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Abdominal Subcutaneous Metastasis from Esophageal Squamous Cell Carcinoma

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Subcutaneous metastasis from esophageal carcinoma is rare, but skin tumors should be considered metastatic lesions in patients with a history of malignancy. We report a 75-year-old man with an unusual subcutaneous metastasis of esophageal carcinoma. The patient was diagnosed with esophageal squamous cell carcinoma and had been treated nine months earlier with neoadjuvant, concurrent chemo-radiotherapy followed by surgery. He later presented with a painless soft tissue mass on the right lower abdominal wall and subsequently a tender lump of skull metastasis. Histopathology and clinical imaging studies confirmed that these subcutaneous tumors were metastatic lesions, and he received chemotherapy and palliative radiotherapy. Uncommon esophageal carcinoma metastasis to skin and skull is discussed.

Key words: subsubcutaneous metastasis, esophageal carcinoma, scalp; skull

INTRODUCTION

In contrast to primary, subcutaneous, malignant tumors, subcutaneous metastases are uncommon, mostly originating from cancers of the breast, colon, lung, and melanoma.[1] With two metastatic pathways-lymphatic and blood-esophageal carcinoma prognoses are poor. Both regional and distant lymph nodes are frequently involved and metastases in hematogenously distant organs such as the liver and lung are commonly diagnosed in advanced disease; subcutaneous lesions represent only 1% of metastases in esophageal carcinoma.[2] Subcutaneous esophageal metastasis at the abdominal wall and skull metastasis with invasion of the scalp is rare. It is typically asymptomatic, but could present as a painful lesion. In this report, we describe a patient with esophageal squamous cell carcinoma presenting an abdominal wall metastasis followed by a skull metastasis, and review relevant published literature.

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CASE REPORT

A 74-year-old man with symptoms of fatigue, progressive dysphagia, and weight loss of 9 kg in two months was diagnosed with moderately differentiated squamous cell carcinoma (SCC) of the esophagus by endoscopic biopsy. The tumor was located at mid-esophagus, 27-32 cm from the incisor, and presented as 4×5 cm ulcerative mass with luminal obstruction. By computed tomography (CT) and biopsy, the clinical stage was determined to be stage III (T3N1M0) (American Joint Committee on Cancer, 2006). The patient was treated with a regimen of neoadjuvant, concurrent chemo-radiotherapy: cisplatin, Fluorouracil, and 50 Gy irradiation. Three months later, the tumor was imaged and determined to be resectable. He subsequently underwent subtotal esophagectomy and stomach reconstruction. The patient's postoperative course was uneventful, and the Eastern Cooperative Oncology Group (ECOG) performance status outcome was grade 1. However, a rapidly growing, non-tender soft tissue mass in the right lower abdominal wall was noted within six months after surgery. Abdominal CT scans revealed a 2.9×2.4 cm subcutaneous mass in the right lower abdomen and multiple para-aortic lymph node enlargement (Fig. 1A). Ultrasound-guided, core biopsy was done and histoimmunochemical examination showed pleomorphic tumor cells. Eosinophilic cytoplasm with prominent nucleoli were arranged in a solid nest pattern, infiltrating the stroma, staining positive for CK14, and

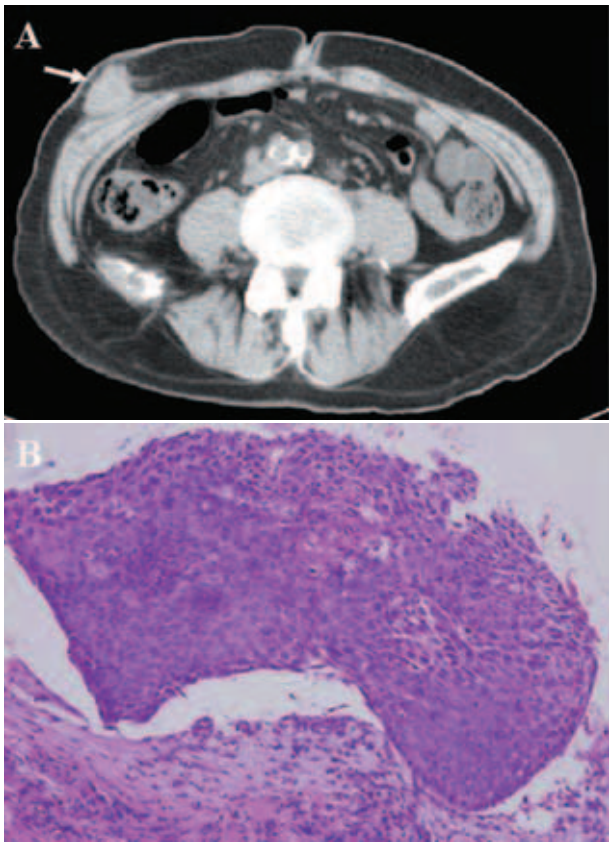

Fig. 1 (A) Computed tomography of abdomen showing a 2.9 ×2.4 cm mass (arrow) in the subsubcutaneous layer of right lower abdomen and multiple paraarotic lymph nodes enlargement. (B) Microscopically, the section revealing a picture of pleomorphic tumor cells with eosinophilic cytoplasm and prominent nucleoli arranged in solid nest pattern infiltrating in the stroma, consisted of metastatic squamous cell carcinoma of the soft tissue.

