A 56-year-old man underwent preoperative chest computed tomography to further evaluate a well defined mass in the middle lobe with subcarinal lymph node swelling. There was no pathological diagnosis established by either bronchoscopic biopsy specimens or computed tomography-guided percutaneous needle biopsy. The middle lobe and mediastinal lymph nodes were excised, then postoperative radiotherapy (60 Gy) was administered to the mediastinum. Results of histological and immunohistochemical study showed that the lung mass consisted of completely necrotic tissue and that the subcarinal lymph node was involved by malignant cells suggestive of dendritic cell sarcoma. Primary dendritic cell sarcoma of the mediastinal lymph node is extremely rare. Dendritic cell sarcoma is a neoplasm of reticular dendritic origin and includes both follicular dendritic cell sarcoma and interdigitating reticulum (or dendritic) cell sarcoma. These rare neoplasms may pose difficulty in pathologic diagnosis and treatment. Although our patient died of hepatic rupture due to dendritic cell sarcoma or gastric cancer metastases one year after surgery, complete surgical resection with or without postoperative radiotherapy may be an acceptable therapeutic option for localized dendritic cell sarcoma.


Key words: primary mediastinal lymph node malignancy, mediastinal tumor, dendritic cell sarcoma, lung cancer, gastric cancer

Ken-ichi Togashi, MD, Hirohiko Shinohara, MD, and Manabu Isoda, MD.

Most mediastinal lymph node malignancies are metastatic lesions from lung cancer or various other cancers. There are few cases of primary lesions, such as Castleman’s disease. We report an extremely rare case with a primary mediastinal lymph node malignancy demonstrating features suggestive of dendritic cell sarcoma.

Case

A 56-year-old man was hospitalized to improve control of diabetes mellitus due to chronic pancreatitis. He was a heavy drinker with a smoking history of 30 cigarettes per day for 30 years. Two years earlier, he had been treated as an outpatient for pulmonary aspergillosis. On admission to the medical department in our hospital, the patient was asymptomatic and showed a good performance status with normal vital signs. Findings on physical examination and laboratory tests were normal. Chest radiograph showed a nodular, well defined mass with a maximal diameter of 3 cm in the lower area of the right lung (Fig. 1). Chest computed tomography (CT) scanning showed a rounded mass with a maximal diameter of 3.5 cm in the middle lobe (Fig. 2) and an enlarged lymph node with a maximal diameter of 2.5 cm in the subcarinal area (Fig. 3). Fibrobronchoscopy did not demonstrate any endoluminal lesions and there was no histological diagnosis. CT-guided percutaneous needle biopsy specimens of the lung tumor showed extensive necrotic tissue. The tentative diagnosis was resectable primary lung cancer with mediastinal lymph node metastasis in one station. The patient was referred to our division for surgical treatment.

The mass was approached through a right postero-
lateral thoracotomy. The middle lobe and mediastinal lymph nodes were excised (complete resection). The patient's postoperative course was uncomplicated and he was discharged on the twelfth postoperative day.

Gross pathological examination of the lung tumor demonstrated a 3.0-cm encapsulated yellowish mass showing extensive areas of necrosis on the cut surface. Histologically, the tumor consisted of completely necrotic tissue. Otherwise the subcarinal lymph node contained malignant cells, which were large neoplastic cells with bizarre grooved nuclei among spindle cells and lymphocytes (Fig. 4). Tentative pathological diagnosis was mediastinal lymph node metastasis from large cell lung cancer. Immunohistochemical study showed positive staining for S-100 (Fig. 5A), CD56, cytokeratin (low), and fascin (Fig. 5B), but there was no staining for CD30, CD43, CD45Rb, CD57, CD68, CD83, L26, VCHL-1, BNH9, HMB45, DC-LAMP, DC-SIGN, IL-3R, cytokeratin (high), chromogranin A, or epithelial membrane antigen (EMA) (Table I). The final pathological diagnosis was the primary mediastinal lymph node malignancy with features suggestive of dendritic cell sarcoma.

Two months after surgery, the patient underwent mediastinal irradiation with a total of 60 Gy (2 Gy x 30) as postoperative adjuvant therapy. One year after radiotherapy, CT study demonstrated multiple nodular shadows in the liver, suggesting cancer metastases. Endoscopic study of the gastrointestinal tract showed two gastric cancer lesions (IIa+IIc). Biopsy specimens demonstrated poorly differentiated adenocarcinoma histologically. Immunohistochemical study showed positive staining for cytokeratin and EMA, but there was no staining for S-100, CD30, CD68, L26, VCHL-1, or LCA. The levels of tumor markers were CEA 5.8, CA19-9 31.5, SLX 167, and soluble IL-2 receptor 2,870U/ml. We concluded that these gastric cancers differed immunohistochemically from the previous mediastinal lymph node malignancy. Ten days after endoscopy, the patient suddenly died of hepatic rupture with massive hemorrhagic ascites without malignant cells. Autopsy was not performed.

Discussion

Neoplasms of reticular dendritic origin are extremely