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Case Report

Skin Metastasis From Sigmoid Colon Cancer

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Skin metastases from visceral cancers are rare and the reported incidence from all visceral cancers is 1.4% to 10%. Skin metastases from colorectal cancers account for only 5% of metastatic skin cancers, among which scalp metastases are very rare. We describe a 53-year-old man with scalp metastasis derived from sigmoid colon cancer that was diagnosed and surgically resected in 2005. Metastatic lung tumors that developed thereafter were surgically resected and then chemotherapy was administered. However, metastatic brain tumors occurred in 2008, and these were treated by γ-knife radiosurgery. Around the same time, a raised lesion that appeared on the scalp was diagnosed as skin metastasis and treated with best supportive care. Thereafter, the brain metastases continued to spread, and the patient died in October 2008.

Key words: Skin metastasis – Colon cancer – Scalp metastasis – Brain tumor

Skin metastases arising from gastrointestinal cancer are rare, and the theoretical incidence of skin metastases in colorectal cancers is less than 5%.[1,2] This case report describes scalp metastasis that developed after surgery for sigmoid colon cancer.

Case Report

Colonoscopy for a detailed examination of melena revealed sigmoid colon cancer in a 53-year-old man in December 2005 (Fig. 1). Preoperative blood tests revealed carcinoembryonic antigen and cancer antigen 19-9 levels of 6.7 ng/ml and 27.1 U/ml, respectively. Sigmoidectomy was performed in January 2006, and the pathologic diagnosis was well-differentiated adenocarcinoma, lymphovascular invasion (+), T3, N0, M0, stage II. Chest computed tomography (CT) and positron emission tomography imaging in September 2006 revealed an isolated lesion, 6 mm in diameter in the right lung. A metastatic lung tumor was diagnosed (Fig. 2), and in December of the same year the patient underwent thoracoscopic partial resection of the target area in the right lung. The pathologic diagnosis was metastasis from colorectal cancer. The patient received systemic chemotherapy after surgery. However, chest CT images detected tumors in the

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Fig. 1 Colonoscopy findings. Image shows 75% circumferential lesion in sigmoid colon. Pathologic diagnosis of biopsy specimen was well-to-moderately differentiated adenocarcinoma.

right lung and right chest wall in June 2007, and these were confirmed as recurrences. The chest wall tumor was thoracoscopically resected (Fig. 2), but images obtained in November of the same year revealed recurrence of this tumor and destruction of the right fifth rib. The tumor beds were irradiated with 20 Gy of X-rays to relieve pain and systemic chemotherapy was administered. In April 2008, brain metastases in the left and right frontal lobes were treated by γ-knife radiosurgery with target doses of 22 Gy each (Fig. 3). A red, sessile, elastic, firm, raised lesion, 19 mm in diameter, with a glossy surface on the skin of the median area of the occipital region (Fig. 4) was confirmed as skin metastasis of the scalp. This was treated symptomatically. Thereafter, the brain metastases continued to spread, and the patient died in October 2008.

Discussion

Metastatic skin cancer is defined as skin metastases from visceral cancer, excluding primary skin cancer and hematologic malignancies. Skin metastases derived from visceral cancers are rare and the reported incidence ranges from 1.4% to 10% of all visceral cancers, which represents 6% to 16% of malignant skin tumors.[1,2] At the top of the list of types of visceral cancers among men, which involve a higher incidence of skin metastases, is lung cancer (20%–30%) followed by colorectal (16.3%), esophageal, and kidney cancers, and among women, the most prevalent is breast cancer (70%), followed by colorectal (1.5%), ovarian, and lung cancers.[3,4] The reported incidence of metastases on the scalp accounts for about 20% of metastatic skin cancers and these can also arise from lung and gastric cancers.[5] However, skin metastases from colorectal cancer account for only 5% of metastatic skin cancers, of which scalp metastases are very rare.[6]

Metastatic invasion of the skin is classified as the continuing process of primary cancer, lymphatic,

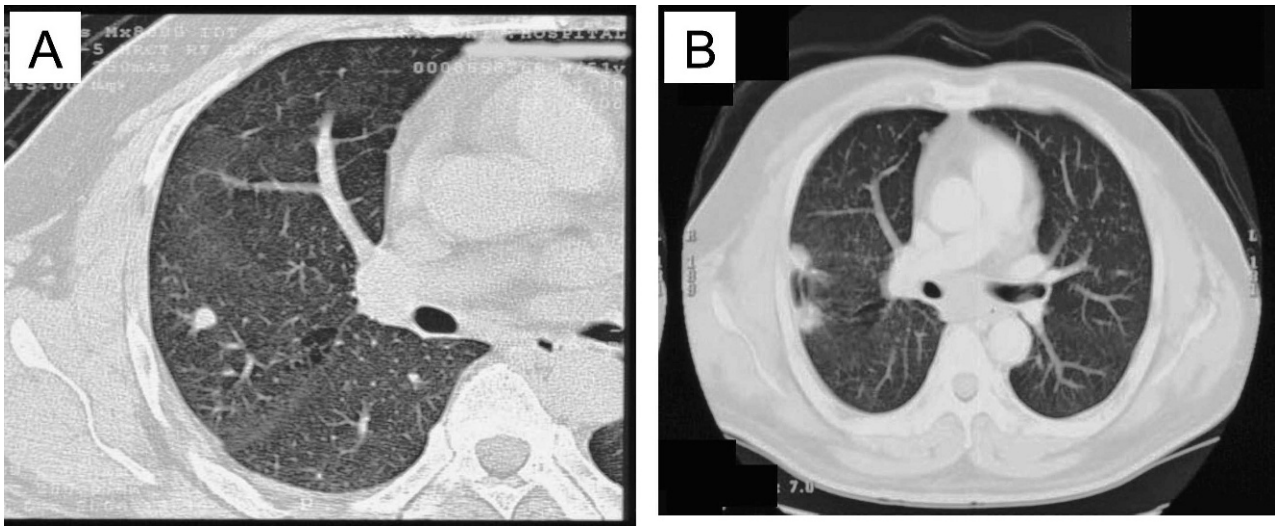

Fig. 2 Chest CT scan. Isolated lesion, 6 mm in diameter, detected in right lung in September 2006 (A). Pathologic diagnosis of biopsy specimen was adenocarcinoma metastasis from sigmoid colon cancer. In June 2007, tumors in right lung and right chest wall were confirmed as recurrent sigmoid colon cancer (B).

