ISSN- O: 2458 - 868X, ISSN–P: 2458 – 8687
National Library of Medicine - ID: 101731606

International Journal of Medical Science and Innovative Research (IJMSIR)
IJMSIR : A Medical Publication Hub
Available Online at: www.ijmsir.com
Volume – 7, Issue – 4, August – 2022 , Page No. : 81 – 84

Primary squamous cell carcinoma of kidney - A case report

[1]Dr. Shirish B Sonawane, Junior Resident, Department of Pathology, NKP Salve Institute of Medical Sciences and Lata Mangeshkar Hospital, Nagpur.

[2]Dr. Pragati J Karmarkar, Associate Professor, Department of Pathology, NKP Salve Institute of Medical Sciences and Lata Mangeshkar Hospital, Nagpur.

[3]Dr. Sadhana D Mahore, Professor, Department of Pathology, NKP Salve Institute of Medical Sciences and Lata Mangeshkar Hospital, Nagpur.

[4]Dr. Trupti Dongre, Lecturer, Department of Pathology, NKP Salve Institute of Medical Sciences and Lata Mangeshkar Hospital, Nagpur.

Corresponding Author: Dr. Pragati J Karmarkar, Associate Professor, Department of Pathology, NKP Salve Institute of Medical Sciences and Lata Mangeshkar Hospital, Nagpur.

Citation this Article: Dr. Shirish B Sona wane, Dr. Pragati J Karmarkar, Dr. Sadhana D Mahore, Dr. Trupti Dongre, "Primary squamous cell carcinoma of kidney - A case report", IJMSIR- August - 2022, Vol – 7, Issue - 4, P. No. 81 – 84.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Primary squamous cell carcinoma (SCC) of the kidney is a rare entity which tends to be associated with nephrolithiasis, chronic irritation, and infection. Due to its rarity and the non-specific clinical signs and symptoms as well as radiological findings, it is often not suspected preoperatively. Patients with SCC of the renal pelvis typically present with advanced stage disease and have a poor outcome. We report a case of a 56 year old female patient presented with right flank pain and burning micturition since 4 months. On USG, patient was diagnosed to have pyonephrosis with calculi. Renal scintigraphy showed non-functional right kidney. The Patient underwent right nephrectomy with removal of ureter and histological analysis determined that the diagnosis was well differentiated squamous cell carcinoma of kidney involving perirenal adipose tissue.

Keywords: Squamous cell carcinoma kidney, Nephrolithiasis.

Introduction

Primary squamous cell carcinoma (SCC) of the renal pelvis is an extremely rare entity representing only 0.5% to 15% of all urothelial malignancies. It is clinically unsuspected due to its rarity and inconclusive clinical and radiological features. [1] SCC of urinary tract is more frequently reported in urinary bladder and urethra rather than kidney. Risk factors are renal calculi, infection, endogenous and exogenous chemicals, hormonal imbalance, radiotherapy and vitamin A deficiency.[2] Although the incidence of this tumor in the kidney is rare, when a renal mass is accompanied by a longstanding renal stone, this differential diagnosis should be considered. Factors that increase the probability of SCC caused by a renal stone include chronic irritation, inflammation, and infection, which can

cause squamous metaplasia in the renal pelvis epithelium.[3] Here we report a case of primary renal SCC in middle age woman.

Case report

A 56-year-old female patient came to surgical out-patient department with chief complaints of right flank pain and repeated burning micturition since 4 months. There was no history of fever, significant weight loss. General physical examination was unremarkable. All routine blood investigations were normal except serum creatinine (1.31 mg/dl).

USG Abdomen and pelvis

Right kidney: 13 x 7 cm and appears enlarged and heterogenous with loss of corticomedullary differentiation. Right sided pelvis and renal calyces shows ballooning with blunting of forniceal angles with partially liquefied collection showing multiple moving echoes within.

Multiple calculi are noted in upper mid and lower pole, largest of size 2 cm in interpolar region. Tip of pigtail catheter is noted in interpolar region of right kidney.

Left kidney: 9.2 x 4.8 cm, and appears heterogenous with hypoechoic areas. Both the kidney shows normal position.

DTPA (Diethylenetriamine Penta acetic Acid) SCAN:

Renal Scintigraphy was suggestive of right non-functioning kidney (GFR= 38.1 ml/ min). She underwent right nephrectomy with removal of ureter and the specimen was received for histopathology examination.

On gross examination:

We received a single irregular greyish brown firm tissue mass measuring 12 x 7.5 x 6 cm. External surface shows blackish areas. On cutting open two blackish stones are identified. Largest stone measuring 2 x 1.2 x 0.5 cm. Cut surface shows yellowish white areas. (Figures 1 & 2).

Microscopic examination: Sections from multiple areas have been studied. They reveal sheets, cords and clusters of round to polygonal tumour cells having round to oval vesicular nuclei with prominent nucleoli and scanty cytoplasm. There is mild to moderate anisonucleosis and pleomorphism. Few bizarre cells and mitotic figures are seen. Few keratin pearls are also seen. Intervening stroma is scanty and shows mononuclear inflammatory infiltrate. Extensive areas of necrosis are seen. Foci of hyalinized glomeruli and atrophic renal tubules are seen showing lymphocytic inflammatory infiltrate.

