Case report

Squamous Cell Carcinoma of Renal Pelvis: A Case Report

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Abstract
Squamous cell carcinoma of the urinary tract is a very rarely encountered tumor. It is more frequently reported in the urinary bladder and male urethra than in renal pelvis. Here we present a case with a 63 years old lady with histological diagnosis of renal squamous cell carcinoma located in the upper calyceal system associated with nephrolithiasis in pelviureteral junction.

Key Words
kidney, nephrolithiasis, squamous cell carcinoma

Introduction
Squamous cell carcinoma (SCC) of renal pelvis is rare and associated with squamous metaplasia, renal calculi, and pyelonephritis. Grossly tumor is large, necrotic and ulcerated.1

Case Report
A 63 years old lady presented with intermittent mild right flank pain and weight loss for last three months and recent history of fever with burning micturation. Examination revealed a palpable mass on upper right quadrant of abdomen. Sonography revealed right pyonephrosis and nephrolithiasis with pelviureteral junction obstruction and consequently a right nephroureterectomy was performed. About 500ml of pus was drained peroperatively. The specimen was sent for histopathological reporting. Grossly the kidney measured 15x6x6cm and ureter 11x0.5cm. Cut section showed 2 solid masses in the upper calyceal area encroaching the renal pelvis measuring 6x3cm and 5x2cm with grayish, white granular appearance and focal area of necrosis. Remaining calyces were cystically dilated.

Microscopically the sections showed atypical cells in sheets and nests infiltrating the normal parenchyma. Individual cells are pleomorphic with hyperchromatic nuclei having coarse clumped chromatin and irregular nuclear border. Cytoplasm is eosinophilic and moderate in amount. Keratin pearls, 2-3 mitotic figures/3-4hpf and necrosis are seen. Perineuronal invasion seen. Invasion to vessels, perinephric fat or ureter not seen. There is presence of renal tubular dilatation, thyroidization and lymphocytic infiltration that is consistent with pyelonephritis. However, there is no evidence of urothelial component. So it is diagnosed as well differentiated squamous cell carcinoma. TNM pathological classification T3 N0 Mx, stage 3.

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Fig. 1: Cut section: Granular Grayish White with Necrosis
Discussion

Tumours of the ureter and renal pelvis account for 8% of urinary tract neoplasm and 10% of them are SCC. Symptoms are haematuria and flank pain, hydronephrosis maybe also present. SCC is malignant neoplasm derived from the urothelium showing histologically pure squamous cell phenotype. Pure SCC is high grade and high stage tumours invading the kidney and survival for 5 years is rare.

If an identifiable urothelial carcinoma in situ is found the tumour should be classified as urothelial carcinoma with squamous differentiation. The invasive tumours may be well differentiated with islands of squamous cells with keratinization, prominent intercellular bridges, and minimal nuclear pleomorphism. In poorly differentiated, there is marked nuclear pleomorphism with only focal evidence of squamous differentiation. Pathological stage is the most important prognostic parameter for SCC. The tumours are staged using the AJCC/TNM system as for urothelial carcinoma.2,3

The pathogenesis is assumed to begin with urothelial metaplasia due to chronic irritation and this leads to de-differentiation and finally SCC.4 As renal SCC is frequently associated with chronically infected staghorn renal calculi of long duration, it is recommended for the patients under extracorporeal shock wave lithotripsy treatment or patients with non-functioning kidney due to stone disease to be carefully examined with imaging modalities.5

Factors held responsible for renal pelvic malignancies are chemicals, analgesics and smoking. It is presumed that high stage SCC become symptomatic at the time when the tumors are large, invasive and often incurable and these symptoms could not be differentiated from those of calculi, infection and chronic irritation.6,7

To summarize, malignancies of urinary tract associated with stone disease have insidious onset of clinical symptoms and there is a fair incidence of squamous malignancies. The possible way to improve prognosis is early diagnosis by screening patients of long standing urolithiasis with a CT scan.
References
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