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Case Report

Urinoma complicating uretric calculi

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ABSTRACT

Urinoma is a rare but significant complication of renal calculi and uretric calculi, characterized by the accumulation of urine outside the renal collecting system due to obstruction. This case report details a 62-year-old male who developed a urinoma secondary to obstruction caused by a large uretric stone. The report highlights the clinical presentation, diagnostic approach, management strategies, and the outcome.

Keywords: Renal calculi Uretric calculi, Urinoma

INTRODUCTION

Renal calculi and uretric stones, are a common urological condition that can lead to various complications, including obstructive uropathy, infection, and urinoma formation. A urinoma occurs when urine leaks from the renal collecting system into the surrounding tissue due to a disruption in the normal flow of urine.[1] Urinomas can also be iatrogenic or traumatic.[2] This case report discusses the development of a urinoma following uretric calculus-related obstruction, emphasizing the importance of timely diagnosis and management to prevent severe complications.

CASE REPORT

Patient information

Age: 62 years, Gender: Male, Medical History: The patient has a history of recurrent renal calculi and was a known case of hypertension.

Presenting complaint

The patient presented to the emergency department with severe right flank pain and swelling, nausea, vomiting, and intermittent fever. He reported a recent history of passing small stones and described a worsening of his symptoms over the past week.

Clinical examination

Upon physical examination, the patient was febrile with a temperature of 101.5°F (38.6°C). Tenderness and fullness were noted in the right flank and lower abdomen, but there was no evidence of external injury or signs of acute abdomen. The patient exhibited signs of dehydration and discomfort.

INVESTIGATIONS

Imaging studies

Ultrasound

Confirmed the presence of a large collection. The ultrasound showed the hydronephrosis which was moderate, with dilation of the renal pelvis and calyces.

CT abdomen and pelvis

A contrast enhanced CT scan revealed a multiloculated collection in the region of right psoas muscle and communicating large collection measuring 6.4

(Transverse) 11.8 (Antero-posterior) 12.8 (Cranio-caudal) cm, extending from subhepatic space to right iliac fossa. Bilateral nephrolithiasis and hydronephrosis with right ureteric calculi were noted.

Figure 1: CECT Abdomen showing urinoma (blue arrow).

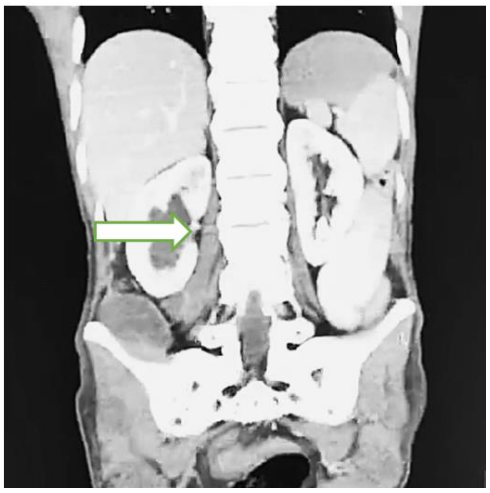

Figure 2. CECT Abdomen showing hydronephrosis (white arrow).

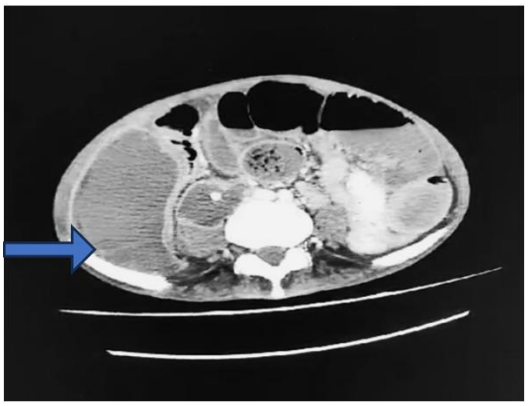

Figure 3: CECT showing large urinoma and uretric calculi.