The tumour cells are seen extending upto the perirenal adipose tissue sections from the ureter reveals wall showing focally dense chronic inflammation tumour deposits are NOT seen.

Discussion

Tumours arising from the urothelium of the renal pelvis and ureter are relatively rare neoplasms, comprising 5–10% of all urothelial tumours. [4,5,6, 7] Approximately, 85–90% of these are urothelial carcinomas, while pure squamous cell carcinomas (SCC) are even rarer, accounting for only 0.5–7.0% of upper urinary tract cancers. [4,5,6,7,8] Patients tend to be between the fifth to seventh decades at presentation with various studies documenting differing gender predilection. [4, 9, 1] SCC of the renal pelvis is associated with renal stones, chronic infection and inflammation, which is thought to lead to squamous metaplasia, dysplasia and eventually SCC. [6,10, 11] Our patient presented with right flank pain and burning micturition but did not have haematuria or paraneoplastic phenomena.

Primary renal SCC accounts less than 1% of renal malignancies, so it is an extremely rare tumor. In a study conducted by Perez-Montiel et al, only one out of 108 cases of SCC of renal pelvis and high-grade urothelial carcinoma was noted. Chronic irritation of urothelium is

presumed to be a cause of squamous metaplasia with subsequent malignant progression to SCC.[12] Hipparagi et al reported a case of renal pelvis SCC with previous history of chronic pyelonephritis and renal calculi. In this case histopathological examination revealed well differentiated squamous cell carcinoma of kidney involving perirenal adipose tissue. Usually, renal SCC is aggressive tumor and it has poor prognosis because, it presents in high grades while being metastatic or locally advanced. [13] Female sex predilection was reported earlier but now it is not considered valid since this disease is found equally in both the sexes. The overall survival of patients with SCC of upper urinary tract is much worse in comparison with urothelial carcinoma.

Conclusion

Primary SCC of kidney is a rare case which is often missed and not clinically suspected or diagnosed. Most of times radiological findings are non-specific, so diagnosis of tumor occurs with delay and in advanced stages. It shows strong association with nephrolithiasis. Histopathological confirmation is very important and necessary for management point of view. As main treatment is surgical resection and chemo-radiotherapy is used as adjuvant therapy. The need for renal stones to be managed promptly to prevent this rare, but devastating complication.

References

1. Jain A, Mittal D, Jindal A, Solanki R, Khatri S, Parikh A, Yadav K. Incidentally detected squamous cell carcinoma of renal pelvis in patients with staghorn calculi: case series with review of the literature. International Scholarly Research Notices. 2011;2011.

2. Bandyopadhyay R, Biswas S, Nag D, Ghosh AK. Squamous cell carcinoma of the renal pelvis presenting as hydronephrosis. Journal of cancer research and therapeutics. 2010 Oct 1;6(4):537.

3. Karabulut A, Emir L, Gonultas M, Incel N, Germiyanoglu C, Erol DE. Squamous cell carcinoma located in the renal caliceal system: A case report and review of the literature. Turk J Cancer. 2002 Jan; 32 (1): 20-4.

4. Bleacher EJ, Johnson DE, Abdul-Karim FW, Ayala AG. Squamous cell carcinoma of renal pelvis. Urology. 1985 Feb 1; 25 (2): 124-6.

5. Holmäng S, Lele SM, Johansson SL. Squamous cell carcinoma of the renal pelvis and ureter: incidence, symptoms, treatment and outcome. The Journal of urology. 2007 Jul 1;178 (1):51-6.

6. Li MK, Cheung WL. Squamous cell carcinoma of the renal pelvis. The Journal of urology. 1987 Aug1;138 (2): 269-71.

7. Seo MY, Kang YN. Renal Squamous Cell Carcinoma with Severe Hydronephrosis.

8. Paon Essa J, Beck H, Cook S. Squamous cell carcinoma of the renal pelvis associated with kidney stones: a case report. Medical Oncology. 2011 Dec; 28 (1): 392-4.

9. Hassan M, Qureshi A. Incidental squamous cell carcinoma of the renal pelvis in a non-functioning kidney that was missed on two non-contrast CT-scans. J Ayyub Med Coll Abbottabad. 2017 Jul 11; 29 (3):489-92.

10. Palmer CJ, Atty C, Sekosan M, Hollowell CM, Wille MA. Squamous cell carcinoma of the renal pelvis. Urology. 2014 Jul 1; 84 (1):8-11.

11. Busby JE, Brown GA, Tamboli P, Kamat AM, Dinney CP, Grossman HB, Matin SF. Upper urinary tract Tumors with non-transitional histology: a single-center experience. Urology. 2006 Mar 1;67(3):518-23.

12. Perez-Montiel D, Wakely PE, Hes O, Michal M, Suster S. High-grade urothelial carcinoma of the renal pelvis: clinicopathologic study of 108 cases with emphasis on unusual morphologic variants. Modern

Pathology. 2006 Apr;19(4):494-503

13. Salehi pour M, Dastgheib N, Hossein Zadeh M, Makarem A, Rezvani A, Sanati A, Tayebi S. Primary renal pelvis and ureter squamous cell carcinoma (SCC): a rare case report and review of literature. International Medical Case Reports Journal. 2019;12:189.

