CASE REPORT

Primary Squamous Cell Carcinoma Of Kidney -A Case Report And Review Of Literature

Dr. Pardeep Garg[1], Dr. Sheenu Priya[2], Dr. Navik Goyal[3]

[1]Associate Professor and Head, [2,3]Senior Resident, Dept. of Radiation Oncology, Guru Gobind Singh Medical College and Hospital, Faridkot, India

Corresponding Author
Dr. Navik Goyal
Senior Resident, Dept. of Radiation Oncology, Guru Gobind Singh Medical College and Hospital, Faridkot, India
Email: navikgoyal@gmail.com

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ABSTRACT
Primary Squamous Cell Carcinoma (SCC) of the Kidney is a rare variety of Renal Cell Carcinoma. Patients present with inconclusive signs and symptoms and thus diagnosis is unsuspected. Therefore, these patients land in advanced stage disease and have poor prognosis. Here we present a Case of Squamous Cell Carcinoma Kidney, who presented in advanced stage, his workup and the treatment done. A 52-year-old male presented with left flank pain and fever. A computerized tomography (CT) scan showed nephrolithiasis and chronic inflammation in the left kidney and a soft tissue heterogenously enhancing lesion at the upper pole causing hydronephrosis . He underwent Radical Nephrectomy and Histopathological examination revealed an invasive, moderately differentiated squamous cell carcinoma involving renal parenchyma, perinephric tissue, fat and hilar lymph nodes (stage 3). Thereafter, patient was treated with Radiotherapy and Chemotherapy ,then he was planned for metronomic chemotherapy. Primary Renal squamous cell carcinomas are very rare tumours which are often not clinically suspected or diagnosed. These tumours require thorough clinical examination, radiological workup, aggressive approach towards treatment to add years in their life owing to worse prognosis and highly proliferative variety of the primary.

Keywords: Nephrolithiasis, Primary Renal squamous cell carcinoma, Radicalnephrectomy, Chemotherapy, Radiotherapy

INTRODUCTION

Primary squamous cell carcinoma (SCC) of the kidney is a rare occurrence, accounting for only 0.5–7.0% of upper urinary tract tumors[1–5]. These tumors are aggressive in nature with worse prognosis. As SCC Kidney is rare as well as presentation is not like common Renal tumors, diagnosis is delayed and this adds to disease progression. This case discusses Squamous cell carcinoma of the Kidney incidentally diagnosed after nephrectomy for a chronically injured kidney with nephrolithiasis and hydronephrosis.

CASE PRESENTATION

A 52-year-old male patient presented to the Department of Oncology with a one-month history of intermittent, localized, dull left flank pain, which was associated with nausea, vomiting and fever. He did not have macroscopic hematuria and had no other urinary symptoms. On admission, physical examination revealed left renal angle tenderness. There was no abdominal distension, and there were no palpable mass. Contrast enhanced CT scan showed left kidney with calculi and a large heterogenously enhancing lesion measuring 7*8 cm at the upper pole causing hydronephrosis (**figure 1**). Careful imaging study ruled out the presence of other systemic involvement. Radical nephrectomy was performed and histopathological examination revealed presence of normal looking glomeruli and renal tubules along with squamous carcinomatous component and keratin pearls confirming diagnosis of SCC of kidney(**figure 2)**. Renal capsule and perinephric adipose tissue and hilar lymph nodes were involved with tumor (stage 3). He was taken for Radiotherapy in view of localized diseaseand given left flank radiation 40Gy /20#/4weeks (PhaseI) and 16Gy /8#/2 weeks (Phase II) (Radiation plan - **figure 3**).Thereafter, in view of persisting residual disease and lymph nodal mets, he was given 6 Cycles of palliative systemic Chemotherapy - Docetaxel (80mg/m^2) and Carboplatin (AUC 6). He was re- evaluated for disease status via PET-CT Scan which showed disease progression with

appearance of pulmonary metastasis. He was planned for Metronomic Chemotherapy Geftinib 250 mg OD and Capecitabine 1000 mg BD and his disease remained stable for around 3 months. Few months after, he developed breathlessness for which he was on palliative treatment after which he died of pulmonary failure. He remained alive for around 18 months post diagnosis .

Figure: 1-Computed tomography scan of the patient on presentation showing soft tissue lesion at upper pole of the kidney causing significant hydronephrosis.

