

Complicated UTI – A Rare Cause of Spontaneous Perirenal Hematoma.

Umar Farouqi¹, Prashant K. Singh¹, Pawan Kesarwani², P.B. Singh³

¹Associate Consultant ,Department of Urology , Max Hospital , Patparganj , New Delhi.

²Senior Consultant ,Department of Urology , Max Hospital , Patparganj , New Delhi.

³Head of Department ,Department of Urology , Max Hospital , Patparganj , New Delhi.

ABSTRACT

Spontaneous renal hemorrhage is an unusual complication of urinary tract infection. A 56-year-old man, diabetic with single functional kidney was admitted with fever and abdominal pain for one day. He had pyuria and an obstructed renal moiety due to a lower ureteric stone. On evaluation, he was found to have a left perirenal hemorrhage. Drainage of the obstructed system was performed and hemorrhage was managed conservatively; in the postoperative period patient remained stable and was discharged. In conclusion, complicated urinary tract infection is a rare cause of the spontaneous perirenal hematoma and needs a high vigilance for diagnosis and management.

Keywords: Complicated urinary tract infection, Spontaneous perirenal hematoma.

INTRODUCTION

Spontaneous sub capsular hematoma (SPH) is a diagnostic dilemma. It is uncommon in absence trauma or bleeding diathesis. However it has been described in association with benign / malignant renal tumors, vascular diseases, renal infarction and (rarely) infection.^[1]

SPH has been reported as an unusual complication of emphysematous pyelonephritis, renal abscess and acute pyelonephritis.^[2-4]

We report a case of spontaneous perirenal hemorrhage associated with complicated urinary tract infection.

Name & Address of Corresponding Author

Prof PB Singh
HOD,
Department of Urology,
Max Hospital,
New Delhi, India.
E mail: pburology@gmail.com

CASE REPORT

A 56-year-old man was admitted because of fever and pain left flank for one day. He was a known case of diabetes, which was treated with oral hypoglycemic since five years. He was all right before this episode and had no significant past history of any previous surgery.

He was in his usual state of health, until one day before admission, he developed fever of 101⁰F, associated with rigors, chills and left flank pain. Antibiotics and antipyretics were prescribed at a local clinic, but they did not improve his symptoms. On presentation to emergency department, he appeared dehydrated and pale, his pulse was 126 / minute, and blood pressure 140/90, temperature was 100⁰ F. His examination revealed left costo-vertebral angle tenderness, guarded left upper abdomen with tenderness on deep palpation and bilateral basal

crepts. Neck examination revealed raised jugular venous pulse.

His white blood cell count was 17,000 with a shift to left , hemoglobin was 8.8 g/dl , blood urea nitrogen was 257 mg/dl, creatinine was 4.50 mg/dl, sugar 201 mg/dl , ABG : pH = 7.23, HCO₃=16.2 , coagulation studies : INR = 1.2 , urine examination; WBC = 15 -17 / HPF.

Abdominal USG at time of admission revealed a left perirenal collection with hydroureteronephrosis. In view of acidosis, fluid overload deranged renal functions and electrolytes nephrology opinion was sought. A decision to start hemodialysis was made. Post dialysis ABG improved and creatinine dropped to 3.4. Plain CT scan of abdomen was done which revealed an atrophic right kidney, swelling of the left kidney with a crescent shaped hyper dense lesion in the left perirenal area [Figure 1]; HU of the lesion was suggestive of a fresh hematoma, left lower ureter revealed a stone around 9 mm size with minimal hydroureteronephrosis [Figure 2]. Post dialysis his hemoglobin levels was 9.2 g/dl. One unit of packed cells was transfused and he was prepared for left ureteroscopy. Ureteroscopy was performed which showed a stone in the ureter , no attempt to break the stone was made in view of the infected system , a double J stent was placed in the left pelvi-calyceal system under fluoroscopic guidance.

Patient developed post obstructive diuresis in the postoperative period, which was managed with fluid and output monitoring. Serum creatinine showed a downward trend and reached a nadir value.

In view of the limited nature of sub capsular hematoma and a single functional kidney, the sub capsular hematoma was managed conservatively.

