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CASE REPORT

Squamous Cell Carcinoma of Renal Pelvis - A Case Report

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Abstract

Squamous cell carcinoma of kidney is an extremely rare entity comprising for only 0.5-0.8% of malignant renal tumours. This also makes about 0.5%-1 % of all urothelial malignancies. Due to its rare occurrence it remains a diagnostic challenge to the clinician. Patients present with nonspecific signs and symptoms and even radiological investigations may not help to distinguish it from other neoplastic or non-neoplastic lesions of kidney. Here we present a case report of 60-year-old male presenting with pain abdomen right side for 6 months and generalized weakness for 3 months with presence of huge hydronephrosis of right kidney on radiological examination. Right Radical nephrectomy was done. Histopathological examination of specimen sent showed features of moderately differentiated squamous cell carcinoma arising from renal pelvis involving renal parenchyma extensively. There was no history of prior radiation or renal calculi. This case emphasizes the rare occurrence of this tumour even in absence of renal calculi and importance of careful histopathological examination of every hydronephrotic kidney specimen.

Keywords

Hydronephrosis, Renal Pelvis, Squamous cell carcinoma

Introduction

Squamous cell carcinoma of kidney is an extremely rare entity comprising for only 0.5-0.8% of malignant renal tumours. It is an extremely aggressive tumour with poor prognosis.[1] This also makes about 0.5%-1% of all urothelial malignancies.[2] Due to its rare occurrence it remains a diagnostic challenge to the clinician. Etiologic factors associated with these tumours include renal calculi, infection, endogenous and exogenous chemicals, deficiency of vitamin A. These can also be seen even in absence of these predisposing factors.[3] Patient usually present with nonspecific signs and symptoms and even radiological investigations may not help to distinguish it from other neoplastic or nonneoplastic lesions of kidney.[4] We report a case of SCC of renal pelvis presenting as hydronephrosis without associated renal calculi.

Case Report

we present a case of 50-year-old male presenting with pain abdomen right side for 6 months and generalized weakness for 3 months. There was no ascites, lymphadenopathy, haematuria or fever .There was no history of past radiation or renal calculi. Routine haemogram, biochemical tests and chest x- ray were normal.

USG abdomen showed huge hydronephrosis of right kidney. Right ureter was normal. Left kidney was normal. CECT abdomen showed right hydronephrotic kidney with dilatation of pelvicalyceal system with distortion of normal parenchyma. Right Radical nephrectomy was done and

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sent for histopathological examination.

Gross examination showed distended kidney with minimal grossly visible renal tissue. There was loss of corticomedullary differentiation. On cut section large necrotic material filling the pelvicalyceal system was seen. Microscopic examination of H&E section showed moderately differentiated squamous cell carcinoma arising from renal pelvis invading muscle but not penetrating it and also involving whole of the renal parenchyma. The tumour showed extensive squamous differentiation with few identifiable residual tubules and glomeruli. Retroperitoneal soft tissue invasion and regional lymph node invasion were not seen in sections examined. Histological diagnosis of moderately differentiated squamous cell carcinoma of renal pelvis was made (PT2N0Mx).

Figure 1: Photomicrograph showing grossly distended kidney with large friable necrotic tumour mass along with surrounding narrow rim of normal parenchyma

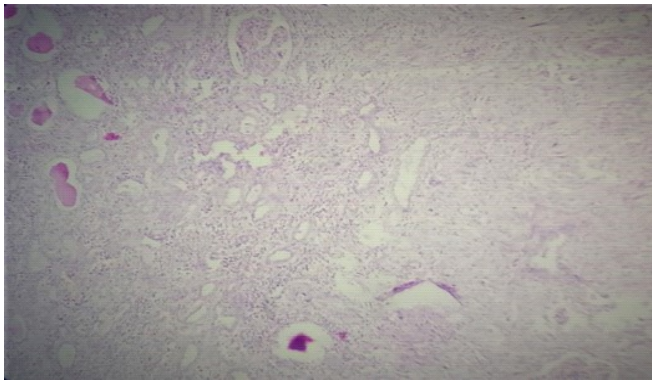

Figure 2: Photomicrograph showing residual tubules and glomeruli admixed with malignant squamous cell carcinoma foci (H&E,20X)

