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Original Research Paper

Pathology

PRIMARY SQUAMOUS CELL CARCINOMA OF KIDNEY- A COMMON CANCER AT A RARE SITE.

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ABSTRACT Primary Squamous Cell Carcinoma of kidney is a rare malignant tumor having very few cases documented in the world literature; usually have late presentation, aggressive behaviour and poor prognosis. High risk factors associated with this tumor are cigarette smoking, chronic inflammation or infection (tuberculosis, schistosomiasis e.t.c), analgesic overuse (mostly phenacetin drug overuse), renal calculi e.t.c. However, only very few cases are reported in literature without these associations. Radical nephroureterectomy is usually done for these tumors and histopathological examination plays a crucial role in the final diagnosis and staging of such a rare tumor.

We report a rare case of primary squamous cell carcinoma of kidney in a 42 year old female presenting with painless haematuria, pain abdomen, oliguria, loss of weight and appetite since one month. Our case was not associated with any of known high risk factors, so becomes more atypical and unusual.

KEYWORDS : Primary Renal Squamous Cell Carcinoma, painless haematuria, Radical nephrectomy, rare.

INTRODUCTION:-

Pure Renal Squamous Cell Carcinoma (RSCC) is a rare malignant tumor of kidney constituting only 0.5% to 8% of malignant renal tumors [1]. In majority of cases, renal cell carcinoma dominates malignant lesion from renal cortex. In collecting duct system of kidney, most common malignant tumor is transitional cell carcinoma [1].Pure RSCC is not associated with any other renal neoplasm and has no evidence of in situ or invasive urothelial differentiation [2]. It is usually seen in age group of 50-70 years, equally in males and females. Due to lack of any pathognomonic signs and symptoms, this tumor is usually diagnosed at an advanced stage having dismal prognosis.

CASE REPORT:-

42 year old female lady presented with painless haematuria, oliguria, right lumbar region pain which was non radiating and dull aching, fever with chills , weight loss and anorexia since one month. Urine was reddish and turbid in colour and on microscopic examination , it showed 14-18pus cell/hpf and plenty of RBC/hpf Ultrasonography abdomen showed bulky upper pole of right kidney. CECT abdomen and pelvis revealed large well defined heterogeneously enhancing lesion with multiple non – enchancing necrotic areas within, involving the mid and upper pole cortex of the right kidney posteriorly with minimal adjacent fat stranding. No calcifications were seen within. Right renal vein and IVC appeared normal. Few enlarged enhancing right hilar lymph nodes were seen. Final CECT Abdomen report of possibility of right renal neoplastic mass lesion with multiple necrotic areas was given.

Radical nephrectomy was done and specimen was sent for histopathological examination.

Grossly, Radical nephrectomy specimen was measuring 12 X 7 X 6 cm, comprising the right kidney measuring 11 X 6 X 6cm, 0.3 cm segment of the diameter and adrenal gland not identified. External surface of the specimen showed bulge at the upper pole, yellowish white in colour (Figure 1). On cut section, a 7.5 X 6.8 X 6 cm greyish white tumor was seen at upper pole of the kidney .Tumor showed large areas of hemorrhage and necrosis which were present predominantly in the centre of tumor. Tumor was seen mainly in the cortex with medullary and renal pelvicalyceal involvement. (Figure 2) Tumor invaded renal sinus. Perinephric adipose tissue, gerota's fascia was free of tumor. Renal vein did not show any tumor thrombus. Four lymph nodes were isolated, largest measuring 1.2 cm and smallest measuring 0.5 cm in size.

