, we illustrate the clinical and imaging findings of a patient with spontaneous perirenal hematoma due to urinary stone disease.

CASE REPORT

A 41-year-old paraplegic male patient presented to the emergency department with complaints of left-sided pain, fever, nausea, and bloody urine for 5 days. The patient has been diagnosed with multiple sclerosis 23 years previously, and had undergone clean intermittent catheterization for the last 15 years due to neurogenic bladder. Patient had no history of surgery or trauma. Patient presented to a different hospital with similar complaints 4 days previously. At that time, he was discharged with the diagnosis of urinary tract infection and antibiotic treatment was prescribed. Physical examination revealed his fever was 37.7°C and blood pressure was 110/75 mm Hg. The patient had left costovertebral angle tenderness. Laboratory analyses revealed elevated white blood count (12.500 k/ μ L; normal range 4.000–10.000 k/ μ L) and

C-reactive protein (22.2 mg/dL; normal range 0–5 mg/dL) levels. The urinalysis showed the presence of white and red blood cells in the urine. Other laboratory findings were within normal limits.

Abdominal ultrasonography (US) showed hydronephrosis in the left kidney and a well-circumscribed hypoechoic mass in the left perirenal area. For further evaluation, the patient underwent unenhanced and i.v. contrast-enhanced computed tomography (CT), and CT showed a urinary stone with a 1-cm diameter in the ureteropelvic junction. CT also showed a large subcapsular hematoma (6 × 7 cm) that compressed the left kidney posteriorly. No active bleeding was observed (Figure 1). The patient was diagnosed as having renal fornical rupture and perinephric hematoma as complications of the ureteral stone. A “double-J” catheter was placed for urinary drainage, and the patient was hospitalized. The patient’s clinical and laboratory findings showed complete resolution in 1 week and he was discharged. Subsequent US was performed 1 month after the treatment and showed persistent presence of the hematoma, without any difference in its size. CT showed a decrease in density of the hematoma, but there is no significant difference in size. An external drainage catheter was placed in the collection and aspirate was hemorrhagic. Abdominal US examination revealed that the hematoma was completely resolved 1 week after the drainage and catheter was removed.



Figure 1. (A) Axial unenhanced, (B) axial contrast-enhanced, and (C) contrast-enhanced coronal reformatted computed tomography images shows left hydronephrosis, an urinary calculi in ureteropelvic junction (arrow) and perirenal hematoma (dashed arrows) compressing the left kidney.

DISCUSSION

Spontaneous perirenal hematoma (SPH) is an unusual complication of nephro-ureterolithiasis (1). Because SPH is often associated with accompanying renal tumors (especially renal cell carcinoma or angiomyolipoma), the underlying pathological abnormalities of the kidney should be examined carefully (2). Although urinary tract infection, rheumatic diseases, and urinary tract calculi-induced SPH are rare, early diagnosis is important because SPH can cause life-threatening bleeding and hypovolemic shock. The CT scan is a successful method for the diagnosis of perirenal hematomas and for determining the underlying etiology, as in our case. CT can also guide treatment (1,3). In our case, no early surgical intervention was considered for hematoma evacuation because no active bleeding was present. The patient rapidly improved clinically after a double-J catheter placement and i.v. antibiotic therapy.

In conclusion, it should be kept in mind that perirenal hematoma may develop as a consequence of nephron-ureterolithiasis. Careful examination of paraplegic or quadriplegic patients will facilitate detection of this complication. CT is the successful and recommended method for diagnosis, determine the underlying cause and guidance for treatment.

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