

Squamous Cell Carcinoma of Renal Pelvis: Can Calculi Be Life Threatening?

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Dear Sir

Primary squamous cell carcinoma (SCC) of renal pelvis has a variable incidence of about 0.5-15% of all urothelial cancers.^[1-4] Risk factors are renal calculi, infection, endogenous and exogenous chemicals, hormonal imbalance, radiotherapy and vitamin A deficiency.^[5] We report a case of primary SCC of left renal pelvis.

A 40-year old male presented with dull left sided flank pain, fever and hematuria. Urine examination showed red colored urine. There was 2+ proteinuria. Microscopy revealed 15-20 RBCs/hpf and 5-7 pus cells/hpf. Kidney function tests revealed a serum creatinine level of 0.97mg/dl and blood urea levels of 21.82 mg/dl. There was a past history of left pyelolithotomy about 7 years back.

CECT KUB showed enlarged left hydronephrotic kidney measuring 21cm(longitudinal) showing heterogeneously enhancing lesion with non-enhancing hypodense areas measuring 8x7.3x8.2cm (AP X TR X CC) (Fig. 1) Lesion was seen extending up to left proximal ureter. Multiple calculi in pelvicalyceal system were noted, largest measuring 5.5mm.

Left sided nephrectomy was performed, and specimen of already cut open left radical nephrectomy measuring 16x3x8cm with dilated pelvicalyceal system was received in the histopathology lab. Pelvis showed a grey white friable tumor with areas of necrosis measuring 10x9x6cm. Focal capsular breach was noted with perinephric fat involvement.

Histopathology examination showed moderately differentiated squamous cell carcinoma of left renal pelvis involving parenchyma, breaching capsule and extending into the perinephric fat (Fig. 2&3). Sections from the ureter also showed deposits of the same tumor. All lymph nodes dissected were free of tumor.

A final diagnosis of moderately differentiated squamous cell carcinoma of left renal pelvis, stage pT4N0MX was given. The patient refused adjuvant chemotherapy and radiotherapy and was discharged on 6th post-operative day. On follow up patient was found to have metastasis in liver.

Primary SCC of renal pelvis constitute only about 0.7-7% of all primary malignant tumors of the renal pelvis.^[6] A female sex predilection is seen with most of the patients being in the age group between 50-70 years.^[7]

A diagnosis of primary squamous cell carcinoma of renal pelvis was made in our case, only after extensive sampling to exclude any urothelial component, and the tumor showed extensive infiltration into the renal parenchyma. The closest differential diagnosis is urothelial carcinoma with squamous differentiation.

The major etiological factors are history of associated renal calculi and infections.^[5] The metaplastic pathophysiology of the SCC developing in renal pelvis remains debatable, as some studies have also shown the occurrence in absence of etiological factors.^[4] In our case, the patient had renal calculi with a past history of pyelolithotomy, thus reiterating the importance of this etiological agent, which might have led to metaplasia, which subsequently must have proceeded to squamous cell carcinoma.

Surgery is the mainstay of treatment with adjuvant chemotherapy offering only a marginal relief. Primary SCC of renal pelvis are associated with a very poor prognosis, with presentation at advanced stages, and very few patients surviving for 5 years.^[4,8]

Our patient, after initial surgery, refused for any adjuvant therapy and has presently developed extensive metastasis in liver.

To concluded, long standing, large renal calculi are associated in the etiology of these tumors. These tumors are aggressive, often presenting at late stages and offer a dismal prognosis. Thus, history of long standing calculi is important while diagnosing these tumors. Also, even non-obstructive calculi should be treated promptly so as to reduce the risk of progressing to tumor. Surgery being the mainstay mode of treatment in these tumors, can offer partial relief to the patient, provided, the disease is localized, but as most of the cases present at an advanced stage, treatment options offer less benefit to the patient.



Fig. 1: CECT showing enlarged left kidney with heterogenous lesion.

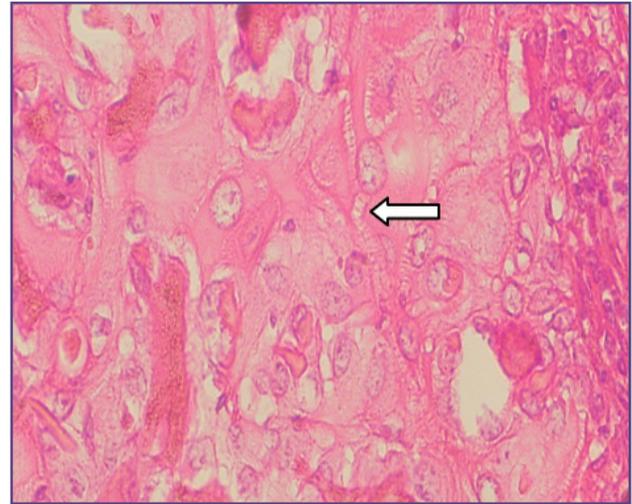


Fig. 2: Tumour cells showing intercellular bridges (arrow). (H & E, 400X).

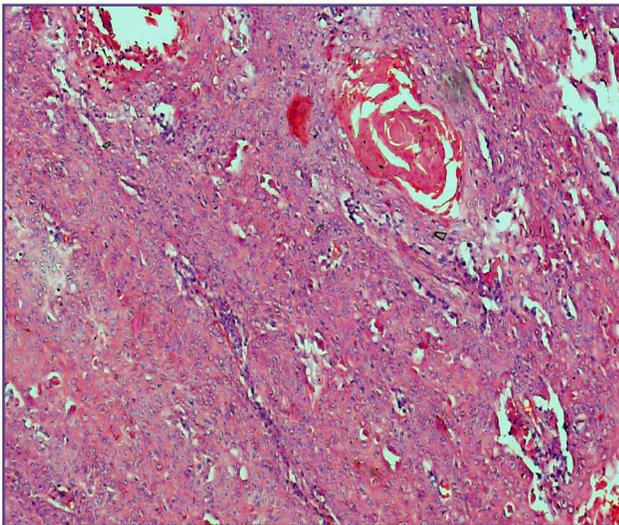


Fig. 3: Tumor arranged in sheets showing moderately differentiated tumor cells with a focus of squamous pearl formation(arrow). (H&E, 100X).

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