Histopathological report showed features of well differentiated squamous cell carcinoma. Tumor mass was composed of squamoid tumor cells arranged in sheets and nests. Individual tumor cells were large, pleomorhic, round to polygonal with vesicular nuclei, coarse chromatin, prominent nucleolus and moderate amount of cytoplasm, with areas of keratinisation and showed intracellular bridges. Malignant tumor involved the pelvicalyceal system and surrounding parenchyma. Mitosis noted was 1-2/hpf. Areas of necrosis and lymphovascular invasion were seen (figure3,4). Tumor did not invade the perinephric fat, renal vein and renal sinus fat. Renal artery cut margin, renal vein cut margin and ureteric cut margin were free of tumor. All four lymph nodes isolated were free from tumor. So final diagnosis given was Primary squamous cell carcinoma of right kidney, TNM (7 edition) Stage II: T2a N0 M x. Patient recovered after surgery. Patient was on follow-up on regular basis and had no evidence of any recurrence or metastasis.

DISCUSSION

Kidney and renal pelvis cancers are the nineth most common malignant cancer and rated as the 12th most common cause of all deaths occurring due to cancers.

Among all of the urothelial tumors, only 5-6% occurs in the renal pelvis and ureter [3]. Squamous cell carcinoma of the urothelial tract has its origin mainly via the process of squamous metaplasia of the urothelium due to chronic irritation .The high risk factors associated with chronic irritation are pre-existing renal stones or prior surgery for renal stones, analgesic abuse, cigarette smoking or radiotherapy, exogenous and endogenous chemicals, vitamin A deficiency, hormonal imbalance, schistosomiasis and tuberculosis, etc [4].Very few cases are reported without having association of predisposing factors [5]. Our case did not had any significant past history

regarding associated high risk factors.

Clinical symptoms of these patients include loss of weight and appetite, abdominal pain, haematuria, and palpable mass. Coskun HS et al has reported the association of paraneoplastic syndromes (e.g. hypercalcemia, leukocytosis & thrombocytosis) with squamous cell carcinoma of renal pelvis [6] but in our case no such association was seen.

SCC of renal pelvis is an aggressive tumor having bad prognosis.

Diagnosis of this rare tumor before operation is very difficult as the patient signs and symptoms are usually overlapped by other common diseases symptoms. Even Ultrasonography and CT scan does not help in exact diagnosis as they only give information regarding the anatomical extent of the tumor only. Preoperative urine cytology would help in early diagnosis. Sometimes due to their small size in initial stage they may not be detected radiologically and are discovered incidentally on histopathological evaluation of nephrectomy specimens. On immunohistochemistry, positive stains for RSCC are CK5/6,p63 and thrombomodulin.

On Histolopatholgical examination, about 25 % of RSCC (Renal squamous cell carcinoma) cases also show other histological patterns focally including lympho-epithelial, small cell, micropapillary, and sarcomatoid.

In holmang et al. study, RSCC with solid and papillary pattern had been seen in 14% of cases and most cases were high grade [7].

In Lee et al. Study [8], primary RSCC was classified on the basis of the location of the tumor into two categories-the central and the peripheral types. The central type showed more rates of lymph nodal metastasis and had poorer survival rates. The peripheral type usually presented with parenchymal thickening with perirenal infiltration.

Differential diagnosis of pure RSCC includes metastatic SCC (clinical and radiological findings help in solving the dilemma) and urothelial carcinoma with squamous differentiation(other areas on sectioning must show urothelial carcinoma).

CONCLUSION

Squamous cell carcinoma of the renal pelvis being a rare tumor and having ambiguous clinical signs, symptoms and radiological features, often gets missed clinically. Usually patients present at advanced stages. Tumor is highly malignant, metastasize early, resulting in poor prognosis. The present case emphasizes the importance of a combined clinical, radiological, surgical and histopathological approach for its early diagnosis and better management.

FIGURE 1 :- Gross image of right radical nephrectomy specimen. External surface showed yellowish white bulge at the upper pole.

