Solitary Synchronous Metastatic Gastric Cancer Arising from T1b Renal Cell Carcinoma: A Case Report and Systematic Review

Mi-Young Kim*, Hwoon-Yong Jung*, Kee Don Choi*, Ho June Song*, Jeong Hoon Lee*, Do Hoon Kim*, Kwi-Sook Choi*, Sun A Kim†, Gin Hyug Lee*, and Jin-Ho Kim*

*Department of Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, and Asan Digestive Disease Research Institute, and †Department of Pathology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Metastasis to the stomach from renal cell carcinoma (RCC) is extremely rare. Usually, gastric metastasis seems to be a late event in patients with RCC and is accompanied by disseminated tumor spread to other organs. Solitary synchronous gastric metastasis from small, localized RCC has rarely been reported. We report a case of 79-year-old man with synchronous gastric metastasis presenting with a single erosive lesion from pT1 RCC. The patient underwent radical nephrectomy and endoscopic resection for metastatic gastric cancer. The resected specimen showed an ill-defined tumor, approximately 0.6 cm long, with a clear resection margin. The morphologic features of the tumor cells were consistent with those of metastatic RCC of the clear cell type. At 6 months' follow-up, the patient did not show local recurrence or additional metastasis on upper endoscopy and computed tomography scan. (Gut Liver 2012;6:388-394)

Key Words: Stomach neoplasms; Carcinoma; Renal cell; Neoplasm metastasis

INTRODUCTION

Renal cell carcinoma (RCC) has a propensity to metastasize along the hematogenous route. About 20% to 25% of patients with RCC have distant metastases at presentation,1 and another 50% develop distant metastases or local recurrence after nephrectomy.2 Metastasis can occur at any time, and the most frequent sites include the lungs, bones, liver, and brain. However, RCCs can also metastasize to unusual sites, including the pancreas, thyroid, adrenal gland, skeletal muscle, and skin.3 Clinical courses vary among patients with RCC who initially present with metastatic disease or who develop tumor dissemination during follow-up.

RCC metastases to the stomach, including solitary synchronous gastric metastases from small, localized RCCs, are extremely rare.4 We here describe a patient with a solitary synchronous metastatic gastric cancer originating from a small RCC who was treated with endoscopic resection. We also review the clinical characteristics of, therapeutic modalities for, and clinical outcomes of, patients with this disease.

CASE REPORT

A 79-year-old man presented with abdominal pain. He had previously undergone surgery for a duodenal ulcer as well as an open cholecystectomy. He had smoked for 30 years. On physical examination, we did not detect abdominal tenderness or a mass, and laboratory tests revealed no abnormal findings. Upper endoscopy showed an erosive lesion, approximately 0.6 cm in length, in the anterior wall of the midbody (Fig. 1). A biopsy of the lesion showed tumor cells, consistent with metastatic RCC of the clear cell type. Computed tomography (CT) showed a mass, approximately 5 cm long, in the right kidney, but there was no evidence of lymph node enlargement or metastatic lesions in the abdomen (Fig. 2A). Positron emission tomography showed an isometabolic mass (maximum standardized uptake value [maxSUV], 2.7) in the right kidney (Fig. 2B and C), but no hypermetabolic lesions in other organs. The patient underwent radical nephrectomy. The resected specimen showed a well-defined lobulated mass, 5.2×3.8×3.5 cm in size, in the lower pole of the right kidney. The tumor cells had clear cytoplasm and round monotonous nuclei, both typical of clear cell carcinoma (Fig. 3). The tumor was confined to the renal parenchyma, and no lymphovascular or renal vein invasion was apparent. The
RCC was staged as T1bN0M1.

The patient subsequently underwent endoscopic submucosal dissection of the metastatic gastric lesion (Fig. 4). Microscopic examination of the resected specimen showed an ill-defined tumor, about 0.6 cm long, with clear resection margins, a finding consistent with metastatic RCC (Fig. 5). Upper endoscopy and a CT scan performed 6 months later showed no evidence of local recurrence or additional metastasis.

DISCUSSION

Although metastatic gastric cancers are uncommon, those observed are frequently metastases of lung cancer, breast cancer, and malignant melanoma. The clinical symptoms most commonly requiring endoscopy of patients with gastric metastasis include anemia, gastrointestinal bleeding, dyspepsia, and epigastric pain. Metastases are most common in the gastric body, and are more likely to be single rather than multiple. Grossly, such lesions can resemble submucosal tumors, with or without central depressions, or primary gastric cancers. The outcome of patients with metastatic gastric cancer is generally poor, because concomitant metastases to other organs are common.

Fig. 1. Upper endoscopy showing an erosive lesion approximately 0.6 cm long in the anterior wall of the gastric mid-body.

Fig. 2. (A) Computed tomography showing a hypervascular mass (arrow) approximately 5 cm long and bilobular in shape in the right kidney. (B, C) Positron emission tomography showing an isometabolic mass (arrow, maxSUV 2.7) in the right kidney. maxSUV, maximum standardized uptake value.

Fig. 3. Pathology findings for the tumor of the right kidney. The tumor was 5.2×3.8×3.5 cm in size, located in the lower pole (arrow), and confined to the renal parenchyma. Thus, lymphovascular invasion and tumor emboli in the renal vein were absent in the tumor. The Fuhrman nuclear grade was 2/4. Inset: The tumor cells had clear cytoplasm and round nuclei, typical of renal cell carcinoma of the clear cell type (H&E stain, ×400).