Umbilical Metastasis from Small Cell Carcinoma of the Lung*

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Umbilical metastases have been almost exclusively reported in patients with adenocarcinomas of intra-abdominal organs. We present a case of small cell carcinoma of the lung with umbilical metastasis that was confirmed by biopsy. To our knowledge, this is the first reported case of umbilical metastasis from small cell lung cancer.

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Umbilical metastasis is often known as Sister Mary Joseph's nodule, and the vast majority of cases have been reported in patients with intra-abdominal malignancy.1,2 Histologically, umbilical metastases are almost exclusively adenocarcinomas. Although skin metastasis from lung cancer is well recognized, with an incidence of 1.6 to 7.5 percent,3 umbilical metastasis from lung cancer is very rare. We present a case of umbilical metastasis from small cell carcinoma of the lung.

CASE REPORT

A 68-year-old man was referred to the Chubu National Hospital with a diagnosis of limited small cell carcinoma of the lung in June 1989. He was treated with a total of six cycles of chemotherapy consisting of cisplatin and etoposide with concurrent irradiation to the primary tumor and mediastinum. In December 1989, a restaging workup including fiberoptic bronchoscopy revealed minimal residual disease without an extrathoracic lesion.

The patient did well without therapy until February 1990, when a chest x-ray film showed regrowth of the primary tumor. Brain and liver metastases were also documented by computed tomographic (CT) scans. He again received combination chemotherapy consisting of cisplatin and etoposide with concurrent whole brain irradiation. The brain metastasis completely responded to the combined chemoradiotherapy. However, the primary tumor and liver metastasis did not respond to the therapy.

The patient was readmitted on June 28, 1990, because of instability of gait and jaundice. His family mentioned that he had had a discharge from the umbilicus for the previous two weeks. Physical examination revealed a cachexia and jaundice. The umbilicus was 2.5 cm in diameter with a foul-smelling purulent discharge (Fig 1). Subcutaneous induration measuring 5 cm in diameter was palpable periumbilically. No other skin metastases were found. A biopsy specimen of the umbilicus showed invasion of small cell carcinoma into the dermis (Fig 2). A CT scan of the abdomen obtained two days before death showed thickening of the anterior peritoneum adjacent to the umbilicus as well as extensive liver metastasis and tumor invasion into right lower chest wall. The patient died ten days after admission. An autopsy was not permitted.

DISCUSSION

Despite the increasing incidence of lung cancer, umbilical metastasis from lung cancer has been rarely reported.

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Figure 2. Schematic of Figure 1.
Charoenkul et al\(^3\) reviewed 262 cases of umbilical metastases reported up to 1976 in the worldwide literature; the most common sites of primary tumors were the stomach, ovary, colon and rectum, and pancreas, while the primary tumor was unknown in 78 cases. However, no case of umbilical metastasis from lung cancer was included in their series. More recently, Powell et al\(^4\) reported 85 cases of umbilical metastases seen at the Mayo Clinic between 1950 and 1982; only one case of metastasis from lung cancer, in which the histologic findings were not reported, was included. Heatley and Toner\(^6\) reviewed 33 cases seen in Northern Ireland between 1970 and 1984; two cases of metastasis from adenocarcinoma of the lung were included. Lung cancer should be recognized as one of the malignant neoplasms that metastasize to the umbilicus. It is noteworthy that small cell carcinoma of the lung metastasized to the umbilicus in our case. To our knowledge, this is the first case reported of umbilical metastasis from small cell carcinoma of the lung.

The paucity of reports of umbilical metastasis from lung cancer could be partly explained by specificity of the mode of spread to the umbilicus. Contiguous extension from the anterior peritoneal surface is considered to be the most important route in patients with intra-abdominal malignancy.\(^1\) Other modes of metastatic spread to the umbilicus, such as hematogenous and lymphatic spread, are also implicated. In our case, contiguous extension from the anterior peritoneal surface was the most likely mode of spread, based on the CT findings in the abdomen, which revealed thickening of the anterior peritoneum.

Umbilical metastasis was the presenting symptom in 18 (45 percent) of 40 patients in the series of Steck and Helwig.\(^1\) Furthermore, umbilical metastasis was present prior to the diagnosis of internal malignancy in 73 percent and was a major diagnostic factor in 70 percent of the cases in their series. Therefore, it is prudent to examine the umbilicus in all patients. Umbilical metastasis usually appears as a firm, indurated plaque or nodule, which may be fissured or ulcerated with exudation of serosanguineous or purulent discharge. The clinical appearance of umbilical metastasis must be differentiated from that of other lesions. In Barrow’s series,\(^6\) primary neoplasms accounted for 38 percent of all umbilical tumors (78 percent of these were benign, and 22 percent malignant), and endometriosis represented 32 percent, while metastatic tumors accounted for 30 percent of all umbilical tumors. Nonneoplastic lesions should also be considered in the differential diagnosis of umbilical metastasis; these lesions include pyogenic granuloma, pilonidal sinus, concretion of the umbilicus with the formation of an omphalith, hypertrophic scar, and umbilical hernia in adults.\(^3\) Biopsy should be considered in cases of doubt. However, the presence of skin metastasis including umbilical metastasis in patients with lung cancer makes the disease inoperable with a grave prognosis.

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FIGURE 1. Umbilical metastasis from small cell lung cancer.

FIGURE 2. Biopsy specimen of the umbilicus shows metastatic small cell carcinoma in the dermis (hematoxylin-eosin, original magnification ×100).