CONCURRENCE OF PRIMARY RENAL CELL CARCINOMA AND ITS POLYPOID INTRALUMINAL METASTASIS INTO THE SMALL INTESTINE: CASE REPORT

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SUMMARY – A case is reported of metastatic renal cell carcinoma in the wall of the small bowel. The patient presented with abdominal pain, hematuria and fever. Exploration during radical nephrectomy revealed a metastatic tumor into the small bowel, which was resected at once. Pathologic examination showed stage T4N2M1 renal cell carcinoma, nuclear grade G4, containing sarcomatoid and clear cell areas. Clinically, metastasis of renal cell carcinoma into the small bowel is a rare disease. To our knowledge, only a few cases have been reported to date.

Key words: *Kidney neoplasms, pathology; Kidney neoplasms, complications; Intestinal neoplasms; Carcinoma, secondary; Case report*

Introduction

Secondary neoplasms of the small bowel are infrequently encountered by clinicians. Indeed, it has been reported that small bowel is involved by metastatic tumors in *2%* of autopsies, and metastatic renal cell carcinoma accounts for 7.1% of these tumors[1].

Case Report

A 55-year-old man presented with abdominal pain, fever and weight loss. Medical history included anemia, hypertension and hematuria. Physical examination showed left renal mass confirmed by ultrasound. Computed tomography (CT) scan revealed a left kidney tumor sized 13x10 cm, consistent with renal cell carcinoma (RCC) with invasion into the renal vein. There were no lymph node, lung, or liver metastases. On left radical nephrectomy, a bright yellow-white soft tumor with capsular and vascular invasion into the renal vein was removed. During surgery, a solid tumor was resected from the small bowel and T-T anastomosis was created. The rest of the bowel was normal, and mesenteric pulsations were palpated throughout the grossly normal-appearing small bowel.

Histopathologic examination revealed an RCC with a solid pattern of growth, sarcomatoid cell type and clear cell type, nuclear grade 4. On longitudinal section, there was a tumor measuring 10.5x13.0x10.5 cm, involving almost entire parenchyma of the kidney, extending through the capsule and infiltrating the surrounding fat tissue (Fig. 1a). The tumor seemed to be of soft consistency, composed of a bright yellow-white tissue. There were also areas of hemorrhagic discoloration and opaque gray-white necrosis.

Microscopically, most of the examined tumor tissue was composed of atypical spindle cells with bizarre nuclei and numerous mitoses. These cells showed a solid growth pattern, only focally forming sheaths. The tumor had a delicate branching vasculature. Around the blood vessels, scanty atypical oval cells with abundant clear cytoplasm and hyperchromatic polymorphic nuclei were observed. An extremely great portion of the tumor tissue was necrotic. Tumorous spindle-shaped cells were found in the surrounding parenchyma of the kidney and were infiltrating through the capsule into the adjacent fat tissue (Fig. 1b). A 4.5-cm long small intestine segment with a tumorous mass of 2.5 cm in diameter was simultaneously referred for pathohistologic examination (Fig. 2a). The base of the

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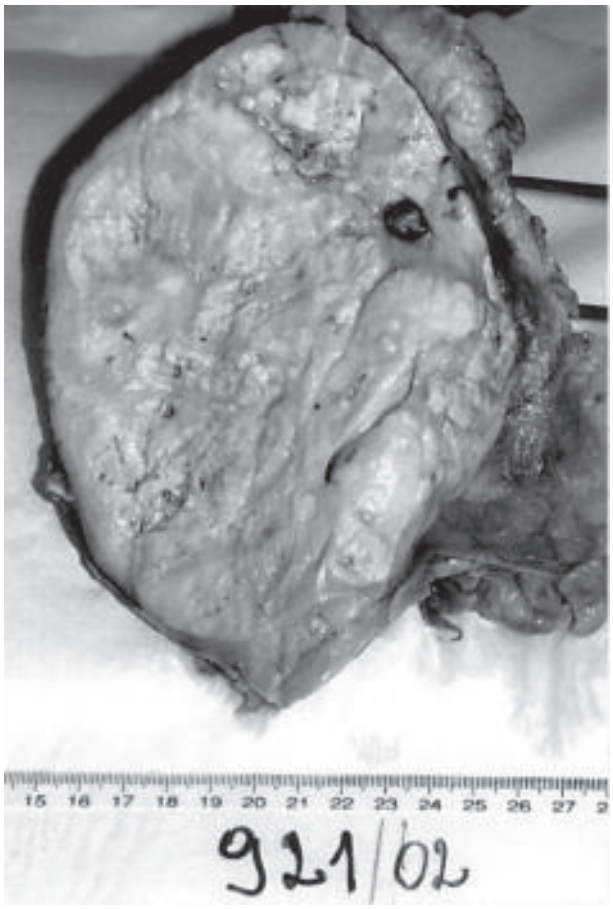


