

# Squamous Cell Carcinoma of the Kidney

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Squamous cell carcinoma (SCC) of the urinary tract is a rare tumor that is more common in the bladder and male urethra than the renal pelvis. Tumors of renal pelvis and calices represent 5 to 14 % of all malignant renal growths and less than 1 % of genitourinary tumors (1,2). SCC is estimated to represent 9 to 20 % of all tumors of the renal pelvis. There is a relatively strong correlation of SCC with long-standing pyelonephritis, calculi and squamous metaplasia (3,4).

## Case report

A 58-year-old male presented with left flank pain and hematuria. He had been suffering from intermittent pain for one year. Physical examination was normal except left sided abdominal tenderness. Urinary analysis revealed hematuria and pyuria. Proteus grew in the urine culture. Erythrocyte sedimentation rate was 30 mm after 1 hour. Other laboratory tests were normal. Intravenous urography showed a functioning kidney with slight left hydronephrosis and multiple calculi in lower calices (Fig 1).

The patient was diagnosed to have hydronephrosis with calculi, and total nephrectomy or lower pole nephrectomy with removal of calculi was planned. We saw in the operation that the kidney was enlarged and intensively attached to perirenal tissue. So, total nephrectomy and upper ureterectomy were performed.

Macroscopically, a tumor of about 4x3x2 cm in diameters was found in the middle pole calix of the kidney. The tumor invaded the renal pelvis, but not renal capsule and surrounding tissues. Histological examination revealed a well differentiated epidermoid carcinoma with keratodes and focal keratin pearl production (Figs 2,3).

After pathological diagnosis, abdominal ultrasonography and CT were performed to look for any metastatic lesions. There was a solid mass (25x30mm) in the liver which was later confirmed as metastasis of squamous cell cancer by fine needle aspiration biopsy.

## Discussion

The relevant medical history of SCC often includes episodes of chronic pyelonephritis or nephrolithiasis. Mazeman reported that SCC was associated with calculi in 30 to 60 of these cases (3). Urinary calculi was accepted as a main carcinogenic risk factor for SCC. Chronic irritation and infection are believed to induce reactive changes



Figure 1. Intravenous urography showing a functioning left kidney with multiple calculi in the lower calices, but no mass image.

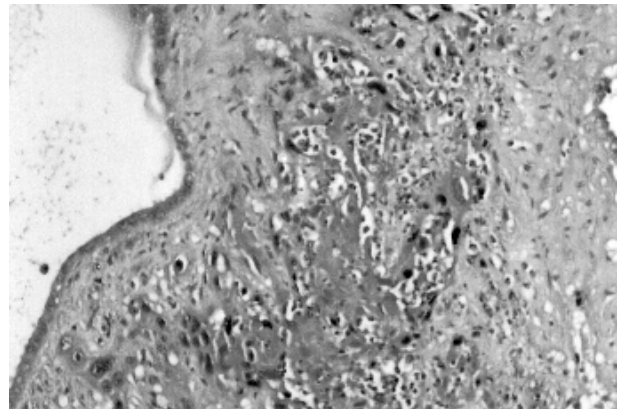


Figure 2. Well differentiated squamous cell carcinoma with a dilated tubule on the left side.

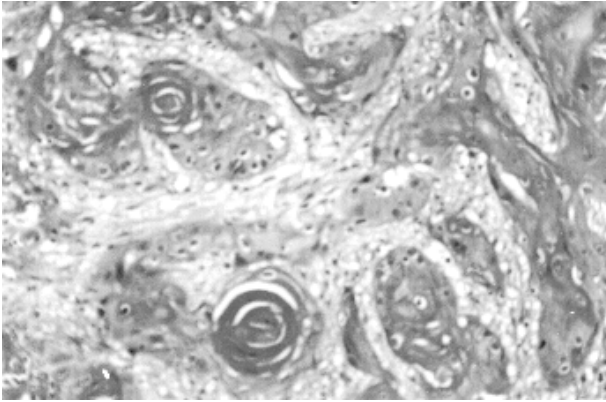


Figure 3. Nests of squamous cell carcinoma with keratin pearls.

in the urothelium and lead to neoplasia via metaplasia and leukoplakia. Staghorn stones are more likely to be associated with renal pelvis neoplasms.

Ureteral obstruction is the main cause of presenting symptoms. Diagnosis is difficult, since imaging techniques usually reveal only calculi and hydronephrosis with diffuse ureteral obstruction. Therefore, the initial diagnosis of SCC is mostly based on histological analysis as was in our case.

Some authors reported that the treatment of choice was nephrectomy with total ureterectomy including a bladder cuff around the ureteral orifice (4). However others suggested nephrectomy and only partial ureterectomy (5). Chemotherapy conveys little benefit and the value of radiotherapy is debatable.

SCC of the upper urinary tract is generally considered

as an aggressive tumor. Previous studies reported that the average survival time was less than 12 months and that most patients died of the disease within 2 years after diagnosis (6,7).

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