

## Oncology

## Ipsilateral synchronous clear and papillary renal cell carcinoma: A case report and review of the literature



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## ABSTRACT

Clear cell renal cell carcinoma and papillary renal cell carcinoma are the most common types of renal tumors. However, coexistence of both tumors in the same kidney is a rare condition.

We report a 56-year old male who was found to have ipsilateral synchronous clear cell and papillary renal cell carcinoma in the left kidney. Review of related literature is provided to estimate the prevalence of similar cases.

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## 1. Introduction

Renal cell carcinoma (RCC) accounts for 2–3% of all cancers.<sup>1</sup> There is a 1.5:1 predominance of men over women, with peak incidence occurring at 60–70 years old. Etiology includes lifestyle factors, such as smoking, obesity, and hypertension, with cigarette smoking being a definite risk factor for RCC. On the other hand, obesity and hypertension roles as risk factors for RCC are still inconclusive.<sup>2,3</sup>

Clear cell (cc RCC) accounts for 75% of RCC cases, papillary RCC (pRCC) represents 10% of cases, and chromophobe RCC, 5% of cases.<sup>3</sup> Clear cell papillary renal cell carcinoma (ccpRCC) has recently been reported and is considered a distinct subtype, composed of cells with clear cytoplasm lining cystic, tubular, and papillary structures.<sup>4</sup>

The incidence of sporadic multifocal tumors is 4–20% of patients at the time of diagnosis.<sup>5–8</sup> Multiple synchronous renal tumors can be associated with genetic predisposition to RCC, as in hereditary familial RCC syndrome, or acquired conditions, like chronic kidney disease, which has the tendency to develop bilateral pRCC.<sup>9</sup> Sorbellini et al. reviewed the literature to estimate the prevalence of multifocal RCC and revealed 6.8% incidence of ipsilateral multifocal RCC and 11.7% were bilateral.<sup>10</sup>

Several cases of multifocal RCC that had two or more tumors of different histologic subtypes have been reported.<sup>5,11–16</sup>

Herein, we report an unusual case of coexistence of two different synchronous ipsilateral renal tumors; clear-cell RCC and papillary RCC.

## 2. Case report

We report a case of a 56 year-old gentleman who underwent abdominal CT with IV contrast during evaluation of newly diagnosed high blood pressure which revealed A unilateral synchronous two kidney lesions and one renal cyst. The first lesion was in the upper pole left renal pole, measuring 5 cm and indenting the splenic surface with no definite invasion; the second lesion was invading the renal sinus fat; and the third lesion was hemorrhagic cyst in the lower pole of the left kidney measuring about 2 cm. There is an enlarged pathological left para-aortic lymph node measuring 2.2 × 1.6 cm. There is a separate enhancing soft tissue nodule in the left adrenal gland measuring 1.6 cm; this nodule might represent metastasis. [Figs. 1 and 2.](#)

A true cut biopsy of one of the nodules showed the histopathologic features of renal cell carcinoma, the conventional type while a fine needle aspiration of the second nodule came negative.

Physical examination was normal. Hematological and biochemical tests were unremarkable.

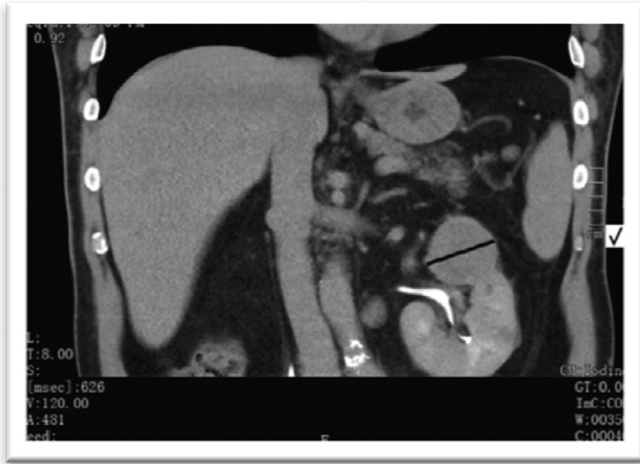
Patient underwent laparoscopic left radical nephrectomy and adrenalectomy with para-aortic lymph nodes dissection and he was discharged from hospital after 3 days without events.

Grossly, the first nodule was in the upper pole, confined to the capsule and measuring 5 × 4.5 × 4cm with solid and cystic hemorrhagic cut surfaces; the second nodule was in the middle pole

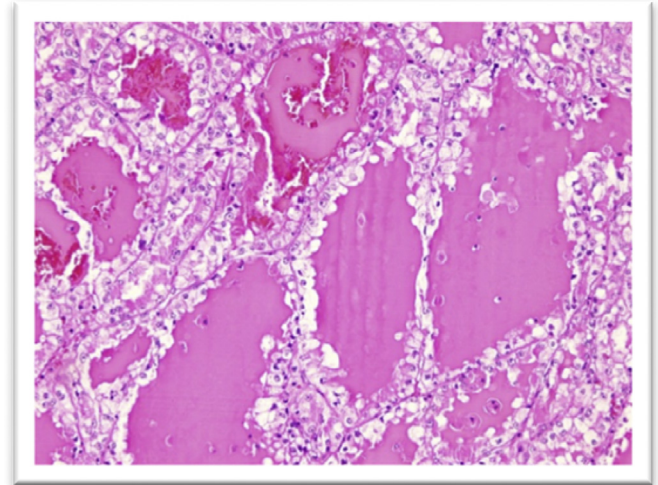
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**Fig. 1.** Left renal upper pole nodule.



