

# A Primary Carcinoid Tumor of Kidney

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## INTRODUCTION

Carcinoid tumors frequently develop in the gastrointestinal tract and the respiratory system.<sup>(1)</sup> Those originating from the kidneys are exceptionally rare. Less than 45 cases of primary carcinoid tumors of the kidney have been reported in the English literature, so far.<sup>(2-4)</sup> We herein report another case of primary renal carcinoid tumor found in a 44-year-old woman.

## CASE REPORT

A 44-year-old woman presented with a 6-month history of increasing constant left flank pain. She had no urinary symptoms. Her past medical history was unremarkable. On physical examination, a left flank mass was bimanually palpable. Laboratory test results including blood counts, blood chemistry, and urinalysis

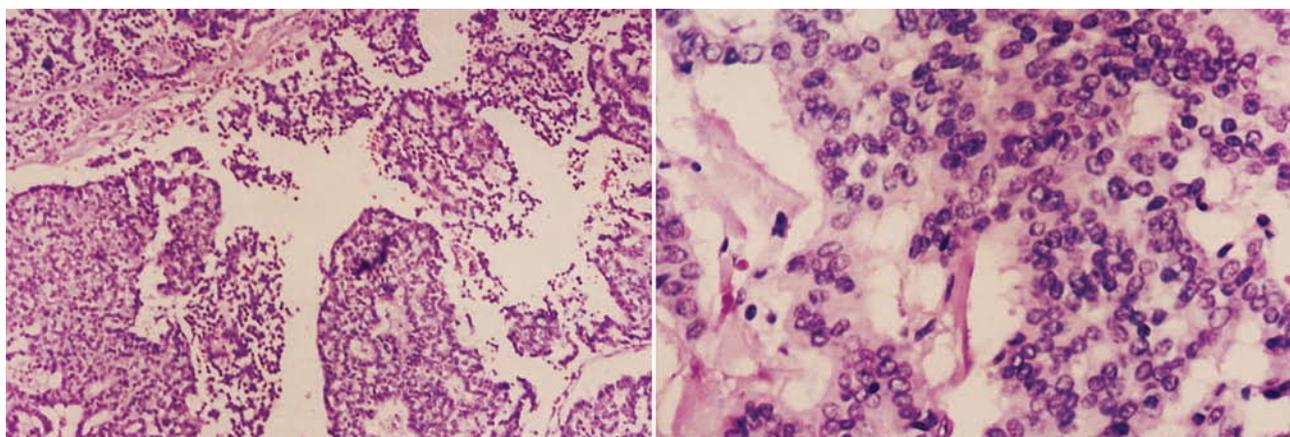
were normal. Ultrasonography and computed tomography of the kidneys revealed an 8 × 6.5-cm heterogenous mass in the lower pole of the left kidney. Chest radiography showed no abnormal findings. Renal cell carcinoma was suspected and the patient underwent left radical nephrectomy. On surgery, the tumor had replaced most of the middle and lower pole of the left kidney. No extrarenal or renal vein invasion or lymphadenopathy was observed.

Pathologic examination showed the tumor with tubules and acini lined by cells with uniform round nuclei and pink cytoplasm (Figure). Scanty mitoses were seen. Staining with monoclonal antibodies showed the tumor tissue to be positive for neuron specific enolase, chromogranin,

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**Left**, The tumor tissue composed of tubules and acini lined by cells with uniform round nuclei and pink cytoplasm are seen (hematoxylin-eosin, × 200). **Right**, High-power microphotograph of the same field of the specimen is shown (hematoxylin-eosin, × 400).

cytokeratin MNF, and cytokeratin CAM 5.2. The tumor was confined within the renal capsule and no perinephric invasion was detected. The hilar blood vessels and the ureter were free of tumor. Diagnosis of carcinoid tumor was made in the kidney.

Postoperative recovery was uneventful. Postoperative colonoscopy and upper gastrointestinal endoscopy revealed no abnormality pertaining to gastrointestinal source of the tumor. Urinary 5-hydroxyindoleacetic acid level was within the reference range 3 months after the operation. The patient remained free of symptoms and no radiologic evidence of recurrence was found at 5-year follow-up.

## DISCUSSION

Carcinoid tumors are thought to arise from neuroendocrine cells. Primary carcinoids of the kidney have no predilection for a specific sex, age group, or side of the tumor. Although their etiology is not well understood, there is increased risk of developing carcinoid tumor in patients with horseshoe kidney and other congenital malformations.<sup>(5)</sup> These tumors usually present with vague symptoms and signs. Flank pain and mass are common presenting symptoms, but an overt endocrine disturbance including carcinoid or Cushing syndrome has been reported.<sup>(6,7)</sup> Fever, hematuria, and obstructive voiding symptoms are other presenting symptoms of these patients. Therefore, the clinical picture is not generally different from that of a renal cell carcinoma.

Carcinoid tumors are usually well circumscribed, tan to yellow, solid fleshy tumors with areas of necrosis and cystic degeneration. Most carcinoid tumors of the kidney are large at the time of nephrectomy, and as exemplified in our case, replace a major portion of the renal parenchyma. Primary carcinoid tumors of the kidney are similar to those in other sites of the body. Tumor cells are arranged in ribbons, festoons, and solid

neests. Neoplastic cells are uniform cuboidal to columnar cells with abundant pink granular cytoplasm and small, round, and regular centrally located nuclei. Mitotic activity and vascular invasion are rare. Usually, carcinoid lesions in the kidneys exhibit a less aggressive biologic behavior than renal cell carcinoma, but undoubtedly they have a malignant potential and metastases have been reported. Histological features are usually not helpful in predicting biological behavior of such tumors; however, stage at presentation is the most important factor in determining the outcome.<sup>(5,8)</sup>

## CONFLICT OF INTEREST

None declared.

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