DISCUSSION

Spontaneous renal hematoma was first reported by Bonet in 1679.^[5] It was later on described by Wunderlich in 1856.^[6] Spontaneous renal hematoma can present with Lenk's triad consisting of acute

flank pain, tenderness and symptoms of internal bleeding various presentations have been described in literature.^[7]

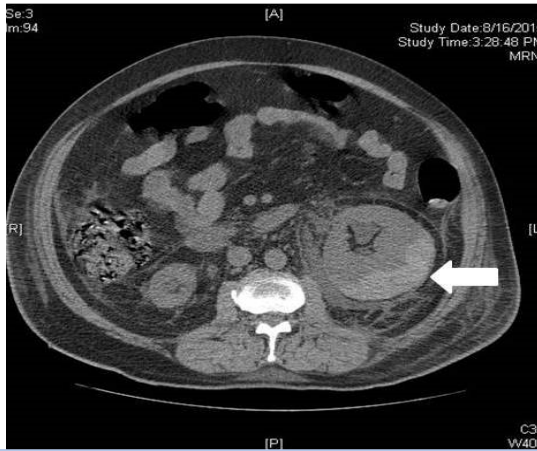


Figure 1: 56 year old male patient with complicated UTI. CT scan shows a hyperdense collection around the left kidney suggestive of perirenal hematoma (thick white arrow).

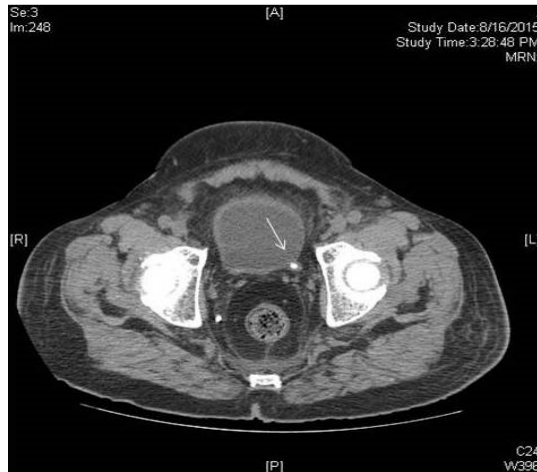


Figure 2: 56 year old male patient with complicated UTI. CT scan showing a thickened bladder wall with a stone present at the left vesicoureteric junction (white arrow)..

Complicated urinary tract infection is defined as an infection in a structurally or functionally abnormal urinary tract^[8] response to antibiotic therapy is not very satisfactory if the complicating factors are not dealt with.^[9] Disorders such as diabetes, sickle cell disease or immunosuppression also predispose to treatment failure as do more severe complications like renal or perirenal abscess, emphysematous pyelonephritis, hydronephrosis and papillary necrosis.^[10] However perirenal hemorrhage is an unusual complication even in these settings. A wide variety of disorders causes a spontaneous renal hematoma. Tumors are the most common, accounting for two thirds of cases in 165 cases reported in English literature between 1985 and 1999.^[11] In that series only 2 % of hemorrhages occurred in association with infection. Despite no definite risk factor of spontaneous hemorrhage was established in cases of renal infection, diabetes

mellitus was the most common underlying disease in a majority of reports including ours.^[2,11,12]

Definite diagnosis of spontaneous renal hemorrhage usually depends on imaging studies. Symptoms overlap with those of pyelonephritis.^[3] Although Lenk's triad is quite specific it is present only in very few cases.^[7] In our case the low hemoglobin/ haematocrit along with pain suggested hemorrhage. Ultrasound is an extension of the physical examination, is cheap and easily available.^[9] However CT is a better investigation for evaluating the nature and extent of the lesion. On unenhanced CT early hemorrhage has a higher attenuation value than the renal parenchyma, on contrast enhanced the opposite is true, the hemorrhage having a lower attenuation value than the normally enhancing renal parenchyma.^[13]

However, CT is only moderately sensitive in identifying an etiology at the time of acute hemorrhage. If no underlying cause is visible on CT, selective angiography may be helpful. Once the diagnosis of perirenal hemorrhage is established, most urologist choose nephrectomy as an approach because of the high likelihood of an underlying malignancy.^[14] Evidence of a concurrent complicated urinary tract infection, as our patient had, is also an indication for nephrectomy or at least surgical drainage of the obstructed system.^[15] In acute hemorrhage one option is to consider renal arteriography with embolization.^[12] This was relatively contraindicated in our patient, as he had only one functional kidney with azotaemia. In our patient drainage of the blocked pelvi-calyceal, system was done with DJ stenting, which resolved the infection. The peri-nephric hematoma responded to conservative treatment comprising blood transfusion, bed rest, antibiotics and antipyretics; there was no need for surgery and blood pressure remained controlled on follow up.

CONCLUSION

In summary, in a patient with complicated UTI, persistence of symptoms despite appropriate antibiotics or onset of more severe pain especially if accompanied with a decrease in haematocrit should prompt immediate studies to look for a renal hemorrhage. Treatment will depend on the patient's general condition, but delay in diagnosis is to be avoided.

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