Case Report

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An Unusual Presentation of Squamous Cell Carcinoma of Kidney

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ABSTRACT

Primary squamous cell carcinoma of the renal pelvis is an extremely rare entity representing only 0.5% to 0.8% of all urothelial malignancies. Clinical suspicion is difficult due to its rarity and inconclusive clinical and radiological features. A 67-year-old lady with a history of hematuria presented to the hospital in a state of shock. After proper workup, a mass with heterogeneous density was seen in the lower portion of the left kidney. After radical nephrectomy, histopathological examination revealed squamous cell carcinoma of renal pelvis. Squamous Cell Carcinoma should be suspected in a patient with a long history of renal calculus and associated mass in non-functioning kidney.

Keywords: Calculus; mass; pelvis; squamous cell carcinoma

INTRODUCTION

Primary squamous cell carcinoma (SCC) of renal pelvis is a rare neoplasm, accounting for 0.5-0.8% of malignant renal neoplasm.[1] It behaves aggressively in the case of kidney.[1] SCC of urinary tract is more frequently reported in the urinary bladder and male urethra.[2] Because of its lack of characteristic presentation, such as palpable mass, hematuria, and pain, the patients usually present late resulting in a delay in diagnosis.[3] Risk factors are renal calculi, infection, endogenous and exogenous chemicals, hormonal imbalance, radiotherapy and vitamin A deficiency.[4] We report an unusual presentation of SCC of the left renal pelvis with no known etiology which presented to us in shock for which salvage Nephrectomy was done and recent literature was reviewed.

CASE REPORT

A 67-year-old lady, known case of chronic obstructive pulmonary disease, hypertension, severe mitral stenosis, and aortic regurgitation, presented with shortness of breath. She also had gross hematuria, for which we were consulted. There was no history of significant weight loss or fever. General physical examination was unremarkable. All routine investigations were normal except urine Routine microscopic examination (RBC-plenty) and serum creatinine ~ 1.3 mg/dL. Ultrasonography (USG) of KUB was suggestive of around 4 cm x 3cm hetero echoic mass in the lower pole. Contrast CT of abdomen and pelvis was suggestive of large heterogeneous density lesion involving mid and lower pole of the kidney with perinephric fat stranding (Figure 1).

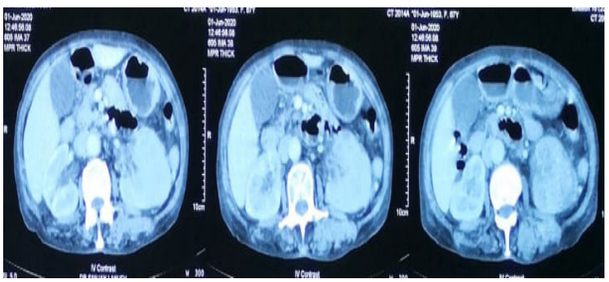

Figure 1. CT-IVU showing large heterogeneous density lesion involving mid and lower pole of the kidney with perinephric fat stranding.

Cystoscopy was done to rule out the cause of hematuria and a random biopsy was taken and next day gross hematuria was noticed and she went into shock. After she was stabilized, she underwent left Radical nephrectomy. On the cut section of the specimen, a solid and lobulated 8.5 x 5.5 x 5 cm mass, with cystic degeneration and necrotic areas was discovered (Figure 2).

Histopathological evaluation of SCC of kidney should mention about the involvement of renal capsule, adipose tissue, hilar lymph nodes, etc (Figure 3). Sections from proximal and mid ureter were free from tumor. The patient was discharged on day 11 and kept on follow-up and was advised for radiotherapy and proper lymph node dissection, due to her poor physiological status 2nd stage procedure couldn't be performed.

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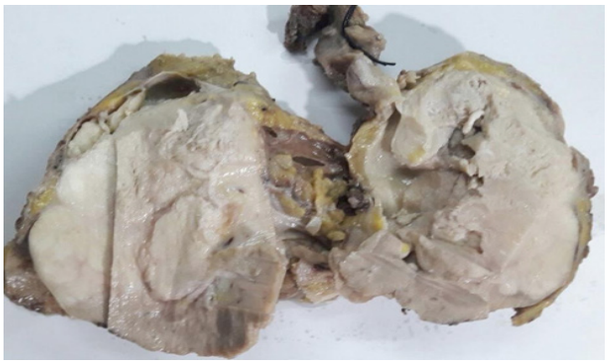

Figure 2. Cut surface of the tumor involving the almost entire renal parenchyma.