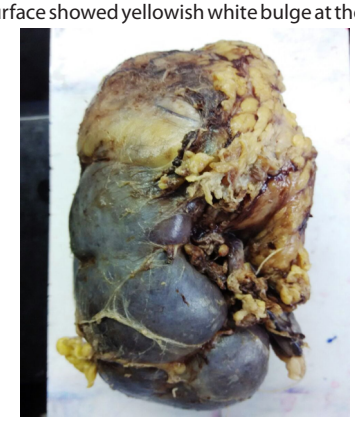


FIGURE 2:- On cut section, greyish white tumor was seen at upper pole of the kidney .Tumor showed large areas of hemorrhage and necrosis which were present predominantly in the centre of tumor. Tumor was seen mainly in the cortex with medullary and renal pelvicalyceal involvement

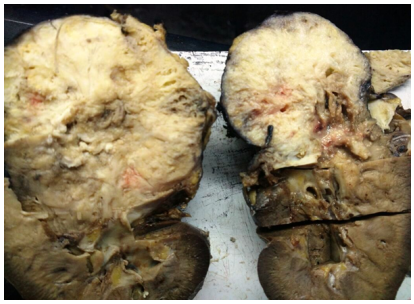


FIGURE 3:- H& E, 10X, Tumor mass was composed of squamoid tumor cells arranged in sheets and nests. Individual tumor cells were large, pleomorhic, round to polygonal with vesicular nuclei, coarse chromatin, prominent nucleolus and moderate amount of cytoplasm, with areas of keratinisation and showed intracellular bridges.

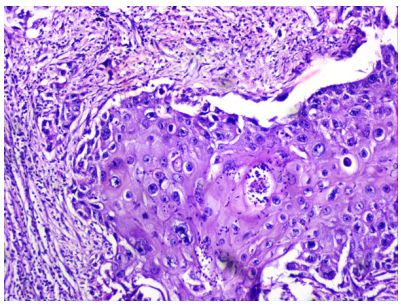
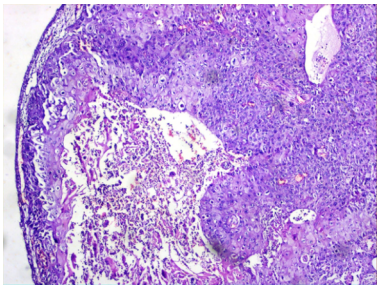


FIGURE 4:- H&E, 4X, showing features of well differentiated squamous cell carcinoma.



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REFERENCES

1. Inamdar S.S , Andola S. K., Laheru V. B.(2013). Squamous Cell Carcinoma Of Renal Pelvis-A Rare Case Report .Int J Med Health Sci 2:2.
2. Panhwa M, Pahwa AR, Girotra M, Chawla A. (2014) Atypical presentation of primary renal squamous cell cancer: a case report. Int J Cancer Ther Oncol;2(1):0201-5
3. Ayushi Jain et al. (2011) Incidentally Detected Squamous Cell Carcinoma of Renal Pelvis in Patients with Staghorn Calculi: Case Series with Review of the Literature. International Scholarly Research Network Oncology, Article ID 620574:1-6.
4. Orhan Tanriverdi et al. (2009) squamous cell carcinoma of left kidney presenting with splenic hematoma. Int J NephrolUrol 1(1): 65-8.
5. Talwar N, Dargan P, Arora MP, Sharma A, Sen AK. (2006) Primary squamous cell carcinoma of the renal pelvis masquerading as pyonephrosis: a case report. Indian J Pathol Microbiol.49:418-20.
6. Coskum HS et al. (2001) Rapidly relapsing squamous cell carcinoma of the renal pelvis associated with paraneoplastic syndromes of leukocytosis, thrombocytosis and hypercalcemia. Urol Int. 67(2):175-7.
7. Holmäng S et al. (2007) Squamous cell carcinoma of the renal pelvis and ureter: incidence, symptoms, treatment and outcome. J Urol 178(1):51-6
8. Lee TY, Ko SF, Wan YL, Cheng YF, Yang BY, Huang DL, et al. (1998) Renal squamous cell carcinoma: CT findings and clinical significance. Abdom Imaging 23:203-8.