Limited-Stage Small Cell Lung Cancer*

A Case Report

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Because small cell lung cancer (SCLC) is very responsive to chemotherapy, an attempt at treatment is warranted even in poor-prognosis patients with limited-stage disease. Concurrent thoracic radiotherapy and prophylactic cranial irradiation should be considered in such cases. A case report of an elderly, debilitated patient with limited-stage SCLC is presented, and his management is discussed.

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Small cell lung cancer (SCLC) is a rapidly progressive tumor, which, left untreated, results in death in 4 to 6 weeks on average.1 Two thirds of patients present with metastatic or extensive disease, while the remainder have disease limited to one hemithorax that can be encompassed in a single radiation portal (limited-stage disease). This distinction is very important, because 15 to 20% of patients with limited-stage disease can achieve long-term survival with appropriate intervention. In patients with extensive-stage disease, however, 2-year survival is rare despite a 25% complete response rate to chemotherapy. Therefore, patients with SCLC should be carefully staged and appropriate treatment instituted in a timely manner. Factors predictive of a poor outcome include extensive stage, poor performance status, and weight loss.1 Despite the presence of these factors, patients may still warrant a trial of chemotherapy, as demonstrated in the following case.

CASE REPORT

A 75-year-old man had a 4-week history of shortness of breath, fatigue, and near syncope. He reported a 11-kg weight loss since onset of symptoms and was no longer able to ambulate without assistance. He denied any history of hemoptysis, bone pain, or headache. Chest radiograph revealed a right hilar mass, right upper lobe infiltrate, and pleural effusion (Fig 1a), which was confirmed by chest CT scan (Fig 1c).

His past medical history was significant for hypertension, an anterior myocardial infarction, aortofemoral bypass graft, and repair of an aneurysm of the ascending aorta. He had a 120 pack-year smoking history, and his father had died of lung cancer.

On physical exam, he was an ill-appearing elderly man, somnolent, sitting in a wheelchair. Breath sounds were decreased in the right upper lung field. No adenopathy or organomegaly was noted, and the neurologic exam was unremarkable except for difficulty with short- and long-term memory. Laboratory values were significant for a two- to threefold elevation of lactate dehydrogenase level and normal creatinine value. Sputum culture was positive for Pseudomonas aeruginosa.

Diagnosis was pursued by bronchoscopic biopsy, which revealed SCLC. A thoracentesis yielded an exudate with negative cytologic findings. Head and abdominal CT scans and bone scan were negative for metastases. Staging was completed with a bone marrow aspirate and biopsy, which also demonstrated no tumor spread. The patient was thus considered to have limited-stage SCLC with a parapneumonic pleural effusion, poor performance status, elevated lactic dehydrogenase level, and advanced age. Because of the limited extent of disease, full-dose combination chemotherapy was recommended. Due to his poor performance status, concurrent chemoradiotherapy was not considered an option. Treatment was initiated with carboplatin (area under the plasma concentration vs time curve\(=5\)) and etoposide (100 mg/m\(^2\)) given on day 1 every 3 weeks for six cycles. The first cycle was complicated by fever secondary to postobstructive pneumonitis. Intravenous cefazidine and tobramycin were given until the obstruction resolved (3 weeks), followed by 3 weeks of oral ciprofloxacin. Chest x-ray film and CT scan following chemotherapy demonstrated a complete response (Fig 1b and 1d). The patient then received chest radiotherapy.

Prophylactic cranial irradiation was not recommended due to underlying memory deficits. Eight months following completion of therapy, the patient had no evidence of disease and had returned to his baseline level of activity.

Discussion

This case underscores the need for aggressive therapy in patients with SCLC, especially in the setting of limited-stage disease. Because of rapid progression and frequent paraneoplastic phenomena, patients with SCLC often present with weight loss and decreased performance status. While these factors have negative prognostic value, they should not preclude aggressive treatment. This patient had a pleural effusion with negative cytologic findings, but even patients with proven malignant pleural effusion should be treated aggressively because their outcome may be similar to that of patients with limited-stage disease.2 Age also should not be an overriding factor. Several studies have demonstrated that elderly patients who achieve a complete response have the same expected survival as younger patients.3 Elderly patients, however, are more likely to require dose reduction or omission. These modifications should be made only if absolutely necessary, since survival of patients with SCLC has been strongly correlated with treatment actually received.4

Patients with limited-stage SCLC should be considered for thoracic radiation and prophylactic cranial irradiation. Thoracic radiation improves survival in this subset of patients by 5%5 and should be given concurrently with chemotherapy if lung function and performance status permit. Prophylactic cranial irradiation, on the other hand, does not improve survival but can reduce the incidence of symptomatic brain metastases.6

In conclusion, aggressive treatment of limited-stage SCLC is warranted, and if possible, should not be modified based on age or poor prognostic factors. These patients should receive thoracic radiotherapy and be con-

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Figure 1. Initial radiograph (a) and CT scan (c) demonstrating a right upper lobe mass with mediastinal adenopathy, postobstructive changes in the right upper lobe, and a right pleural effusion. Following six cycles of chemotherapy and thoracic radiotherapy, chest radiograph (b) and CT scan (d) show complete resolution of disease.

sidered for prophylactic cranial irradiation. Finally, careful follow-up of surviving patients is necessary due to the significant risk of developing a second malignancy.

REFERENCES
