Abstract:
Urothelial tumour of the renal pelvis presenting as large hydrenephrosis is uncommon. Clinical suspicion of urothelial carcinoma does not arise in the absence of haematuria. This case highlights the pitfalls of standard investigations, which might miss the diagnosis. 67-year-old man presented with mass and dull aching pain over right upper abdomen. Laboratory investigations were within normal limits. Ultrasound showed dilated renal pelvis with a stone. IVU showed non visualisation of right kidney with a stone in the pelvis. CECT showed non-functioning right kidney with gross hydrenephrosis and a stone of size 2.1x1.8 cm in the renal pelvis. Right PCN was done and initially 1.2 litre of brown coloured urine drained, which progressively decreased to less than 30 mL per day. Right nephrectomy was done. Specimen revealed a stone along with a growth in the renal pelvis. HPE report of the growth was infiltrating urothelial carcinoma with glandular differentiation. During the postoperative period, cystoscopy was done to exclude urothelial tumour of the bladder. Subsequently remaining right ureter along with a cuff of bladder was removed. Specimen showed growth involving the lower part of ureter. HPE of the ureter showed infiltrating urothelial carcinoma. Patient currently is on followup. In this case a preoperative diagnosis of pelvic urothelial tumour was neither suspected nor confirmed by investigations. This case is presented for its rarity and to emphasise the need for high degree of suspicion to further investigate non-functioning kidneys to detect underlying urothelial carcinoma. 

Keyword: hydronephrosis, urothelial carcinoma

Introduction:
Urothelial tumour of the renal pelvis presenting as large hydrenephrosis is less common. Clinical suspicion of urothelial carcinoma does not arise in the absence of haematuria. This case highlights the pitfalls of standard investigations, which might miss the diagnosis.
Case History:
67-year-old gentleman presented with mass and dull aching pain over right upper abdomen for past 4 months. He noted a mass at site of pain for past 3 months which was progressively enlarging. Examination revealed a mass of size about 20 x 15 cm palpable in Right Hypochondrium and lumbar region. The mass was bimanually palpable, had smooth surface, was firm in consistency and not tender. His haemoglobin was 11.2 mg/dL. Renal function tests were within normal limits. Urinalysis was normal.
Urine culture had no growth of microorganisms. Ultrasound showed a large dilated renal pelvis with a stone. Intravenous urogram showed non visualisation of right kidney with a stone in the renal pelvis. CECT showed non-functioning right kidney with gross hydronephrosis and a stone of size 2.1x1.8 cm in the renal pelvis. Provisional diagnosis of Pelviureteric junction obstruction with renal pelvic stone was made.

Ultrasonogram showing gross hydronephrosis and a calculi

CECT of the same patient showing hydronephrosis and a calculi

CECT of the same patient (different level)

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During the postoperative period, cystoscopy was done to exclude urothelial tumour of the bladder. Subsequently remaining right ureter along with a cuff of bladder was removed. Specimen showed growth involving the lower part of ureter. HPE of the ureter showed infiltrating urothelial carcinoma. Patient currently is on followup.
Specimen of nephrectomy showing papillary growth in the collecting system

Ureterectomy specimen showing infiltrating growth

Discussion:
Upper urinary tract Transitional cell carcinoma comprises 5-7% of all renal tumors. The most common clinical presentation is gross or microscopic hematuria. (>75%). Presentation as a lumbar mass is noted in less than 10%. Primary urothelial tumour of upper tract in a non-functioning kidney is relatively uncommon and difficult to diagnose. Approximately 10% of cases will have obstruction and non-visualisation of the collecting system. The difficulty in diagnosis is compounded in the absence of haematuria. The radiologic evaluation is therefore critical in initial detection. In the recent years intra venous urography is primarily replaced by computed tomography. However, detection of small lesions by CT or MRI is difficult as it may be lost in volume averaging. McCoy et al. in his study reported that CT detected only 50% (17/34) of these tumors. The results of a report by Scolieri et al. were also disappointing. Those authors found that CT was not useful in diagnosing upper tract urothelial tumors. CT did not identify 27% (10/37) of surgically proven urinary tract tumors. In that study, neoplasms in the renal pelvis (n = 1) and the ureter (n = 9) were not detected. The availability of MultiDetector CT enhances the detection rate to a modest .89%. Although MDCT urography is a promising technique, imaging problems are encountered. Not all urothelial tumors will be identified. Three such neoplasms were missed even when analysed retrospectively in a classical series reported by Elaine M. Caoili et al. in 2005. These studies indicate the limitations of standard investigation in identifying upper tract urothelial tumours. In this case absence of haematuria or any other urological symptoms and essential urinalysis did not arise suspicion of TCC. Standard imaging could not identify the growth preoperatively. Hence it is prudent to cut open the specimen on table, in any case of nephrectomy, thereby the decision of ureterectomy could be made in the same sitting.

References
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