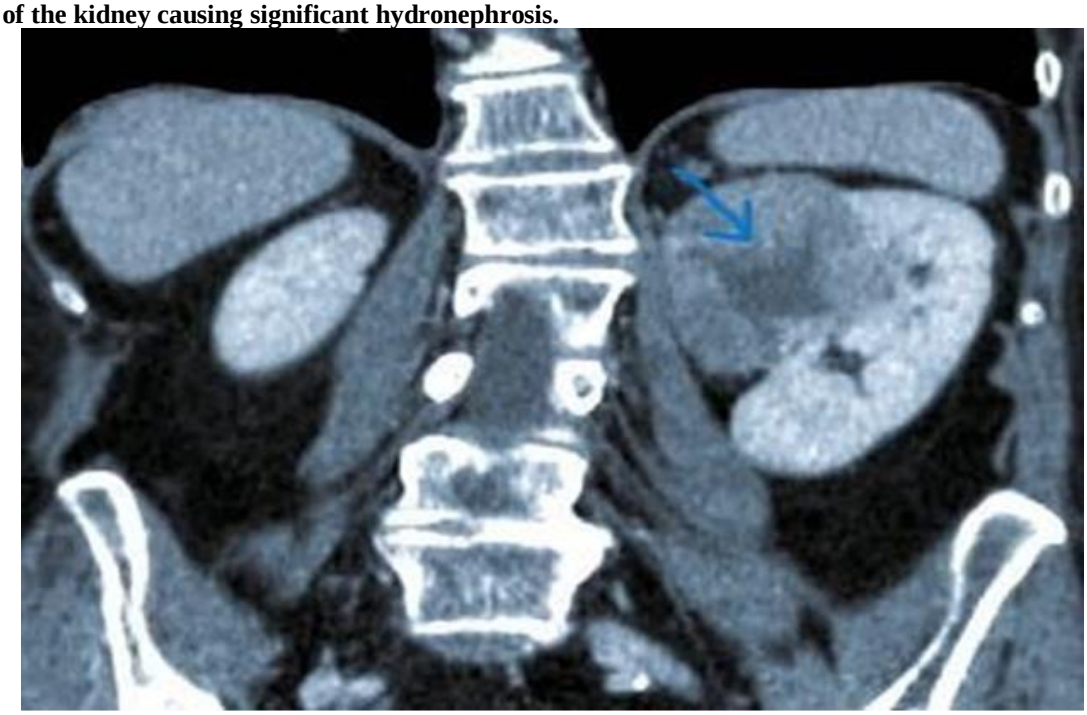

Figure: 2- Histopathological finding showing squamous cell carcinoma of the kidney.

