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Pure Squamous Cell Carcinoma of Renal Pelvis: A Rare Case Report

Dr. Lokendra Kunwar [1*]

Abstract

Pure squamous cell carcinoma of renal pelvis is a rare malignancy usually associated with nephrolithiasis. There is difficulty in early diagnosis of such rare neoplasm because of non-specific clinical and radiological features. We report a case of squamous cell carcinoma of left renal pelvis in a 60 year old male with history of long standing renal calculi. After detailed workup, he underwent radical nephrectomy and the histopathological examination revealed squamous cell carcinoma of renal pelvis.

Keywords: Neoplasm; Renal pelvis; Squamous cell carcinoma of renal pelvis.

Introduction

Pure squamous cell carcinoma (SCC) of renal pelvis is a very rare cancer accounting for 10% of all renal pelvic neoplasm and 0.5% of all renal malignancies.[1] SCC of the renal pelvis usually occurs in patients of 50 to 70 years age group. Nephrolithiasis is the major risk factor associated with SCC of the renal pelvis.[2] The pathogenesis involves chronic irritation due to renal calculi causing metaplasia of epithelial lining and eventually transformation into squamous cell carcinoma. The only symptom is flank pain for which analgesics are used that can lead to delay in diagnosis and management. These tumors have high proliferative activity, aggressive in nature and have poor prognosis.[3] Here, we report a case of SCC of left renal pelvis in a 60 year old male with a history of long standing renal calculi.

Case Report

A 60 year old gentleman with Eastern Cooperative Oncology Group Performance Status (ECOG PS) one, ex-smoker, occasional alcohol consumer, known case of Type II diabetes mellitus under medications, no past surgical history and no significant family history of cancer was evaluated for left sided flank pain for seven years. Pain was dull aching in nature, mild to moderate in intensity, often radiating to left groin region, not associated with fever, vomiting, hematuria, and weight loss. He underwent medical examination several times, but was managed conservatively for nephrolithiasis only. There was increase in severity of pain since three months and came to Bir Hospital for further workup and treatment. All routine investigations were normal. Ultrasonography of abdomen and pelvis was suggestive of left gross hydronephrosis with multiple calculi with ill-defined heterogeneous mass in left kidney. CT Intravenous urography was done which revealed left renal pelvic calculus measuring 5.7x5.2x3.9 cm (HU +1330) with extension into inter and lower pole calyces with gross dilatation of calyces. Heterogenously enhancing lobulated exophytic cystosolid area measuring 7.6x6.8x6.7 cm noted in left renal pelvis adjacent to calculus with multiple thick internal septations and calcifications. Anteriorly, lesion had abutted bowel loops with maintained fat plane. Medially, lesion had abutted aorta with maintained fat plane. Posteriorly, lesion had abutted prevertebral spaces. Multiple enhancing lymph nodes adjacent to above mentioned lesion, largest measuring 2.8x1.6 cm (Figure 1).

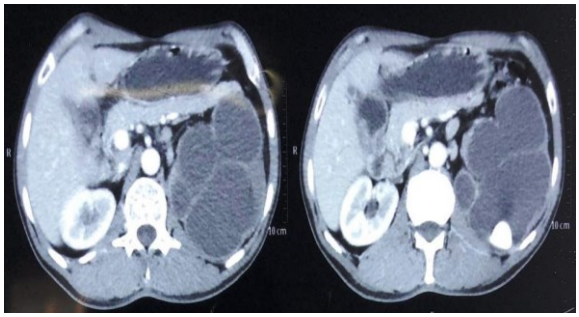

Figure 1: CT IVU showing heterogenously enhancing lobulated exophytic cystosolid area in left renal pelvis adjacent to calculus with multiple thick internal septations and calcifications.

He was planned initially for laproscopic radical nephrectomy, but then changed to open radical nephrectomy at Bir Hospital. The patient's postoperative course was relatively uneventful.

Histological aspect of the specimen: On gross examination, there was solid whitish homogenous proliferative mass present over pelvis region measuring 8.5 cm x 5.5 cm x 4.5 cm invading the renal parenchyma. The mass was grossly involving the pelvis/ hilum and extending up to the ureter (Figure 2). Largest cystic area measured 6.5 cm x 4.5 cm x 4 cm with staghorn calculi (Figure 3). The histopathological examination revealed squamous differentiation cells with extensive keratin pearls (Figure 4). The individual cells showed moderate to marked pleomorphism with increased nuclear to cytoplasmic ratio and moderate to abundant eosinophilic dyskeratotic cytoplasm with indistinct cytoplasmic border. Tumor invaded the renal parenchyma. Total seven lymph nodes were identified and all were negative for tumor. Renal vein margin, renal artery margin and ureteral margin were positive for tumor. Lymphovascular invasion was present, but perineural invasion was not seen. As a result, the diagnosis of well-differentiated pure SCC of renal pelvis, pT3N0 was made.