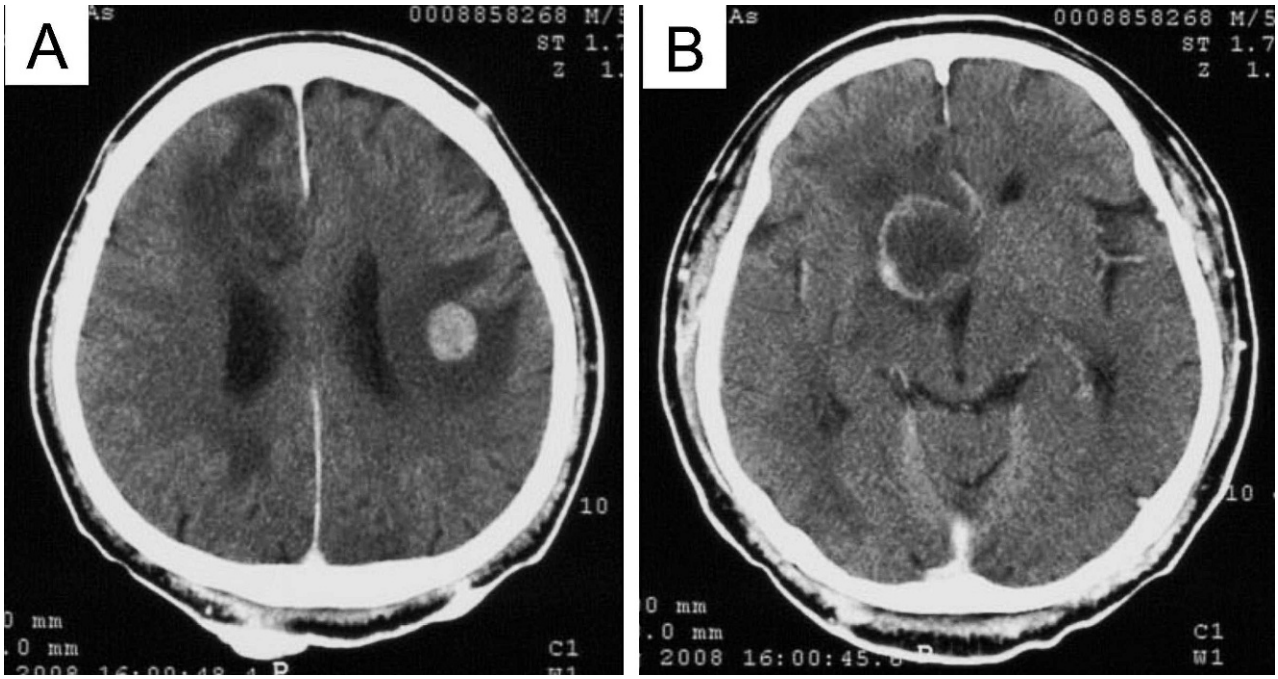

Fig. 3 Head CT scan. Tumors, 15 and 16 mm in diameter, in left and right frontal lobe, respectively.

and bloodstream invasion.[1] Examples of continued invasion of primary cancer include direct invasion of chest skin tissues by breast cancer, neck and facial skin metastases from oral cancer, invasion of gastric cancer into the umbilical region (Sister Mary Joseph nodule), and the spread of tumor cells after percutaneous aspiration biopsy of a liver lesion in the hypochondrium. Examples of lymphatic invasion include chest and abdominal skin metastases through respective lymphatic vessels arising from breast, cervical, prostate, and pancreatic cancer, and skin metastases that develop within radiation fields. Bloodstream invasion into remote skin tissues of the head and extremities can arise from gastric, lung, colorectal, and other visceral cancers.[3]

Fig. 4 Skin tumor. Raised lesion, 19 mm in diameter in median part of occipital region, was sessile, elastic, and firm.

Kauffman and Sina[7] and other investigators[8] have reported that metastatic invasion of colorectal cancer into the skin and subcutaneous tissues assumes the form of immunohistologic metastasis of tumor cells through lymphatic vessels and capillaries. However, colorectal cancer is often considered to metastasize by the bloodstream to remote organs of the body, such as the head and extremities, where they assume the form of either single or multiple red nodules in the abdomen, perineal region, head, neck, and extremities. Tumor alopecia due to scalp metastases is a frequent example of remote metastases.[9] Bloodstream skin metastases are characterized by the absence of regional lymph node involvement, the development of extensive skin metastases, venous invasion of tumor cells within skin metastases, and the presence of tumor cells in the pulmonary blood vessels.[3,4] Bloodstream-associated skin metastases

are characterized by tumor cells in the pulmonary blood vessels spreading throughout the body by the cardiopulmonary circulation.

The prognosis of patients with metastatic skin cancer is poor, and metastases to other organs are frequent in patients with skin metastases.[10–14] Our patient developed lung and brain metastases and died 2 years 9 months after surgery.

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