Large cell neuroendocrine carcinoma (LCNEC) of the lung is a newly recognized entity of pulmonary neuroendocrine carcinoma. Histologically, it is very difficult to differentiate LCNEC from other pulmonary carcinomas and the prognosis is significantly poor. The cutaneous metastasis of LCNEC of the lung shares some features with a Merkel cell carcinoma of the skin in light microscopy and yet it is negatively stained with cytokeratin 20. We report a case of cutaneous metastasis of LCNEC of the lung, previously misdiagnosed as squamous cell carcinoma. Our patient showed a poor response to the chemotherapy and also revealed a brain metastasis on follow-up brain CT scan. (Ann Dermatol 14(2) 121-123, 2002).

Key Words : Large cell neuroendocrine carcinoma, Cutaneous metastasis
with neuron-specific enolase (NSE) and chromogranin A (Fig. 4A, B) and not with cytokeratin (CK) 20. After confirmation of these histological findings, our patient was rediagnosed as pulmonary LCNEC because of the metastatic cancer on his back. The patient was re-hospitalized to perform follow-up radiological examinations and to take chemotherapy. There was no evidence of metastasis on follow-up whole body bone scan and chest CT but brain CT scan revealed the metastatic lesion on right cerebellum.

**DISCUSSION**

Large cell neuroendocrine carcinoma (LCNEC) is very difficult to differentiate in light microscopy, especially in cases that are decreased in or loss of organoid architecture. In one study, 18 of 22 cases di-
Diagnosed as LCNEC were misdiagnosed previously and 9 of these 18 cases were squamous cell carcinoma like our case. Cutaneous metastatic neuroendocrine carcinoma must be differentiated from Merkel cell carcinoma and metastatic carcinoma from other visceral disease. Rosette-like structure, suggested by Jiang SX et al. as the best marker for recognition of neuroendocrine differentiation is described as the small and regular, oval or round lumina, deeply eosinophilic luminal surfaces, and the absence or rare accumulation of nonmucous-secreted material but frequent apoptotic debris in the lumina. Some histologic features of our case resembled the Merkel cell carcinoma. However the cell size and the rosette-like structures were different and rather close to the features of pulmonary neuroendocrine carcinoma. To confirm these neuroendocrine features, NSE, chromogranin A were used as immunohistochemical staining and to differentiate from a Merkel cell carcinoma CK 20 was used. Although some features were similar to the Merkel cell carcinoma, the result elucidated that the tumor contained significant neuroendocrine natures but it could be differentiated from the Merkel cell carcinoma by its negative staining for CK 20. Cutaneous metastasis from visceral organ was usually from hematogenous spreading but in our case, direct extension of tumor cell was doubted because the location of skin lesion was near that of previous diagnostic fine needle aspiration biopsy site. We also found similar immunohistochemical features in the previous surgically resected lung cancer sections. It represents that previous squamous cell carcinoma was a misdiagnosis and resected lung cancer was infact pulmonary neuroendocrine carcinoma. In various pulmonary neuroendocrine carcinoma, these histological findings corresponded with the histologic criteria for LCNEC proposed by Travis et al. Clinically, the prognosis of LCNEC is significantly worse than that for stage-comparable non-small cell lung cancer and our patient had a poor response to chemotherapy and a brain metastasis on follow-up brain CT scan.

REFERENCES