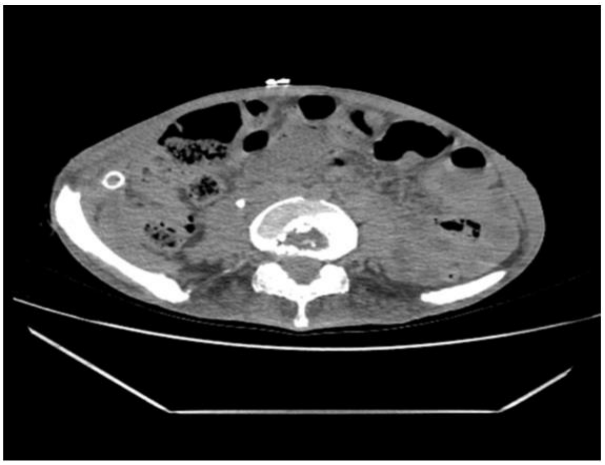

Figure 4: Complete resolution of urinoma follwing drain insertion and uretric calculi.

Laboratory tests

Urinalysis: Positive for hematuria and leukocytes, indicating the presence of blood and possible infection in the urine.

Serum creatinine: Elevated at 2.1 mg/dl, suggesting compromised renal function.

Diagnosis

Based on the imaging findings and clinical presentation, the patient was diagnosed with a urinoma secondary to renal obstruction caused by a large renal calculus.

Differential diagnosis: Psoas Abscess, acute appendicitis/burst appendix with abscess formation.[3]

Management

Initial management: The patient was started on intravenous antibiotics to manage a suspected urinary tract infection. Broad-spectrum antibiotics were chosen to cover a range of potential pathogens. Pain management was provided with intravenous analgesics, and hydration was initiated to support renal function and promote urine flow. A 32 French ADK was inserted under USG guidance in the collection to drain it, around 2 litre of frank pus came in the bag over first 24 hours and urine mixed with pus thereafter. Pus was sent for culture sensitivity.

Definitive treatment

Cystoscopy: It revealed a log segment uretheral stricture and 2 bladder calculi which were retrieved and 16 French Foley's catheter was inserted. Guidewire was passed into right urethera but it could not be negotiated beyond the stone. Hence, Double-J stenting could not be done.

Percutaneous nephrostomy: To relieve the right sided dilated pelvicalyceal system, percutaneous nephrostomy (PCN) tube was inserted.

Follow-up and monitoring

The patient's condition was closely monitored with drain outputs from the ADK, PCN and foley's catheter. The drain was removed on 10th day when there was less than 10 cc serous output, for 2 consecutive days. PCN tube was removed one month later after restoring normal outflow. The patient was advised on dietary modifications to prevent future stone formation, including increased fluid intake and dietary changes to reduce calcium and oxalate levels.

Outcome

The patient's condition improved significantly following the interventions. His flank pain and fever resolved, and follow-up imaging confirmed the resolution of the urinoma. Serum creatinine levels normalized, indicating restored renal function. The patient was discharged with instructions on maintaining adequate hydration, dietary adjustments, and regular follow-up appointments to monitor his renal health.

DISCUSSION

Urinomas are a significant complication of renal calculi, typically arising due to obstruction of the urinary tract. The obstruction causes elevated intrarenal pressure, leading to leakage of urine into the perirenal space. This case highlights the importance of timely diagnosis and management of urinomas to prevent further complications such as retroperitoneal abscess formation or progressive renal damage.[4,5]

Imaging plays a crucial role in the diagnosis of urinomas, as it allows for the visualization of both the obstruction and the associated fluid collection. CT imaging is particularly useful in identifying the size and extent of the urinoma and the presence of renal stones, while ultrasound can confirm the diagnosis and monitor changes over time.[6]

Management typically involves relieving the obstruction, which may require interventions such as ureteral stenting or stone removal. If collection becomes purulent, it needs to be drained. Antibiotic therapy is important to address any associated infection. The choice of treatment depends on the severity of the obstruction, the presence of infection, and the patient's overall condition. Prevention of recurrent stone formation involves lifestyle and dietary changes. Patients with a history of renal calculi should be educated on the importance of hydration and dietary modifications to reduce the risk of future stones.

CONCLUSION

This case underscores the importance of recognizing and managing urinomas effectively, particularly when they arise from complications of renal and uretric calculi. Prompt intervention to relieve obstruction and address associated complications is crucial for a positive outcome. Regular follow-up and preventive measures are essential to avoid recurrence and maintain optimal renal health.

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