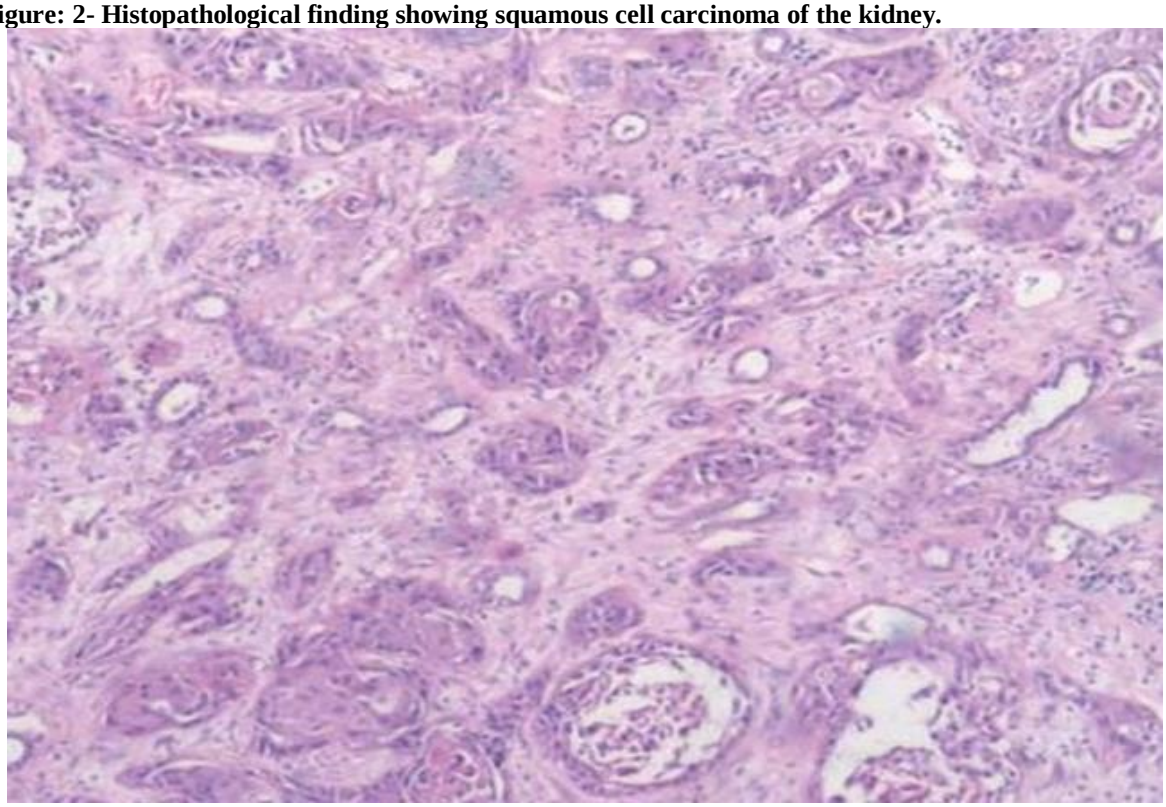

Figure: 3- Showing the radiation field taken for treatment of post op bed Normal kidney was shielded.

DISCUSSION

85–90% of Urinary tract cancers are urothelial / transitional cell carcinomas, while pure squamous cell carcinomas (SCC) are rare, accounting for only 0.5–7.0% of them and is known to arise from the collecting system [1–7,9,18].

Patients present between the fifth to seventh decades [1,4,5]. Some studies confirm that there is a female predominance and the most common age group of presentation is 50–70 years [8]. SCC of Kidney is associated with renal stones, chronic infection and infammation, which leads to squamous metaplasia, dysplasia and eventually SCC [3-7,10,11]. SCC of the Kidney is infrequently suspected or diagnosed preoperatively due to its rarity and the non-specific symptoms, signs and radiological findings [4,5, 8]. Histopathologically, squamous components in SCC of kidney are similar to other SCCs and consist of features of keratin pearls, intercellular bridges and keratotic cellular debris. If the urothelial dysplastic element is identifed along with urothelial carcinoma in situ, the tumour should be classifed as primary urothelial carcinoma with squamous differentiation. Squamous metaplasia of urothelium with chronic irritation is thought to cause SCC of the Kidney. [7,8,19] Radiological fndings of renal pelvis SCC include a solid renal pelvic or ureteric mass, hydronephrosis, calcifcations or regional lymphadenopathy[4,7,8]. In our case, Contrast enhanced CT scan of abdomen and pelvis revealed a solitary renal mass without any obvious other sites of lesion which could arise possibility of renal metastasis. Also Solitary Renal pathology was identified in the parenchyma sparing the renal pelvis. Microscopically, primary renal SCC resembles squamous cell carcinomas at other sites. In the present case, the tumour was identifed in sections of renal pelvis, adjacent perinephric tissue and hilar lymph nodes. Extensive tumour necrosis is documented in such cases with lymphovascular and perineural invasion. Patients with renal SCC tend to present at an advanced stage, usually at least T3 or higher [1–4, 7]. The patient in the current case report had stage III disease. Tumour recurrences have been shown to typically developrapidly, which was the case in our patient [9,10]. The overall survival for patients with SCC of the upper urinary tract is much worse in comparison with patients with urothelial carcinoma (UC) [1– 4,12,13,14] . However, when compared stage for stage, there is no disease specifc 5- year survival diference between SCC and UC [2,13]. There is currently no standardized treatment protocol for management of patients with primary Renal SCC. The mainstay of treatment has been surgeryby either a radical nephrectomy or nephroureterectomy [1,4–9]. Most patients with loco-regional disease do not have accurate lymph node staging.[13] Further studies are required to determine whether chemotherapy or radiotherapy will improve patient survival[15]. Although prognosis of SCC is the same in stage-wise as urothelial cancers, they usually occur in advanced stages. [16,17,20]

Some benefit has however been suggested with adjuvant chemotherapy in patients with urothelial carcinoma of the upper urinary tract [13]. Primary renal squamous cell carcinomas are very uncommon

tumours which are often not clinically suspected or diagnosed. On Comparing with previous case reports, most patients die around 6 weeks of surgery but the patient in the current study survived for more than 18 months post radical nephrectomy possibly because of localised treatment effect of radiotherapy and taxanes plus platinum based chemotherapy. Even in metastatic tumours, Radical nephrectomy and Lymph nodal dissection have a role. Anti-EGFR therapy is under study for such cases.

CONCLUSION

Primary Renal squamous cell carcinomas are very rare tumours which are often not clinically suspected or diagnosed. These tumours require thorough clinical examination, radiological workup, aggressive approach towards treatment to add years in their life owing to worse prognosis and highly proliferative variety of the primary. Currently, Radical Nephrectomy with lymph nodal dissection is the mainstay but Radiotherapy for localised disease and chemotherapy for palliative treatment is observed to increase survival in these patients.

Conflicts of Interest-The authors have no confict of interest to declare.

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