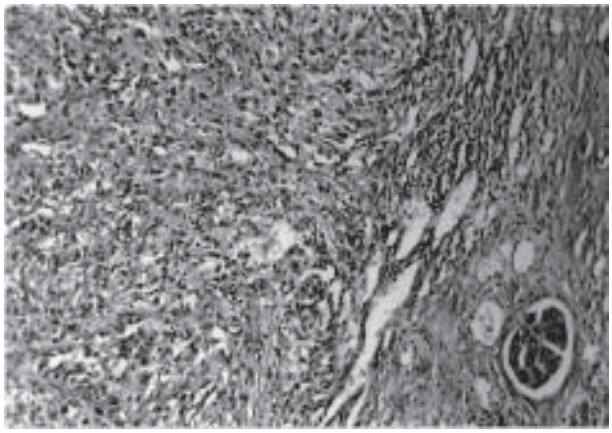
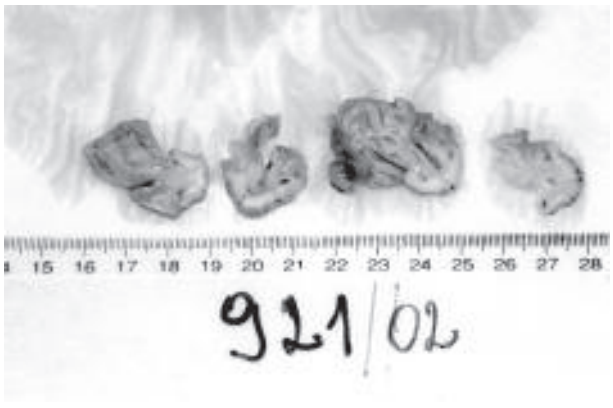


Fig. 1. (a) Renal cell carcinoma; (b) tumor tissue composed of atypical spindle cells with bizarre nuclei and numerous mitoses.

tumor extended from the mucosa. On longitudinal section, it appeared homogeneous, whitish, and somewhat more solid in consistency.

Microscopically, the material was part of the small bowel with tumor-invaded mucosa and submucosa. The tumor mass consisted of cells with clear cytoplasm and rare but observable spindle cells (Fig. 2b). All other cell features as well as the pattern of growth were identical to those found in the primary RCC. Various tests indicated the metastasis to the small bowel to have originated from RCC. The tumor of the kidney and the metastasis of the small bowel responded similarly and very strongly to immunohistochemical stains, i.e. they were positive for cytokeratin, and highly positive for vimentin. Based on the microscopic and histologic findings as well as on data from the cases reported in the literature, we are positive that a tumor of small intestine can be a very rare location of RCC metastasis.



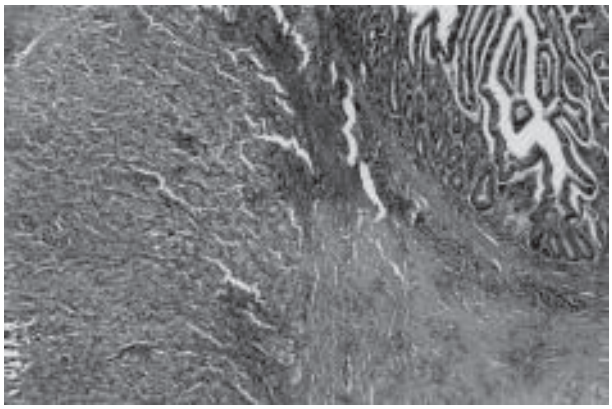


Fig. 2. (a) Renal cell carcinoma metastatic to the small intestine; (b) the tumor showing a clear cell pattern that was histologically identical to the preceding renal cell carcinoma.

Discussion

According to Viadana *et al.*, hematogenous metastasis of kidney cancer may be satisfactorily explained by the fact that renal carcinoma first metastasizes to the lung, which is considered a key site, *via* renal vein and inferior vena cava. From there, the cancer metastasizes systemically to various organs. Since bilateral lung metastasis in the patient described was thought to have occurred prior to the metastasis to the small bowel, the latter may have developed through the lung[1]. The occurrence of a solitary or multiple metastatic lesions from RCC affecting the small intestine and colon is rare. In a 50-year review done by the Mayo Clinic, only three cases of metastatic RCC to the small bowel were reported, not including cases of direct tumor extension[2]. Patients with RCC rarely have metastases to the small intestine. So, Gordon *et al.* found its incidence to be *2%*[3]. Hematogenous metastases to the small bowel are uncommon, and usually occur from malignant melanoma, and bronchial and colonic neoplasms. Less common primary sites include the breast, kidney, testis and ovary. In patients with a known primary malignancy, consideration of the diagnosis of isolated bowel metastasis is important in those presenting with a wide variety of abdominal symptoms[4].

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Sažetak

ISTODOBNA POJAVNOST PRIMARNOG KARCINOMA BUBREŽNIH STANICA I NJEGOVE POLIPOIDNE INTRALUMINALNE METASTAZE U TANKOM CRIJEVU: PRIKAZ SLUČAJA

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Prikazan je slučaj karcinoma bubrega koji je metastazirao u tanko crijevo. Bolesnik je došao s bolovima u abdomenu, hematurijom i povišenom temperaturom. Za vrijeme radikalne nefrektomije otkriven je metastatski tumor u tankom crijevu, koji je odstranjen. P atohistološka analiza pokazala je stadij T4N2M1 bubrežnog karcinoma koji je bio građen od vretenastih i svijetlih stanica. Metastaziranje bubrežnog karcinoma u tanko crijevo dosta je rijetko. P rema našem saznanju opisano je samo nekoliko slučajeva.

Ključne riječi: *Bubrežne neoplazme, patologija; Bubrežne neoplazme, komplikacije; Crijevne neoplazme; Karcinom, sekundarni; Prikaz slučaja*