**Fig. 3.** Clear cell renal cell carcinoma.

confined to the kidney, indenting the sinus fat and measuring  $4.5 \times 3.5 \times 3.5$  cm with solid cut surfaces. Benign hemorrhagic renal cyst found in the lower pole. Left adrenal showed a small nodule measuring  $0.5 \times 0.5 \times 0.5$  cm. Para-aortic lymph nodes showed one lymph node grossly positive for malignancy and measuring  $2.5 \times 2.5 \times 2$  cm.

Microscopic examination of the specimen showed one tumor in the upper pole consistent with the histopathological subtype clear cell of renal cell carcinoma, with the pathologic stage: pT1bN0 (Fig. 3). The second tumor was in the middle pole and it was the subtype papillary renal cell carcinoma, type 2 and its stage was pT1bN1 (Fig. 4). Sarcomatoid features were absent. Histologic Grade (Fuhrman Nuclear Grade) was 2. Para-aortic lymph nodes revealed metastatic papillary renal cell carcinoma in one out of the twenty lymph nodes that were dissected and adrenal gland with focal hyperplasia.

### 3. Review of the literature

#### Methods

We underwent a review of the English-written literature using PubMed looking for these terms: “synchronous clear cell papillary

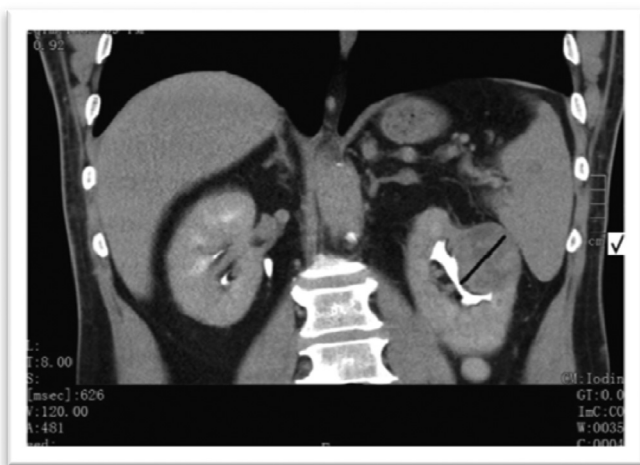
RCC” and “multifocal RCC”. Besides, we reviewed the references of the available articles. Papers that did not mention the frequency of multifocal RCC or its laterality were excluded. 10 articles fulfilled our criteria, plus 3 case reports.

#### Results

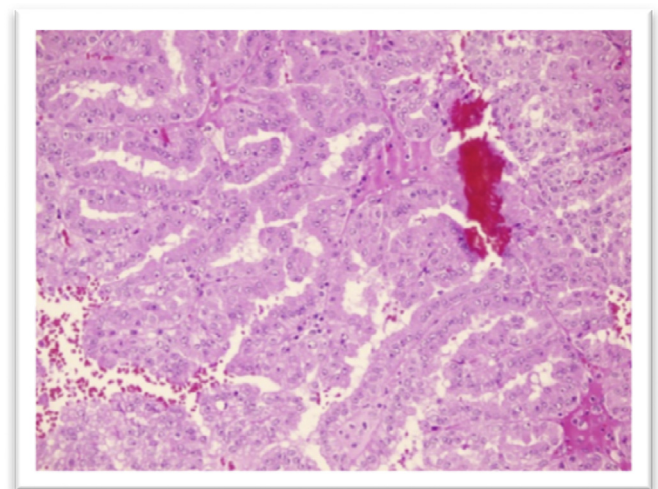
About 47 cases of ipsilateral synchronous clear cell renal cell carcinoma and papillary renal cell carcinoma were reported in literature (Table 1). Ipsilateral multifocal renal tumors occur in 0.5–5.4% of the total number of renal tumor patients. About 13–14% of this small subset of patients will develop cases of ipsilateral synchronous ccRCC + pRCC tumors as shown by four series.<sup>11–13,16</sup> Capaccio et al. reported a higher percentage, 42.8%, while Minervini reported a lower one, 5.9%.<sup>14,15</sup>

### 4. Discussion

Awareness of the coexistence of multiple synchronous tumors of different histology within the same kidney is important in managing such cases, especially when planning for nephron-sparing



**Fig. 2.** Left renal middle pole nodule.



**Fig. 4.** Papillary renal cell carcinoma.

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