CASE REPORT

Squamous Cell Carcinoma Kidney in a Patient of Renal Calculi: Rare and Aggressive Variant of Renal Cancer

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ABSTRACT

Squamous Cell Carcinoma (SCC) of kidney is a rare presentation. It behaves aggressively in case of kidney. It is usually diagnosed at an advance stage and has a poor prognosis. Renal squamous cell carcinoma is usually associated with stones. Chronic irritation due to stone causes metaplasia of lining epithelium resulting in transformation of squamous cell carcinoma which is rare but the most fatal complication. Here we are presenting a case of renal squamous cell carcinoma associated with stones.

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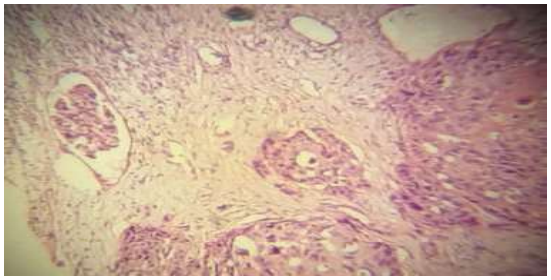
INTRODUCTION

Squamous cell carcinoma is a very rare tumour which makes up under 1% of all malignant tumours of kidney. This tumour is very aggressive in nature and prognosis is poor because it is usually diagnosed in advance stage[1]. Risk factors leading to renal squamous cell carcinoma include renal calculi, infection, endogenous and exogenous chemicals, vitamin A deficiency, hormonal imbalance, and radiotherapy[2].

Case presentation:

A 63-years-old female presented to the urology ward of a tertiary care unit with the complaint of renal stones for seven years with flank pain. Ultrasound kidney showed kidney with features of hydronephrosis and multiple renal stones. She underwent nephrectomy. The specimen was sent for histopathological examination in 10% buffered formalin. On gross examination, the specimen was previously (surgically) distorted and fragmented. On further slicing, there were features of hydronephrosis, thinned out cortico-medullary areas and most of the other areas revealed gray white cut surface with friable to cut areas as shown in photograph 1. The collective dimensions of the fragment are 15 x 10 x 4 cms. Histological examination revealed a malignant neoplastic lesion comprising of a nest of squamous carcinomatous components with keratin pearl formation. Few glomeruli and tubules were also observed at the periphery intermixed with neoplastic lesions as showed in the photomicrograph 2 and 3. There was a dense to diffuse mixed inflammatory infiltration and areas of necrosis were also seen in the interstitium.

Photograph 1: The gross examination of received sample exhibiting fragments of kidney with solid to cystic areas



Photograph 2: The histopathological image showing with an invasive squamous cell carcinoma on the right side of this field distorting the renal architecture with a single glomerulus of the left side of the field is identified. X 100

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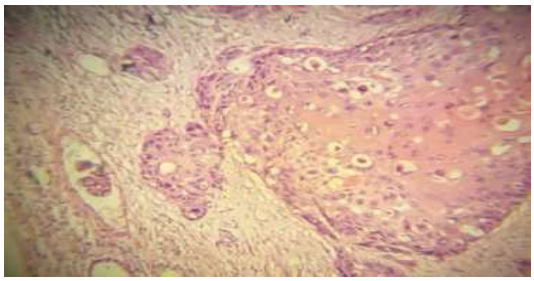

Photomicrograph 3: The histopathological image showing a fibrosed glomerulus of the left side of the field surrounded by scattered inflammatory cells in the interstitium with invasive squamous cell carcinoma on the right side. X 100

DISCUSSION

Renal squamous cell is extremely rare. Bladder and male urethra are its more common sites than the renal pelvis[3]. Histologic hallmarks of renal SCC include intercellular bridges, pearl formation, and keratotic cellular debris[4]. Possible carcinogenic mechanisms for SCC of the renal pelvis have been proposed. Chronic irritation of urothelium may result in squamous metaplasia, which if persistent, may later develop into SCC. SCCs of the kidney are frequently associated with renal stones, hydronephrosis and chronic infection, all of which contribute to chronic irritation and subsequent development of squamous metaplasia in the neighboring epithelium[5]. Renal SCC usually presents at an advanced stage with extensive local infiltration and has a poor prognosis[6]. Primary SCC has a slight female preponderance occurring most commonly in the age group of 50-70 years[7]. Studies show that SSC generally spreads locally with associated symptoms of regional lymphadenopathy. Cases have been reported with metastasis to the lungs, liver, and bone. SCC is a highly aggressive tumour. It has the worst prognosis among histological subtypes of renal pelvis tumours. Its median survival rate is 3.5 months[9].

CONCLUSION

Renal SCC is a very rare entity. Its insidious onset and nonspecific radiological findings permit late diagnosis resulting in poor prognosis. These tumours are usually treated with aggressive surgery and chemo radiation in case of metastatic disease. The possibility of primary renal SCC should be considered in cases of nonfunctioning kidney with renal stones after ruling out metastatic disease with the help of clinical and radiological findings.

Authors' contribution: Syed Mehmood Hasan worked on histopathological diagnosis and details. Talat Zehra conceived the idea and wrote the manuscript. Salma Parween and Sadaf Razzaq carried out the literature search.

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