identified as metastatic squamous cell carcinoma (Fig. 1B). He received three courses of cisplatin and 5-FU chemotherapy. The subcutaneous metastatic lesion responded well to chemotherapy with a complete remission. Three months later, the patient presented with nausea, vomiting, and disorientation which lasted for one week; he was admitted to hospital. On examination, a 4×3 cm firm, tender nodule was palpable on the midline anterior frontal region of his abdomen. There was no other palpable skin lesion and no neurological abnormality. Tumor marker test results showed CEA, 1.51 ng/ml (normal limits 1-5 ng/ml); SCC, 4.50 ng/ml (normal limits 1-1.5 ng/ml); CA19-9, 77.12 unit/ml (normal limits, 1-35 unit/ml). Brain CT scans showed a 4.1×3.6×2.3 cm soft tissue mass, with destruction of

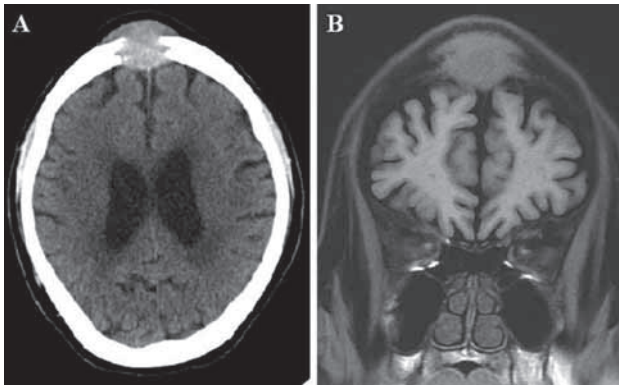

Fig. 2 (A) Contrast-enhanced CT of brain showed a soft tissue mass, 4.1×3.6×2.3 cm in size, with bony destruction on midline anterior frontal region. (B) Coronal T1-weighted magnetic resonance image demonstrated a destructive tumor on the midline frontal bone with invasion of the scalp and dura matter.

the skull at the midline anterior frontal region (Fig. 2A). On magnetic resonance imaging, a destructive tumor on the midline frontal bone with invasion of the scalp and dura matter, in favor of a metastatic lesion (Fig. 2B). The patient refused biopsy of the scalp soft tissue mass, and palliative external beam radiation therapy (50 Gy in 30 fractions) and chemotherapy (cisplatin and 5-fluorouracil) were prescribed. He died of disease progression during the treatment.

DISCUSSION

Subcutaneous metastases are uncommon and can originate from a variety of primary lesions. The most common is malignant melanoma, followed by breast cancer and other mucosal tumors of head and neck.[1] Subcutaneous metastases from squamous cell carcinoma of the esophagus are extremely rare. Esophageal carcinoma has a poor prognosis with 5-year survival rates of 5-35%.[3] Lymph node and distant metastases often occur around the time of diagnosis. The liver and lung are often involved via hematogenous metastasis.[2] Regional lymph node involvement is the most common presentation. Subcutaneous metastasis is rare; Donald reported that only 3 in 4,020 patients with subcutaneous metastases were of esophageal origin.[4] Lindenmann also reported a subcutaneous metastasis of the chest wall from esophageal carcinoma.[5] Clinical presentations of esophageal carcinoma metastases are variable, and may include dermal papules, indurated nodules, inflammatory

patches, and rapidly growing subcutaneous masses.

The differential diagnosis of metastasis should be considered in patients with malignancy who also present skin soft tissue mass since the subcutaneous metastasis frequently presents as a painless, dermal tumor. Appropriate workup for skin lesions should include circumstantial medical history, physical examination, imaging, and histopathological analysis. Use of a basic panel for immunohistochemical staining is recommended for defining cell type and arriving at a correct diagnosis.[6] In our patient, abdominal wall lesions were meticulously evaluated by imaging studies and biopsy examination. Features of a subcutaneous metastasis were identified via CT scan, and histopathology confirmed the diagnosis of a skin metastasis from our patient's esophageal squamous cell carcinoma.

While a lytic skull lesion can be identified by imaging studies, metastasis should be differentially distinguished.[7] Skull metastases with scalp invasion are characterized by old age, shorter duration of symptoms, and less neurological deficit compared with primary skull tumors.[8] Our patient presented with skull bone destruction and invasion of the dura; this may have resulted in his clinical symptoms of nausea, vomiting, and disoriented consciousness.

Surgical excision of the subcutaneous metastasis may mitigate clinical symptoms, however, this will not improve prognosis. Palliative chemotherapy and radiotherapy may be an alternative, non-invasive treatment that can decrease recurrence and morbidity.[9] Our patient refused surgery, and palliative chemotherapy for his abdominal subcutaneous metastatic lesion yielded a good response. However, another skull metastasis with invasion of his scalp developed, and disease progressed rapidly despite chemo-radiotherapy. According to the literature we reviewed, prognosis is often poor for patients with esophageal carcinoma metastasizing to skin, with reported survival times of 4-20 months.[4,10]

In summary, subcutaneous metastasis from esophageal carcinoma is rare and indicates rapid disease progression with poor prognosis. Prompt diagnosis and treatment may provide some symptomatic relief and prolong survival time.

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