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COLLISION TUMOR OF THE KIDNEY- PAPILLARY RENAL CELL CARCINOMA AND SQUAMOUS CELL CARCINOMA- A UNIQUE CASE REPORT.

Pathology

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ABSTRACT

Introduction: Papillary Renal Cell Carcinoma is a neoplasm of the kidney with clinicopathologic peculiarities which present as incidental masses discovered on imaging workup for other causes having independent origin. The reported 5-year disease-free survival is more favourable in papillary RCC than it is in clear cell RCC Also, it has been described in association with clear cell renal cell carcinoma, sarcomatoid renal cell carcinoma, medullary renal cell carcinoma and so on. Squamous renal carcinoma is a very rare neoplasm with a malignant course. We present a rare case of a collision tumor of the kidney having Papillary Renal Cell Carcinoma (RCC) and Squamous Cell Carcinoma which to the best of our knowledge, has not previously been reported.

Case Report: A 60 year old female patient presented with sudden onset of abdominal pain since 4 months. Provisional diagnosis given on the basis of radiological findings was malignant renal cell carcinoma. Final histopathological diagnosis given was Papillary Renal Cell Carcinoma (type 1) along with extensive areas of Squamous Cell Carcinoma, moderately differentiated involving whole of pelvicalyceal system with infiltration into renal parenchyma.

Conclusion: This case is being presented for its rarity as well as paucity of similar case in literature so far. Squamous cell carcinoma of the kidney usually behaves aggressively. Early diagnosis and surgical treatment before the tumor has extended beyond the capsule offer the best hope of cure.

KEYWORDS

Collision tumour, Papillary renal cell carcinoma, Squamous Cell Carcinoma.

BACKGROUND:

A collision tumor is characterized by the coexistence of two neoplasms (benign and malignant, or both malignant) growing in neighbouring anatomic regions but different tumour types with no histological admixture and forming a single lesion.[1] Collision renal tumours are uncommon but have been previously reported and can involve different histology of kidney carcinoma such as papillary RCC with Clear cell RCC,[2] papillary RCC with oncocytoma,[3] papillary RCC with medullary Carcinoma,[4] squamous cell carcinoma and osteogenic sarcoma of the kidney,[5] and clear-cell RCC with squamous cell carcinoma of the kidney,[6] Squamous renal cell carcinoma with Chromophobe renal cell carcinoma.[7] We describe a case of concomitant papillary renal cell carcinoma and squamous cell carcinoma of the kidney.

CASE REPORT

A 60-year-old female patient presented with left side abdominal pain since 4 months which is gradually increasing in intensity without haematuria, burning micturition and no other significant findings. Her general and physical examination were unremarkable. Routine blood investigations were within normal limits except for an increase in blood creatinine level 2.2 mg/dl. The ultrasonograpraphy showed hyper-echoic, ill-defined mass lesion with internal vascularity in upper pole of left kidney, and the CT revealed large heterogeneously enhancing hypodense mass lesion with large areas of central necrosis in left kidney involving the upper, middle and part of lower pole with loss of normal renal contour with extension to left renal vein and a few enlargement of lymph nodes. Provisional Diagnosis was given as Malignant Renal Cell Carcinoma.

Grossly, the kidney was enlarged measuring 16 Cm X 9 Cm X 6 Cm, bosselated without perinephric tissues or renal vein invasion. Cut Surface showed loss of normal corticomedullary architecture with large well circumscribed solid, greyish yellow to greyish white tumour measuring 7 Cm X 5 Cm 4 Cm, a few small cystic areas along with areas of haemorrhage and necrosis (Figure 1). Ureter was present 4 cm in the length. Renal calculi were absent. Renal pelvis and ureter were grossly involved. No lymph nodes were identified grossly.

