revealed extensive endobronchial tumor involving the carina and almost totally occluding the right and left mainstem bronchi. Acute respiratory failure ensued immediately following bronchoscopy and endobronchial biopsies, prompting intubation and mechanical ventilation. Emergent radiotherapy was instituted. The biopsy specimens revealed small cell lung carcinoma. The tumor responded well to 2,500 cGy delivered over four days; the patient was successfully weaned from mechanical ventilation and extubated. Chemotherapy was then begun using cisplatin and etoposide.

In August, 1989 the patient developed symptoms and signs of a right lower lobe pneumonia which responded quickly to intravenous antibiotic therapy. She was again admitted to the hospital in September, 1989 because of dysphagia and cough.

Her physical examination was remarkable for ronchi heard in the right lower lung field. Chest x-ray examination showed prominent lung markings in the right lower lobe. A barium contrast x-ray film of the esophagus (Fig 1)—shown in the right anterior oblique projection—demonstrated a fistula between the esophagus and right lower lobe bronchus. Esophagoscopy revealed no intraluminal tumor, and the fistula could not be identified. The patient was treated with a percutaneous gastrostomy tube for feeding and cytotoxic therapy has been continued.

Our patient differs from previously reported patients in that she developed a bronchosophageal fistula while responding to a combination of radiotherapy and chemotherapy for SCLC. Although we postulate that direct extension of SCLC from the lung into the esophagus occurred and that a fistula formed with shrinkage of the tumor in response to combined modality therapy, we were unable to visualize any tumor by esophagoscopy. Esophageal wall necrosis caused by a bulky tumor pressing on, stretching and displacing the esophagus may have also been a contributing factor for fistula formation.

Since these fistulae are impossible to prevent, and morbidity and mortality are almost always associated with pulmonary infections resulting from aspiration of esophageal contents, the clinician must maintain a high index of suspicion in order to properly diagnose and treat this complication of lung cancer.

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REFERENCES

Cytologic Diagnosis in Bronchoalveolar Lavage Specimens
A Diagnostic Technique for Lung Neoplasms with a Peripheral Location

To the Editor:

The analysis of BAL (bronchoalveolar lavage) cytologic specimens has been found diagnostically useful in primary lung lymphoma and in the diagnosis of parenchymal lung involvement of Hodgkin's disease and mycosis fungoides. Few workers have analysed the diagnostic sensitivity in peripheral lung carcinoma. The sensitivity achieved in peripheral lesions that cannot be visualized through the bronchoscope has been 60 percent in one report and 35 percent in another study. We have tried to determine if the diagnostic yield of the bronchial washing and post-bronchoscopic sputum was increased by the addition of BAL cytologic analysis in a group of 30 patients with primary lung carcinoma in whom the endobronchial lesion could not be visualized through the bronchoscope. Twenty-six patients were men and four women, mean age was 45 years with a range of 36 to 75 years. All had a Karnofsky's index exceeding 80 percent. Radiologically, 26 patients showed a peripherally-located node or mass and four had an infiltrative pattern of involvement. Eleven had epidermoid carcinomas, 11 adenocarcinomas, six small cell and two with mixed histology. The analysis of BAL specimens revealed malignant cells in eight patients (26 percent), while bronchial washing was positive in 12 patients (40 percent). In the remaining 14 patients, the diagnosis was reached by complementary techniques or by surgery. The diagnostic sensitivity, with the combined use of bronchial washings and post-bronchoscopic sputum, was 40 percent. Since in four patients the diagnosis of malignancy was reached exclusively by analysis of BAL specimens, analysis with all three procedures obtains an overall sensitivity of 53 percent. The addition of BAL does not significantly increase the diagnostic sensitivity obtained with the combined use of bronchial washing and post-bronchoscopic sputum (p>0.05).

Because of the small number of patients, we did not find differences in BAL positivities in relation to histologic diagnosis. In contrast, it is interesting that three of four patients with infiltrative patterns were positive on BAL analysis, and two of them positive exclusively by this diagnostic method. By contrast, only five of 26 patients with nodular radiologic lesions had a positive diagnostic test. Our results are similar to those reported by Sineway et al. Baglin and coworkers found neoplastic cell in nine of 11 BAL