REFERENCES


Focus of Bronchial Carcinoma in situ Eradicated by Endobronchial Biopsy*

Michael Infeld, M.D.; Adi Gerblich, M.D.; Suja Subramanyan, M.D.; and Diana Whiteley, M.D.

Bronchial carcinoma in situ is not frequently diagnosed in a clinical setting. A bronchoscopic biopsy of a small mucosal abnormality in a patient with hemoptysis yielded a diagnosis of carcinoma in situ. The involved lobe was resected. On thorough histologic examination of the surgical specimen, no residual carcinoma could be found. To our knowledge, this is unprecedented in the literature. This case emphasizes the importance of biopsying subtle abnormalities and raises questions about the optimal management of in situ bronchial carcinoma. (Chest 1988; 94:1107-09)

Carcinoma in situ is defined as the presence of atypical cells in all layers of an epithelium but confined therein by an intact basement membrane. Occult bronchial car-

*From the Departments of Medicine, Pathology, and Surgery, Wade Park Veterans Administrative Hospital, and the Case Western Reserve University School of Medicine, Cleveland.

Reprint requests: Dr. Infeld, VA Medical Center, Brecksville, Ohio 44141

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cinoma in situ is found at necropsy in 6 percent of smokers' and in over a third of specimens resected for another bronchogenic carcinoma. However, it is rarely encountered as an isolated clinical entity. Forty-three such cases are documented in the English literature and less than half include detailed clinical information. We report a case where the endobronchial biopsy of a slightly deformed carina apparently eradicated a carcinoma in situ.

CASE REPORT

A 68-year-old man complaining of dyspnea and hemoptysis was admitted to the Wade Park Veterans Administration Hospital. The patient's medical history included an 80 pack-year smoking history, chronic obstructive pulmonary disease, and a myocardial infarction in 1979. The patient felt well until two months before admission when he noticed fatigue and anorexia. Two weeks prior to admission, he had dyspnea on exertion and cough. Small clots of blood appeared in his sputum three days before being admitted. The patient presented to another hospital where third degree heart block and congestive heart failure were diagnosed. He was transferred to the Veterans Administration Hospital for continuation of therapy.

On admission, the patient had a pulse rate of 40, respiratory rate of 20, blood pressure of 90/50 mm Hg, and was afebrile. Jugular venous distension and rales were noted on physical examination. Results of hemogram and blood chemistries were normal. The electrocardiogram demonstrated third degree heart block. The chest x-ray film showed vascular congestion and a right pleural effusion.

After pacemaker placement and diuresis, the patient's dyspnea abated. A chest x-ray film at this time evidenced resolution of the pleural effusion and no mass shadow or consolidation (Fig 1). The patient's hemoptysis, however, continued. Results of sputum cultures, acid-fast smears and cytology were nondiagnostic. Bronchoscopic examination revealed a small spot of blood in the anterior segment of the left upper lobe bronchus with a minute mucosal irregularity of the distal segmental carina. No other abnormality was seen. Several biopsies of this carina were interpreted as squamous cell carcinoma in situ by two pathologists independently (Fig 2). There were no malignant cells in the washings or brushings from this area.

With no radiologic evidence (by CT scan) of mediastinal or parenchymal tumor spread and adequate pulmonary function reserve, the patient underwent left upper lobectomy. The surgical specimen demonstrated centrilobular emphysema, foci of atypia and squamous metaplasia, but no frank carcinoma. Over 50 sections proximal and distal to the biopsy site were examined. No residual malignancy was evident. The patient's recovery was uneventful and he was discharged. Six months after discharge, the patient died suddenly at home. He had no symptom of recurrent carcinoma subsequent to his discharge. No autopsy was obtained.

DISCUSSION

Since Papanicolau published the initial report of bronchial carcinoma in situ (CIS) in 1951, a few reports and small series have appeared dealing with the subject of isolated CIS. The typical patient has been a male smoker in the sixth decade of life. About half of these patients were asymptomatic and diagnosed through screening programs. Cough and hemoptysis were common complaints among those with symptoms. Initial chest x-ray findings were normal as often as not, but sputum cytology indicated malignancy in about 70 percent. Visible abnormalities were noted in three quarters of the bronchoscopic examinations. The anomalies observed included: mucosal granularity and loss of sheen, obliteration of longitudinal furrows and irreg-

Figure 1. Posteroanterior roentgenogram of the chest following pacemaker placement and resolution of congestive heart failure.

Figure 2. Histologic section from endobronchial biopsy of a segmental carina of the left upper lobe demonstrating squamous cell carcinoma in situ.
feel the third condition is most probable. They site autopsy series which show multiple foci of CIS occurring frequently in victims of lung cancer. Their recommendation is pneumonectomy when noninvasive cancer is discovered, thereby removing the maximum amount of tissue at risk. This reasoning is obviously problematic. Lung cancer autopsy populations do not necessarily represent the patient presenting with occult CIS. Also, pneumonectomy does not address possible malignant foci in the contralateral lung. Further, in the scant data available (nine patients in two series), no apparent five-year survival advantage is demonstrated when pneumonectomy is compared to lobectomy. Finally, should the biopsy represent an isolated tumor, limited resection is the best option. Therefore, a reasonable management approach to bronchial CIS would include: thorough radiologic evaluation to assess synchronous cancer, consideration of bronchoscopic biopsy proximal to the tumor to assess submucosal extension, followed by limited resection.

The prognosis of patients with early bronchogenic cancer was examined in 1982 by Mason and Jordan. Their 17 early cancer patients fared only slightly better over five years than did patients with resected invasive carcinoma. However, crude survival was the basis of comparison and a third of their patients died of noncancer-related deaths. Overall, their pessimism may be premature. Late occurrence of second tumors (beyond five years) was reported in their study and long-term follow up, including chest x-ray films and sputum cytology, was considered mandatory.

As diagnostic capabilities improve, we hope the diagnosis of isolated early lung cancers will occur more frequently. If these lesions can be detected while very localized, as in this case, perhaps conservative approaches such as laser photoresection or cryotherapy may play a role in their definitive treatment. At present, limited resection appears to be the preferred option. However, much more information must be obtained before an accurate assessment of management strategies can be made.

REFERENCES