Long-Term Survival in Two Cases of Resected Gastric Metastasis of Pulmonary Pleomorphic Carcinoma

Keiju Aokage, MD,* Junji Yoshida, MD,* Genichiro Ishii, MD,† Shinichiro Takahashi, MD,‡ Masanori Sugito, MD,§ Mitsuyo Nishimura, MD,* Atsushi Ochiai, MD,† and Kanji Nagai, MD*

Abstract: We report two pulmonary pleomorphic carcinoma patients both of which underwent surgical resection of solitary gastric metastases. A 69-year-old man developed anemia 5 months after right upper lobectomy for pulmonary pleomorphic carcinoma and gastric metastasis was detected endoscopically. He underwent distal gastrectomy and has survived for 5 years without any other recurrence or metastasis. Preoperative abdominal computed tomography detected a submucosal gastric tumor in a 62-year-old man with left upper lobe pleomorphic carcinoma. A gastrointestinal stromal tumor was suspected. Left upper lobectomy was performed followed by partial gastrectomy with splenectomy. The histologic diagnosis was primary pulmonary pleomorphic carcinoma with gastric metastasis. He has survived for 4 years without any other recurrence or metastasis. Resection of gastric metastasis following complete pulmonary pleomorphic carcinoma resection may be indicated if the metastasis is solitary.

Key Words: Lung cancer, Gastric metastasis, Pleomorphic carcinoma, Stomach, Surgery.

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The prognosis of patients with distant metastases of non-small cell lung cancer is poor. Chemotherapy and best-supportive care are the usual management of choice. We report two pulmonary pleomorphic carcinoma patients with a surgically resected solitary gastric metastasis who survived over 4 years after lung cancer resection without any other recurrence or metastasis.

*Division of Thoracic Surgery, †Pathology Division, Research Center for Innovative Oncology, and Divisions of ‡Hepatobiliary-Pancreatic Surgery and §Colorectal and Pelvic Surgery, National Cancer Center Hospital East, Kashiwa, Chiba, Japan.

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Address for correspondence: Kanji Nagai, MD, Chief, Division of Thoracic Surgery, National Cancer Center Hospital East, 6-5-1 Kashiwanoha, Kashiwa, Chiba, 277-8577, Japan. E-mail: knagai@east.ncc.go.jp

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Case 2
An abnormal chest x-ray shadow was detected in an asymptomatic 62-year-old man in July 2003. Further examinations diagnosed this shadow to be pulmonary pleomorphic carcinoma in the left upper lobe. He was referred to our division in August 2003. On CT scan, the tumor was 3.3 × 2.4 cm in size, and the clinical stage was T2N0M0, stage IB. Abdominal CT scan detected a submucosal gastric tumor on the posterior wall of the fornix, 9.0 × 7.5 cm in size, and gastrointestinal stromal tumor was suspected. He underwent left upper lobectomy and lymph node dissection in September and partial gastrectomy and splenectomy in December 2003. His postoperative course was uneventful.

Grossly, the lung tumor was a hard mass with central necrosis (Figure 3A). Microscopically, 80% of the tumor was spindle cell carcinoma (Figure 4A), and 20% was large cell carcinoma (Figure 4A, inset). The tumor was diagnosed as pleomorphic carcinoma of the lung. The tumor invaded the parietal pleura, but the cut end was free of cancer.

The gastric tumor was a hard mass projecting from the gastric wall (Figure 3B). Microscopically, the tumor was mostly composed of spindle cells with nuclear hyperchromasia and irregular, distinct nucleoli arranged haphazardly in a fascicular pattern (A). Other components were multinucleated giant cells with abundant cytoplasm lacking intercellular cohesion (A, inset), and large cell carcinoma. The gastric tumor was mostly composed of spindle cells identical to the lung tumor (B).

**DISCUSSION**

Primary lung cancers rarely metastasize to the gastrointestinal tract. Gastric metastases are even rarer and the incidence of gastric metastasis from primary lung cancer in an autopsy series have been reported to be 0.5 to 9%.2,3 There are only a limited number of cases reported in the literature.2,4 De Palma et al.5 reported the most common primary cancers metastasizing to the stomach were breast (33%), lung (25%), malignant melanoma (22%), and head and neck cancers (6%). Metastases to the stomach generally develop in the submucosa. They usually become symptomatic after a considerable growth, and the symptoms include nausea, vomiting, melena, anemia, and epigastralgia. Gastric metastases often have a gross aspect resembling a volcano, and the

| TABLE 1. Immunoprofile in Two Cases |
|-------------------------------|------------------------------|------------------------------|------------------|------------------|
| Markers | Lung  | Stomach | Lung  | Stomach |
| TTF-1   | –     | –       | –     | –      |
| c-kit   | –     | –       | –     | –      |
| AE1/3   | +     | ++      | +     | +      |
| CK7     | +/−   | +/−     | +     | +      |
| CD34    | –     | –       | –     | –      |

TTF-1, thyroid transcription factor-1; CK7, cytokeratin 7.
majority of them were reported to develop in the gastric fundus or cardia.\textsuperscript{2,5}

Patients with extrathoracic recurrence after complete NCSLC resection are destined to a poor prognosis, with a reported 1-year postrecurrence survival rate of 26\%.\textsuperscript{6} Most recurrences after resection are multiple or disseminated and usually need to be treated with systemic chemotherapy, thus surgical resection is not indicated. However, some investigators reported long-term survival after recurrence resection in selected patients.\textsuperscript{7,8} Hishida et al. concluded pathologic stage I patients with a solitary recurrence after complete non-small cell lung cancer resection resulted in reasonable survival when the recurrence was surgically resected. However, they showed surgical resection of a solitary metastasis did not benefit pathologic stage II/III patients.\textsuperscript{7}

Because digestive tract cancer metastases can cause complications including bleeding, perforation and obstruction, surgical resection may be indicated even if the disease is disseminated. Early and less invasive intervention, like palliative resection or bypass, may be needed to prevent or control severe complications, as the patient’s condition rapidly deteriorates once these complications occur.

Pleomorphic carcinomas have been reported to be highly metastatic, especially to digestive organs.\textsuperscript{9,10} They have also been reported to tolerate chemotherapy and have a poor prognosis.\textsuperscript{10} The two patients reported here had advanced primary disease and did not undergo any adjuvant therapies, but have survived more than 4 years without any further signs of recurrence and may result in a cure. These unexpectedly good outcomes alone do not suggest surgical metastasectomy is generally recommended for patients with lung cancer gastric metastases. More cases are necessary to evaluate the effectiveness of resection of gastric metastasis from lung cancer. However, gastric metastasectomy following complete pulmonary pleomorphic carcinoma resection may be indicated if the metastasis is solitary.

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**FIGURE 3.** Case 2. The lung tumor was a solid mass with central necrosis and hemorrhage (A). The gastric tumor was a hard mass projecting from the gastric wall (B). The cut surface showed central necrosis and hemorrhage (B, inset).

**FIGURE 4.** Case 2. The gastric tumor was mostly composed of spindle cells with nuclear hyperchromasia and irregular, distinct nucleoli arranged haphazardly in a fascicular pattern (A). The other minor component was bizarre cells without any specific differentiation, i.e., large cell carcinoma (A, inset). The gastric tumor was mostly composed of spindle cells identical to the lung tumor (B).