Microscopically the tumour was composed of tumours cells arranged in complex branching papillae, glands and nests. Individual tumour cells were cuboidal to low columnar small in size, with scanty cytoplasm having uniform round nuclei and inconspicuous nucleoli (Figure 2). Nearby these areas there was another zone with solid epithelial nests with keratin pearls and obvious squamous differentiation (Figures 3). Sections from the area where both tumours were adjacent to each other are also seen (Figure 4). Large areas of haemorrhage and necrosis were present. Perineural invasion was present without lymphovascular invasion. Tumour was infiltrating the hilum and ureter. We studied carefully, the urinary tract was devoid of any urothelial neoplasm and did not found any signs of urinary tract infection or squamous metaplasia. The tumour did not invade gerato's fascia, perinephric tissues, adrenal gland or lymph nodes. The patient is alive without metastasis or recurrence after 15 months. **The final diagnosis was given as collision tumour consisting Papillary Renal Cell Carcinoma-type 1, nuclear grade-1 with extensive area of Squamous Cell Carcinoma, Moderately differentiated.**

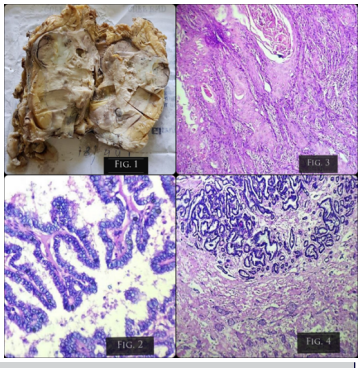

Figure 1: Enlarged left kidney showing a well circumscribed solid, greyish yellow to greyish white tumour involving almost whole of the kidney and distorting cortico-medullary demarcation.
Figure 2: (HE stain: 400 X) showed tumour cells arranged in complex branching papillae and tubules lined by pseudostratified columnar cells with inconspicous nuclei (Papillary renal cell carcinoma component: TypeI).
Figure3: (HE stain: 100 X) showed tumour cells arranged in sheets and nests with keratin pearls formation (Squamous Cell carcinoma component).
Figure 4: (HE stain: 40 X) showed Transition between two type of renal Carcinoma: Squamous cell carcinoma and papillary renal cell carcinoma.

DISCUSSION:

Squamous cell carcinoma accounts about 1% of renal neoplasms. A few cases of concomitant renal cell carcinoma and transitional cell carcinoma have been reported. [6-9] The simultaneous occurrence of renal cell carcinoma and squamous cell carcinoma is exceptional. The first case was reported by Elsa Valderrama et al in 1987.[6] Subsequently, Charles et al described the association of renal squamous carcinoma and cystic renal cell carcinoma;[7] renal pelvis squamous cell carcinoma with renal cell carcinoma in a tuberculous kidney[8] and Funez et al reported Squamous renal cell carcinoma with Chromophobe renal cell carcinoma.[7] To the best of our knowledge till now no case has been reported as collision papillary renal cell carcinoma with squamous cell carcinoma of the same kidney.

The histogenesis of the renal squamous carcinoma is controversial.[6,10]

The suggested mechanism is due to continuous chronic irritation by calculus and infection at the damage site, a plentiful of cytokines and chemokines get secreted by the lymphocytes, which promote the growth of tumour cells and contribute to the onset and progression of metaplastic squamous changes and subsequently malignant transformation. [11,12]

Papillary RCC accounts 11% to 20% of renal cortical neoplasms, with male predominance having male to female ratio as 3:1. Similar to other types of RCC, more than 50% of cases present as incidental masses discovered on radiological imaging. [13] In contrast to other RCC subtypes, papillary RCC are of independent origin.[14] Microscopically, the neoplastic cells can vary from having scant amphophilic cytoplasm with nuclei typically arranged in a single cell layer (so called type 1 papillary RCC) to having abundant highly eosinophilic cytoplasm with pseudostratified nuclei (type 2 papillary RCC). The reported 5-year disease-free survival is more favourable in papillary RCC than it is in clear cell RCC. [15, 16] Although the stage of the tumour has prognostic significance, the value of grading remains controversial.

Simultaneous papillary renal cell carcinoma and squamous renal carcinoma could present some questions. It has to be said that the macroscopic appearance favour a unique neoplasm and the careful study of the urinary tract did not show any urothelial neoplasm, urothelial dysplastic areas or any reason to justify irritation of the transitional epithelium. Curiously, Valderrama et al. did not found any of them in their case either. [6] Anyway, this case is either two concomitant different neoplasms or a differentiation in a papillary RCC, is a finding that has not previously been reported to the best of our knowledge.