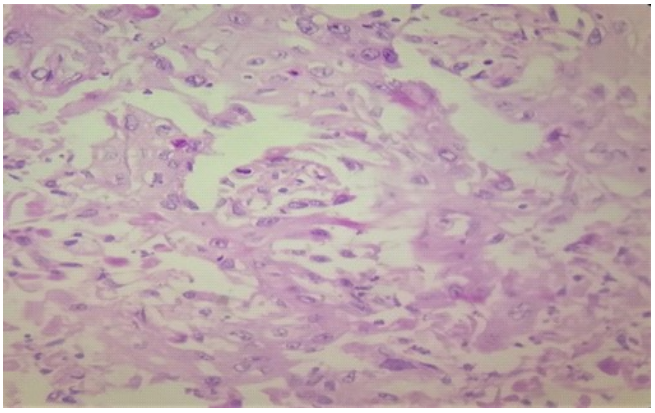

Figure 3: Photomicrograph showing a high-power view of moderately differentiated squamous cell carcinoma (H&E,40X)

Discussion

Most common type of renal malignancy is clear cell carcinoma followed by papillary carcinoma and chromophobe carcinoma. Primary SCC of renal pelvis is rare, aggressive tumour presenting at advanced stage. Its prognosis is poor as compared to other upper urinary tract malignancies.[5] There is female predominance with presentation most common in the age group of 50-70 years age. Clinical manifestations include abdominal pain, haematuria and abdominal mass. It also shows association with hydronephrosis. Renal calculi are seen in 87-100% cases. Other lesions associated are tuberculosis, chronic pyelonephritis, radiation, immunosuppression with azathioprine and previous percutaneous nephrolithotomy.[6]

For histopathological diagnosis of squamous cell carcinoma there should be presence of extensive squamous differentiation without any transitional differentiation. In case there is presence of significant urothelial element with in situ component, such tumours should be labelled as urothelial carcinoma with squamous differentiation. The later has better prognosis than squamous cell carcinoma of renal pelvis. Metastatic SCC of the kidney should also be ruled out by combination of clinical history, radiology and histopathological examination. In such cases histopathology of renal pelvis should be normal despite other findings.[7]

Surgery is the mainstay of treatment of these tumours and may result in cure in low stage tumours. Systemic therapy has marginal benefit only. The prognosis of patients with SCC of renal pelvis is very poor with median

survival of only 7 months after surgery and only 7.7% of patients survived longer than 5 years.[8] These tumours show poor response to surgery, radiotherapy and chemotherapy contributing to short survival.

As much data is not available about the etiopathogenesis of these tumours, it would require more case studies and pathological studies to establish risk factors for primary SCC of kidney. Despite the rarity of these tumours, these should be kept in mind as a possibility in dealing with cases of renal pelvic pathology.

Conclusion

SCC of renal pelvis are rare tumours having strong association with renal stones. However, they can also be seen without renal calculi presenting as hydronephrotic kidney as seen in our case. A diagnosis of malignancy should be considered in a hydronephrotic kidney or in cases of inflammatory pathology of renal pelvis even in absence of predisposing factors such as renal calculi or diabetes mellitus and careful search for any abnormal area must be done in the specimen received.

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Nil.

Conflicts of Interest

There are no conflicts of interest.

References

1. Zhang X, Zhang Y, Ge C, Zhang J, Liang P. Squamous cell carcinoma of the renal parenchyma presenting as hydronephrosis: a case report and review of the recent literature. BMC Urol 2020;20(1):107.
2. Sahoo TK, Das SK, Mishra C, Dhal I, Nayak R, Ali I, et al. Squamous cell carcinoma of kidney and its prognosis: a case report and review of the literature. Case Rep Urol 2015;2015:469327.
3. Bandyopadhyay R, Biswas S, Nag D, Ghosh AK. Squamous cell carcinoma of the renal pelvis presenting as hydronephrosis. J Cancer Res Ther 2010;6(4):537-9.
4. Brits NF, Bulane S, Wadee R. Primary squamous cell carcinoma of the kidney: a case report and review of the literature. Afr J Urol 2020;26(79):1-7.
5. Berz D, Rizack T, Weitzen S, Mega A, Renzulli J, Colvin G. Survival of patients with squamous cell malignancies of the upper urinary tract. Clin Med Insights Oncol 2012;6:11-8.
6. Sivaramakrishna B, Aron M, Ansari MS, Seth A, Goel R, Mundada OP, et al. Squamous cell carcinoma of the renal pelvis manifesting after percutaneous nephrolithotomy for long standing calculus. Int Urol Nephrol 2004;36(2):149-51.
7. Bhaijee F. Squamous cell carcinoma of the renal pelvis. Ann Diagn Pathol 2012;16(2):124-7.
8. Holmäng S, Lele SM, Johansson SL. Squamous cell carcinoma of the renal pelvis and ureter: incidence, symptoms, treatment and outcome. J Urol 2007;178(1):51-6.