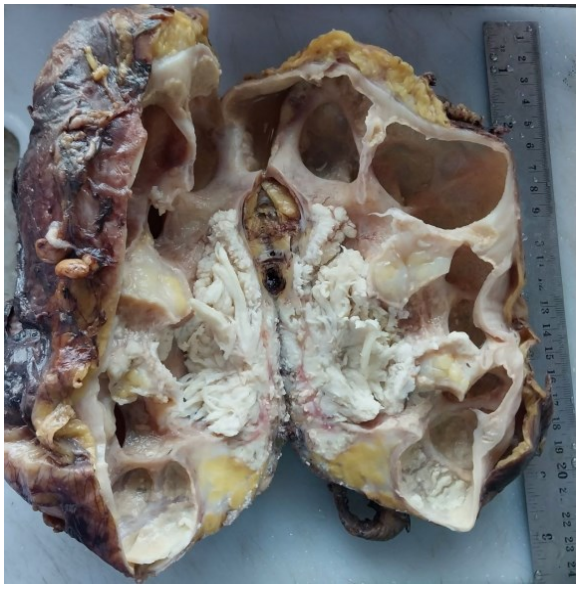

Figure 2: Cut surface of kidney with whitish solid mass

Figure 3: Staghorn calculi

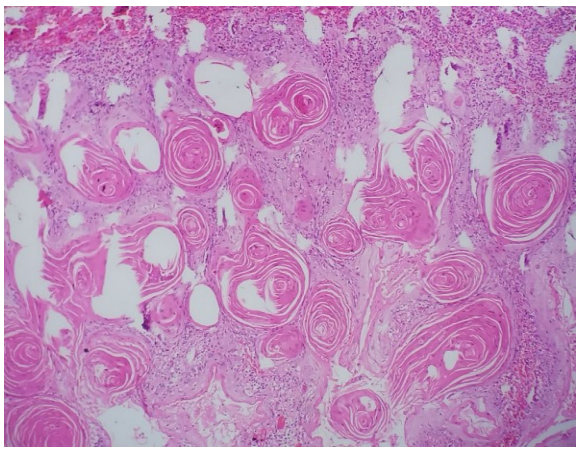

Figure 4: Microscopic view showing extensive keratin pearls

He was then advised for adjuvant chemotherapy but defaulted.

Discussion

The SCC of renal pelvis is a very rare cancer with incidence of less than 1% of all renal malignancies.[1] The incidence among males and females are almost equal and most common age of presentation is late adulthood. Due to lack of definite clinical presentation and diagnostic approach, patients usually present at advanced stage and associated with poor outcomes.[3] The presenting symptoms include dull aching flank pain, hematuria, abdominal mass, and weight loss.[4] The factors like long standing renal calculi, chronic pyelonephritis and other infections, chemicals, radiotherapy, vitamin A deficiency etc. may predispose for this rare malignancy. Chronic irritation due to stone leads to urothelial metaplasia and progressing to dedifferentiation, dysplasia and carcinoma. Here, in our case patient had long history of nephrolithiasis with associated flank pain. Radiologically, SCC of the renal pelvis appears as a solid mass with hydronephrosis.[5] Histologically, the SCC presents with squamous differentiation, extensive keratin pearls, and necrosis. The diagnosis by currently available imaging modalities is difficult due to low sensitivity and specificity.[6] Therefore, diagnosis is made by surgical resection and histological analysis of resected specimen. There is no standard treatment guideline for the management of SCC of kidney as incidence is less, however radical nephrectomy with lymph node dissection is the treatment of choice for localized disease. Adjuvant chemotherapy and radiotherapy might be helpful in few patients, but overall prognosis is still poor with five year survival rate less than 10%.[7]

Conclusion

Pure SCC of Renal Pelvis is highly aggressive cancer associated with poor outcomes. Patients with long standing renal calculi are at high risk for development of SCC of the renal pelvis. Surgical management should be done as early as possible and chemotherapy has no significant benefits in such cases.

Conflict of interest

The author declares no conflict of interest.

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