CONCLUSION:

This case is being presented for its rarity as well as paucity of similar case in literature. Review of literature shows only a few cases of combined tumours of the kidney. To the best of our knowledge only two similar literatures are available in combination of squamous cell carcinoma with renal cell carcinoma but no reported case of papillary renal cell carcinoma with squamous cell carcinoma.

REFERENCES:

1. Bartos V. Collision tumour of the kidney composed of clear cell renal cell carcinoma and papillary renal cell carcinoma-A report of a unique case, J Res Med Dent Sci, 2018;6 (4):77-80
2. Ross H, Martignoni G, Argani P. Renal Cell Carcinoma with Clear Cell and Papillary Features. Archives of Pathology & Laboratory Medicine: April 2012; 136(4):391-399.
3. Vasuri F, Fellegara G. Collision renal tumors. Int J Surg Pathol. 2009;17:338-9.
4. Elaine T. Lam, Elizabeth R. Kessler, Thomas W. Flaig, and Francisco G. La Rosa. Collision Renal Cell Papillary and Medullary Carcinoma in a 66-Year-Old Man. Diagnostic Imaging September 2013;27:9
5. Rothschild J, Bhatt S, Dogra VS. Renal collision tumor in association with xanthogranulomato pyelonephritis. J Clin Imaging Sci. 2011;1:9.
6. Valderrama E, Kalra J, Badlani G, Kahn LB. Simultaneous renal cell carcinoma and squamous cell carcinoma of the kidney. Urology. 1987;29:441-5.
7. Fúnez R, Pereda T, Rodrigo I, Robles L and González C. Simultaneous Chromophobe renal cell carcinoma and squamous renal cell carcinoma. Diagnostic Pathology 2007, 2:30
8. Charles RS, Wein AJ, Wilczynski S, Tomaszewski JE, Hanno PM: Cystic renal cell and squamous cell carcinoma of single kidney with concurrent transitional cell carcinoma of ipsilateral ureter and urinary bladder. Urology 1992, 39(5):470-472.
9. Al-Assiri M, Al-Otabi MF, Sicar K, Laplante M: Renal pelvis squamous cell carcinoma in a tuberculous kidney. The Scientific World Journal 2004, 4:965-968.
10. Maganto E, Escudero A, Sanchez J, Lopez F, Martinez-Pineiro JA: Carcinoma escamoso de la pelvis renal. Rev Clin Esp 1977, 146:103.
11. Federico A, Morgillo F, Tuccillo C, Ciardiello F, Loguercio C. Chronic inflammation and oxidative stress in human carcinogenesis. Int J Cancer 2007;121:2381-6.
12. Bhaskar V, Wasnk M, Prasad D. Squamous Cell Carcinoma of Pelvicalyceal System Completely Replacing Renal Parenchyma - An Incidental Finding: A Case Report. Int J Sci Stud 2018;6(9):1-2.
13. Reuter VE, Tickoo SK. Adult renal tumors. In: Mills SE, ed. Sternberg's Diagnostic Surgical Pathology. Vol 2. 5th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2009:1757–1798.
14. Jones TD, Eble JN, Wang M, MacLennan GT, Delahunt B, Brunelli M et al. Molecular genetic evidence for the independent origin of multifocal papillary tumors in patients with papillary renal cell carcinomas. Clin Cancer Res. 2005;11(20):7226–7233.
15. Amin MB, Amin MB, Tamboli P, Javidan J, Stricker H, de-Peralta Venturina M, et al. Prognostic impact of histologic subtyping of adult renal epithelial neoplasms: an experience of 405 cases. Am J Surg Pathol. 2002;26(3):281–291.
16. Cheville JC, Lohse CM, Zincke H, Weaver AL, Blute ML. Comparisons of outcome and prognostic features among histologic subtypes of renal cell carcinoma. Am J Surg Pathol. 2003;27(5):612–624.