



CASE REPORT: AN UNUSUAL CAUSE OF RENAL COLIC

Urology

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ABSTRACT

A 58 year old diabetic woman presented with right sided renal colic and dysuria for one week. She had no prior history of haematuria. No past medical history of hypertension, ischemic heart disease, Nephropathies or NSAID use. Laboratory investigations revealed a total white count was elevated to 11.400 cells/cumm, USG abdomen showed mild right sided hydronephrosis secondary to right distal ureteric calculus obstruction.

KEYWORDS

Diabetes, Renal Papillary Necrosis, Renal Colic, Obstruction, CECT scan

INTRODUCTION:

Renal Papillary Necrosis (RPN) is a kidney damage characterized by coagulative necrosis of the medullary pyramids and papillae^[1]. It is a rare disease entity brought on by factors such as long standing Urinary tract infection, Diabetes mellitus, Analgesic abuse, Sickle cell nephropathies, Tuberculosis and many more. In many patients it is usually multifactorial in origin.^[2] It causes necrosis, detachment, and expulsion of the papilla into the urine, which leads to ureteric obstruction presenting with renal colic. Radiological Imaging offers early diagnosis and can guide prompt treatment of papillary necrosis and can minimize a decline in renal function.^[3]

The study reported a diabetic patient with renal colic suspected to have a calculus, later found to be due to papillary necrosis of kidney.

Case Presentation:

A 58 year old woman presented with a one week history of right loin pain and burning micturition. She had no history of fever, haematuria, nausea or vomiting, tissue pieces passing in the urine. History of poorly controlled Type 2 diabetes mellitus for 5 years on regular treatment. No past medical history of Hypertension, nephropathies or Ischemic heart disease [IHD]. Surgical history of hysterectomy done 15 years ago. No relevant family history.

Clinical Findings:

On examination, the patient vitals observed were Heart Rate- 88, BP 124/86, Spo2- 98%

1. On abdominal examination:

Inspection- Hysterectomy scar seen in the lower abdomen. No bruises, Bleeding, Injuries or Trauma.

Palpation- right loin tenderness was present. No guarding or rigidity. No palpable masses.

2. Laboratory Investigations:

Elevated white blood count of 11,400 cells/cumm with neutrophils of 77%, HB - 10.6 gm/dl, CRP-16.5mg/l. Urine analysis appeared to be within normal range. Normal KFT.

3. Ultrasonography of the abdomen:

Kidneys: The right pelvicalyceal system and ureter are dilated.

A calculus of 6mm size seen in the right distal ureter 2 cm above the right Vesico Urteric Junction [VUJ]. Left pelvicalyceal system is compact.

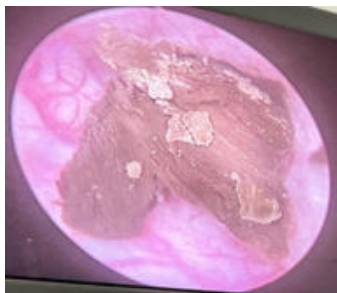


Fig1-Renal Papillary Necrosis

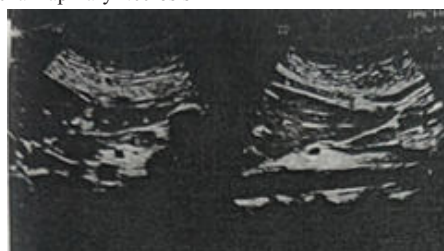


Fig2: USG shows calculus

Impression: Mild right sided hydronephrosis secondary to right distal ureteric calculus obstruction.

4. CECT Abdomen:

Findings in favour of acute right pyelonephritis with perinephric collections.

Soft tissue density focus with soft calcification in the right distal ureter just proximal to Vesico Urteric Junction [VUJ] causing moderate hydroureteronephrosis



Fig3: CECT Abdomen.

Imaging features are likely to represent sloughed papilla with soft calcifications causing distal ureteric obstruction.

Treatment:

On account of severe loin pain and raised white blood cell count, Paracetamol infusion was started along with intravenous antibiotics. Initial blood investigations were sent and the patient was taken up for cystoscopy which confirmed an inflamed bladder mucosa with cystitis changes. This was followed by 6F ureteroscopy procedure which confirmed a calcified soft tissue mass appearing brownish in colour in the right distal ureter. The soft tissue mass was gently removed using forceps and was sent for histology. The rest of the ureter was normal. A 6 French double J stent was inserted. Histology report confirmed the mass to be consisting of necrotic fragments of papilla accompanied with inflammatory exudates.

DISCUSSION:

The lack of specific symptoms during the early stages, makes diagnosis challenging. Approximately 30% of all cases of RPN occur in the setting of diabetes mellitus. The relationship of RPN with diabetic microangiopathy could be demonstrated either in vivo or in an autopsy series.^[4] Regardless the involved mechanism, the end result is reduced prostaglandin production, leading to decreased vascular perfusion, vasoconstriction and eventually ischemic necrosis.^[5]

The patient in the present case had diabetes mellitus for five years. It is known that the incidence of RPN is much higher when diabetic patients experience acute pyelonephritis. This patient's negative urine culture indicated, however that pyelonephritis was unlikely. There was no microhematuria in urine microscopic examination. Considering these findings along with the absence of any history of analgesic abuse or sickle cell anaemia, diabetes mellitus itself seemed to be the most likely cause of RPN in this patient.^[6]

Filling defects within the renal pelvis and ureter may represent sloughed papilla. Many signs have been described that detail the appearance of papillary necrosis, these include the "lobster claw" and "goblet" signs which correspond to contrast agent extending around a necrotic papilla, and the "ball-on-tee" sign which corresponds to extracalyceal contrast agent from a sloughed papilla^[7]

The patient was advised on the consequences of poorly controlled glycemic indices leading to life threatening outcomes and for regular follow up to prevent further worsening of this condition.

CONCLUSION:

The clinical presentation of renal papillary necrosis often mimics other renal pathologies leading to a misdiagnosis. This case report signifies how papillary necrosis of the kidney can be mistaken to a renal calculus and the importance of doing a CT imaging for an early diagnosis.

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