Case Report

Papillary renal cell carcinoma in 40 years old male patient: A case report

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Abstract

Renal cell carcinoma (RCC) is heterogeneous disease which is having different histological variants with a distinct clinical course and genetic changes. Papillary renal cell carcinoma is an uncommon variant of renal cell carcinoma. It is considered to be a less aggressive tumour. This tumour has better prognosis than that for non-papillary renal tumours. As the prognosis of Papillary RCC depends upon early detection and typing of the RCC, meticulous histopathological examination of nephrectomy specimen is must.

Key words

Renal cell carcinoma, Papillary, Nephrectomy.

Introduction

Renal cell carcinoma is the most common neoplasm of the kidney [1, 2]. This malignant neoplasm accounts about 2-3% of all cancers. Papillary renal cell carcinoma is an uncommon variant of renal cell carcinoma. It is considered to be a less aggressive tumor. This tumour has better prognosis than that for non-papillary renal tumors. The possibility of papillary renal cell carcinoma should be considered even when the tumour is small and well circumscribed otherwise they are likely to be missed completely on gross examination. Here in we are presenting a case of 40 years male patient with diagnosis of Papillary renal cell carcinoma where we are able to find and document the typical features of Papillary renal cell carcinoma.

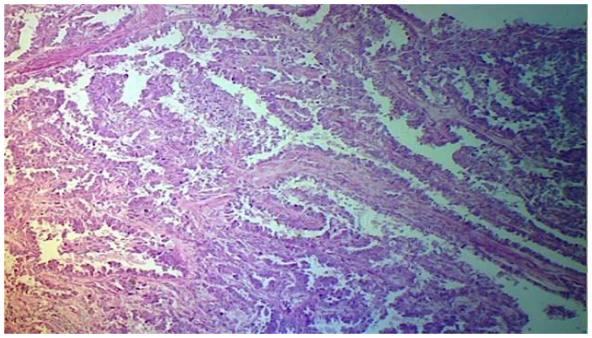
Case report

A 40 years old male patient came to surgery OPD with chief complain of mass in the right loin region. The ultrasound examination revealed

a huge renal lump on the right side of abdomen. Abdominal contrast-enhanced computed tomography (CT) revealed one enhancing lesion in the right kidney (a 4 cm mass in the interpolar region). All the other hematological and serological examinations were with in normal limit. The patient was underwent right sided nephrectomy and the specimen was sent to the histopathology department. Macroscopically nephrectomy specimen measured 8x4x4 cm. The entire specimen including the attached perirenal fat weighed 750 gm. The capsule of the kidney was seen adherent to this fat. Kidney showed granular external surface and a well circumscribed nodule, measuring 4x3.5 cm in the interpolar region with necrotic and haemorrhagic areas.

Microscopic examination revealed a tumour with papillary configuration lined by a single layer of cells with clear to oncocytic cytoplasm and large vesicular round nuclei. Many of the papillary structures contained foamy macrophages within their cores. Based on current diagnostic criteria, the features were those of a type I papillary RCC (**Photograph - 1, 2, 3**) of Fuhrman nuclear grade 2. There was no involvement of the renal capsule or perinephric fat by the tumor, no vascular space invasion was identified and the margins of resection were clear.

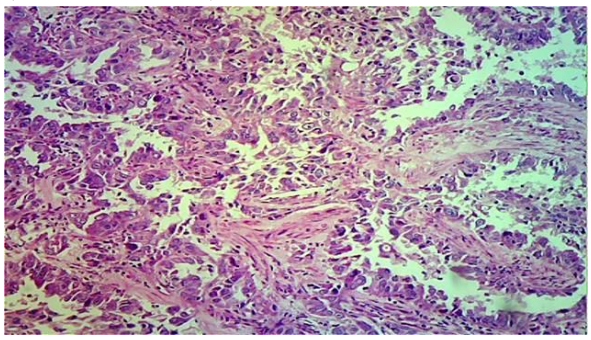
Photograph – 1: Tumour showing papillary configuration (H&E Stain, 10X).



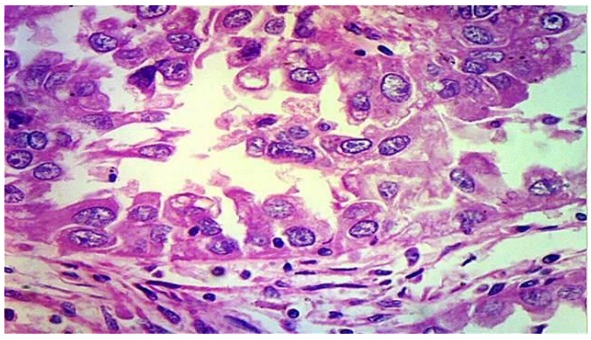
Discussion

Renal cell carcinoma is heterogeneous disease which is having different histological variants with a distinct clinical course and genetic changes [1-3]. The categorization of renal cell carcinoma is based on the World Health Organization (WHO) classification [2, 4]. The most common subtype of renal cell carcinoma is clear cell accounting 75%, papillary follows about 10%, chromophobe 5% and undifferentiated 10% of all cases [1-5]. Each of these neoplasms has characteristic histological and/or immunophenotypic features and genetic/Chromosomal alterations specific to each type have been identified [6].

Photograph – 2: Tumor with papillary configuration lined by a single layer of cells (H&E Stain, 20X).



Photograph – 3: The tumor cells with clear to oncocytic cytoplasm and large vesicular round nuclei (H&E Stain, 40X).



Papillary RCC has papillary or tubulopapillary architecture1 and two morphological subtypes are recognised. Type 1 tumours consist of papillae covered with a single layer of small cells with scanty cytoplasm and low-grade nuclei. In type 2 tumours, the cells covering the papillae are pseudostratified, generally have eosinophilic cytoplasm and are usually of higher nuclear grade than the cells of type 1 tumours [7]. The histogenesis of papillary RCC is unclear, with evidence suggesting that the cell of origin resides

in the proximal or distal tubule [8, 9]. At the cytogenetic level, the most common karyotypic changes in papillary RCC are trisomy of chromosomes 7 and 17, and loss of chromosome Y [10].

The microscopic features in our case fitted in very well with descriptions of papillary renal cell carcinoma by several authors. Based on size alone, it is difficult to distinguish a papillary cortical adenoma from a papillary carcinoma. However, the presence of calcification, well formed Psammoma bodies, haemorrhage and necrosis go in favour of the latter. Type I papillary renal cell carcinomas and papillary adenomas closely correspond both morphologically and cytogenetically and size (5 mm is the feature that distinguishes the two entities.

Papillary renal cell carcinoma has unique features including hypovascularity or avascularity, extensive stromal macrophage infiltration and better prognosis than that for non-papillary renal cell carcinoma [11].

Conclusion

The possibility of papillary renal cell carcinoma should be considered even when the tumor is well circumscribed. It is of great importance to be aware of this entity considering its relatively better prognosis and the subsequent five-year survival rate. This subtype differs from renal cell carcinoma in having different karyotype.

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