Legend Figures

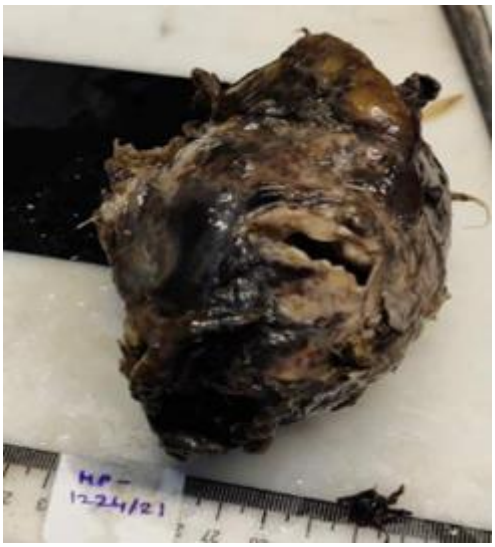

Figure 1: Received a single irregular greyish brown firm mass with irregular external surface measuring 12 x 7.5 x 6cm.

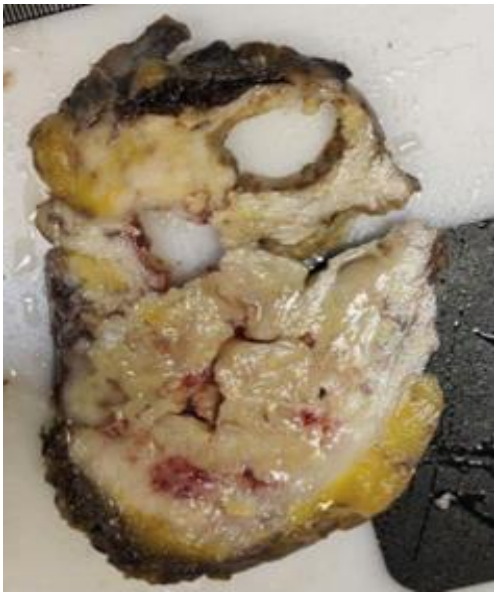

Figure 2: Cut surface shows solid, yellowish white and cystic areas with mucoid material.

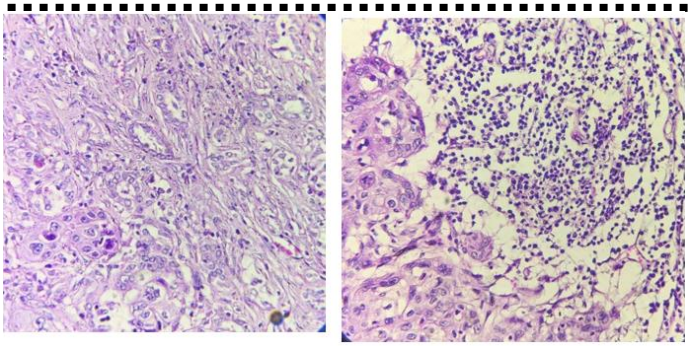

Figure 3 & 4: Photomicrograph showing Nest of malignant squamous cells with intervening stroma (Hematoxyline & Eosin stain 40 x).

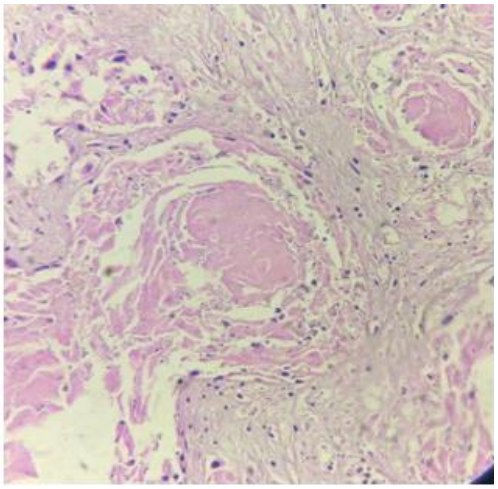

Figure 5

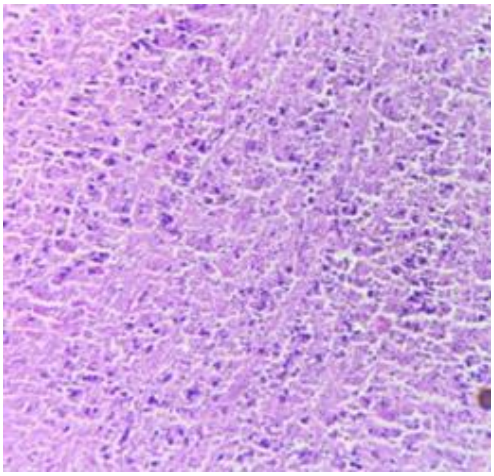

Figure 6

Figure 5 & 6: Photomicrograph showing Foci of Keratin pearls formation and extensive areas of necrosis (Hema toxyline & Eosin stain 40 x).