

# **OCCUPATIONAL RESPIRATORY DISEASES**

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**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Public Health Service**

**Centers for Disease Control**

**National Institute for Occupational Safety and Health**

**September 1986**

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**DHHS (NIOSH) Publication No. 86-102**

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For sale by the Superintendent of Documents, U.S. Government  
Printing Office, Washington, D.C. 20402

## CLINICAL PRESENTATION

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The clinical presentation of primary lung cancer due to either occupational or non-occupational causes is varied and depends on numerous factors including cell type, location and extent of tumor, and poorly defined host-tumor interactions. Some patients with lung cancer detected by routine chest radiographs will have no signs or symptoms. In other cases, particularly those with more central lesions, cough, hemoptysis, bronchial obstruction with secondary pneumonia, or other localized findings will be apparent. Intrathoracic spread may involve any structure, causing such symptoms as dyspnea due to pericardial or large pleural effusions, dysphagia due to esophageal compression or invasion, or hoarseness due to invasion of the recurrent laryngeal nerve. Metastasis outside the chest may involve any organ or structure with the most common sites being brain, liver, and bone. Alternatively, patients may present with nonspecific constitutional complaints as anorexia, weight loss, fatigue or weakness. Finally, primary lung cancers (particularly small cell carcinoma) may produce a number of paraneoplastic syndromes such as Cushing's syndrome, cerebellar degeneration, migratory thrombophlebitis, and nonbacterial thrombotic endocarditis.

### DIAGNOSIS

The diagnosis of bronchogenic carcinoma usually centers around abnormalities seen on the chest radiograph. Special radiographic exams such as tomograms as well as old x-rays are often helpful in this clinical assessment. In general, cytologic or tissue diagnosis is obtained to confirm the clinical impression. Staging of the tumor is then necessary to determine the appropriate therapy. Interested readers are referred to the following excellent sources of comprehensive discussions of cancer staging:

American Joint Committee for Cancer Stag-

ing and End Results Reporting. "Staging of Lung Cancer, 1979." Chicago, Illinois.

D. T. Carr: Diagnosis and Staging. In: Lung Cancer, 1980. II World Conference, Copenhagen, Editors H. H. Hansen and M. Rorth. Excerpta Medica, Amsterdam, pp. 49-70.

Mountain, C. F., Carr, D. T., and Anderson, W. A. D. A System for the clinical staging of lung cancer. *Am J. Roent.* 120:130-38, 1974.

Numerous approaches and procedures have been used in the diagnostic evaluation of bronchogenic carcinoma, and each patient must be individualized. The underlying plan in all cases, however, is first to establish the diagnosis, then to determine the tumor's resectability (the chance that it can be totally removed surgically), and if resectible, to determine the patient's operability (the chance that he could survive post-resection cardiopulmonary function). Although the finding of small cell carcinoma is generally considered a contraindication to surgery, staging of this tumor can be useful in determining therapy and prognosis.

### THERAPY

The primary mode of treatment of non-small cell bronchogenic carcinoma is surgical resection. Unfortunately, most patients are either unresectable or inoperable at the time of presentation. "Curative" radiotherapy has had some success in limited studies, but for the most part radiotherapy is used for palliation. It may relieve hemoptysis, superior vena cava obstruction, or brain or bone metastases. To date chemotherapy has had little permanent benefit. Combination therapy approaches have been and continue to be tried, including those using immunotherapy, but most well controlled studies again show little benefit.

Although the most lethal, small cell carcinoma is also the bronchogenic cancer most sensi-

tive to both chemotherapy and radiotherapy. Dramatic resolution of tumor masses can be obtained with either mode or with combination therapy. Except in rare cases, however, this remission is short-lived and cannot be maintained.

### PROGNOSIS

The prognosis for bronchogenic carcinoma is poor, and unlike many other cancers, has changed little over the past 30 years. Overall five-year survival rates are less than 10%. Survival

is generally better with squamous cell carcinoma; it is much worse with small cell tumors.

Those asymptomatic patients who undergo surgical resection of small peripheral "coin" carcinoma can expect a five year survival rate of approximately 50%. On the other hand, those presenting with advanced disease may survive only a few weeks. While definite advances have been made in the treatment of patients with localized small cell cancer, the five year survival rate for this disease remains near zero.