Histological aspect of the specimen:

On gross examination, the tumor measured 8.5 x 5.5 x 5 cm and involved almost the entire renal parenchyma. The mass was predominantly solid, gray-white in appearance. On careful examination of the pelvis, there were whitish plaque-like areas on the luminal aspect. The histopathological examination revealed islands of squamous cells with the formation of extensive keratin pearls. The whitish areas on the pelvis demonstrated dysplastic squamous lining, showed infiltration by tumor in the renal sinus. However, lymph nodes were not involved. The diagnosis was rendered as pT3 N0 squamous cell carcinoma of the pelvis.

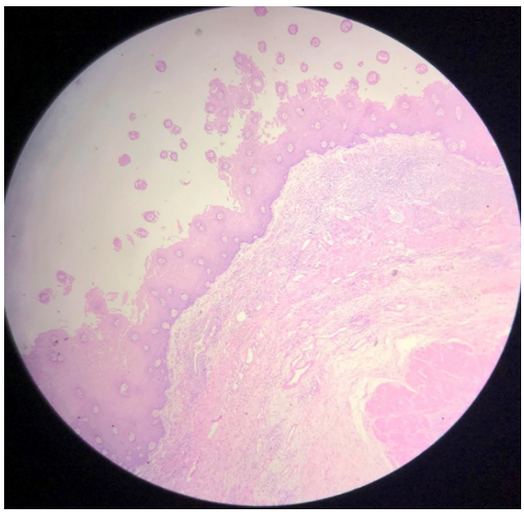

Figure 3. Microscopic findings showing dysplastic squamous lining of the pelvis (40x).

DISCUSSION

Although the second most common malignancy after urothelial carcinoma, squamous cell carcinoma (SCC) of the renal pelvis is a rare entity.[5] Squamous cell carcinoma of the pelvicalyceal system with the involvement of the kidney is a very rare entity. However, this diagnosis should be included in the differential diagnosis when evaluating a renal mass that is associated with renal calculi.[1,3,5-7] In comparison to other upper urinary tract malignancies, these tumors are highly aggressive in nature and are usually present at an advanced stage when detected, and have a poor prognosis.[8] The predisposing factors which play in the genesis of this rare malignancy are renal calculi, infections, exogenous and endogenous chemicals (e.g.-arsenic), prior history of renal stone surgery, analgesic abuse, radiotherapy, and vitamin A deficiency.[4] There is the development of urothelial metaplasia resulting from a reaction to chronic irritation, which further progresses to dedifferentiation, dysplasias, and in the end to an SCC.[1] In our case, there was no known risk factor for suspecting S.C.C of kidney. The mode of presentation in patients with renal SCC is usually dull aching flank pain, hematuria, fever, weight loss, or with paraneoplastic syndrome.[4] In our patient, the only presenting feature was hematuria. There is relatively equal gender distribution and the most common age of presentation is late adulthood.[9] Diagnosis of SCC by the currently available imaging modality is difficult due to the lack of any specific radiological feature. Therefore, the diagnosis of the renal SCC is usually made after surgical resection and histological analysis of resected specimen as was seen in the present case.[10] Due to the extreme rarity of the tumor, there is no standard guideline for the management, however radical nephrectomy may be curative if the disease is localized.[9] Renal pelvis SCC is an aggressive tumor, most cases usually present at an advanced stage. Therefore, for the treatment of advanced disease, a multidisciplinary approach including surgical treatment along with adjuvant chemotherapy and radiotherapy should be applied, but poor response to surgery, radiotherapy, and chemotherapy is the norm, resulting in short survival periods for most of the cases.[10]

CONCLUSIONS

Any patient presenting with a long history of hematuria and presented in shock should undergo a careful diagnostic workup. Surgical management should be considered as early as possible and during surgery possibility of SCC should always be kept in mind.

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