



## Papillary renal cell carcinoma – a case report

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### ABSTRACT

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.

The possibility of papillary renal cell carcinoma should be considered even when the tumour is small and well circumscribed.

*Keywords:* Papillary neoplasm; Kidney; Renal cell carcinoma.

### INTRODUCTION

Renal cell carcinoma is known to give rise to varied histological features. Several areas may show a mixture of non-papillary areas with papillary areas. It is rare for a renal cell carcinoma to exhibit exclusively papillary pattern. Papillary renal cell carcinomas in addition, are likely to be missed completely on gross examination as this tumour is likely to remain small and unifocal.

### CASE HISTORY AND PATHOLOGY

A seventy-three year male patient presented with a mass in the left loin for about four weeks. The ultrasound examination revealed a huge renal lump on the left side. A fine needle aspiration was contemplated and was subsequently carried out under ultrasound guidance. The pathologist's report of 'renal cell carcinoma' on FNAC promptly resulted in the left sided nephrectomy. The operating surgeon did not notice any gross abnormality in the kidney proper. However, a large perinephric haematoma and marked fibrosis were noted.

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**Gross examination:** 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 2x1.5 cm on the antero-lateral surface with necrotic and haemorrhagic areas (Fig. 1).

**Fig. 1:** Kidney with tumour nodule held by the forceps.

**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 (Fig. 2).

**Fig. 2:** Tumour showing papillary configuration along with cholesterol clefts. (H&Ex25)

The cores of the papillae were packed with foam cells in the areas (Fig. 3). The tumour showed foci of calcification and well formed Psammoma bodies. An organizing haematoma was seen external to the tumour and the renal parenchyma. The rest of the kidney uninvolved by the tumour showed glomerular changes ranging from periglomerular fibrosis to complete hyalinisation with focal increased mesangial cellularity. Thickening of the basement membrane was also noted. The perirenal fat showed fibrosis, fat necrosis with foam cells and organizing haematoma.

**Fig. 3:** Papillary cores packed with foam cells. (H&Ex100)

## DISCUSSION

Papillary renal cell carcinoma has unique features including hypovascularity or avascularity, extensive stromal macrophage infiltration and better prognosis than that for nonpapillary renal cell carcinoma.<sup>1</sup> Renal cell carcinomas have a great diversity of microscopic appearance consisting of different cell types arranged in a variety of patterns. The major patterns are diffused, alveolar, tubular cystic, papillary and sarcomatoid, occurring alone or more commonly in combination.<sup>2</sup> 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. It is now widely accepted that all 'adenomas', regardless of size, should be considered Robson's stage I renal cell carcinoma.<sup>3,4</sup> It is not yet clear whether the tumour cells stain for the renal cell carcinoma-associated antigen G250. This is most specific and recognizes renal cell carcinoma and does not stain normal renal tissue or benign renal tumours.<sup>4</sup> Cytogenetically, papillary renal cell carcinoma is characterized by trisomy 7 and 17 with the loss of 'Y' chromosome. Diagnosis of this variant is easy when there is absence of solid, alveolar

and clear cell pattern and a negative reaction of vimentin.<sup>5</sup> Currently, high incidences of papillary renal tumours are being reported in patients on chronic haemodialysis.<sup>6</sup>

## CONCLUSION

The possibility of papillary renal cell carcinoma should be considered even when the tumour is small and 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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