Co-existence of Bronchial Adenoma with Pulmonary Tuberculosis

A CASE REPORT

JOSEPH N. ACETO, M.D., F.C.C.P.* and SUSHIL CHAKRAVARTY, M.D., F.C.C.P.
Philadelphia, Pennsylvania

In the past 20 years, there has been an increasing amount of information forwarded regarding the tumor generally known as bronchial adenoma. Much has been said regarding their classification and nomenclature. Out of many names, those of cylindroma and carcinoid emerge as those in common usage to denote histologic types of bronchial adenoma. There are those who would stress the differences between the two types as being more than based on differences of histologic appearance. Enterline and Schoenberg¹ point out that cylindroma causes death or tends to recur seven times as frequently as the carcinoid type. They also feel that cylindroma occurring in the tracheobronchial tree is identical with those tumors arising from salivary glands and ducts, paranasal sinuses and palate, and when occurring in these sites, they are called carcinoma. On the other hand, Davey and Hardy² feel that cylindroma only superficially resembles the above-mentioned tumors in the salivary glands, paranasal sinuses and palate, and, that certain histologic changes that do occur in them, are not present in cylindroma. For the purpose of this report, it is our belief that Doty's³ point of view is the most practical. That is, it is of little practical importance to stress the difference in these two types of this tracheobronchial tumor, since each type gives the same clinical picture, each can be locally invasive and even distantly metastasizing, thereby necessitating the same therapeutic approach.

What is generally agreed upon is that it is more common in women than in men, and that in at least 50 per cent of the cases, it occurs in patients below thirty years of age. It is slow-growing. The duration of symptoms before a diagnosis was made in a series analyzed by Herbut⁴ was from two to eight years. Moersch and Harrington,⁵ in a summary point out that symptoms produced depend on the location, size of the tumor, and the characteristically easy bleeding of these tumors. Thus, they are marked clinically by hemoptysis, and the sequelae to bronchial irritation and obstruction, i.e., cough, wheezing (usually unilateral), fever, chest pain and dyspnea. Fifteen per cent of a series of 100 cases quoted by Moersch and Harrington had no pulmonary symptom, presumably because they did not cause obstruction or interfere with drainage of the bronchus. Chest x-ray findings are usually those of atelectasis, though occasionally a well-delineated, round density is seen.

From the Dept. of Chronic Diseases of the Chest, Blockley Division, Philadelphia General Hospital.
*Presently in Warren, Ohio.
When faced with a clinical picture and chest x-ray film appearance conforming with the above, the differential diagnosis would consist mainly of eliminating bronchiogenic carcinoma or tuberculosis. Obviously, other diseases might be considered, but these two would probably remain uppermost in the diagnostic approach. The age and sex characteristics of the patient, and the duration of symptoms, may be of some aid in the differentiation of bronchial adenoma from bronchiogenic carcinoma. The fact that in two-thirds of cases of bronchial adenoma the tumor involves the main lower lobe bronchi, while lower lobe tuberculosis as the initial or sole site is relatively uncommon may be helpful in differentiating this tumor from tuberculosis. Bronchoscopy would be of greatest aid at this point, for, if a tumor were found, it could be biopsied. In the face of sepsis, however, especially in a young woman with the presence or history of hemoptysis, it is conceivable that one might hesitate before bronchoscopy in order to institute a search for acid-fast bacilli in the sputum. If this yielded no tubercle bacilli, then, probably, bronchoscopy would follow. On the other hand, if acid-fast bacilli were found in the sputum, the temptation would be present to explain the clinical picture entirely on the basis of active, pulmonary tuberculosis. One reason for this report is to emphasize the fact that to yield to the above temptation, especially in the face of atelectatic-appearing, lower lobe disease, would be a serious oversight.

The other reason for this report is that a review of the literature pertaining to bronchial adenoma fails to reveal mention of this tumor existing in conjunction with proved pulmonary tuberculosis, except for a report by Zorini. He describes a patient who received the diagnosis of pulmonary tuberculosis.
tuberculosis on clinical grounds alone, without bacteriologic confirmation, and who was placed in a sanatorium. He continued to have negative spu
ta for several years, before finally developing actual tuberculosis because, in Zorini's opinion, of his exposure to the disease in the hospital. The
patient was later found to have bronchial adenoma.

In a clinicopathologic exercise in an issue of the New England Journal
of Medicine of 1953, the patient discussed had a history of over 30 years
of intermittent hemoptysis. Before the true nature of her condition was
finally ascertained, she had been treated for pulmonary tuberculosis, the
diagnosis having been made clinically and without bacteriologic confirma-
tion. Following operation for bronchial adenoma after the diagnosis had
finally been made, histologic examination failed to reveal evidence of
tuberculosis. Aside from the above two, the articles already referred to
in this report, in addition to review articles by Delarue and McBurney, fail
to document cases of tuberculosis of the lung co-existing with bron-
chial adenoma.

E. G., a 25 year old negress, entered Philadelphia General Hospital on May 1, 1953, with the chief complaint of easy fatigue of two months duration. She had been in
this hospital in 1945, 1946 and 1948 for uneventful deliveries of infants. On the last
of these admissions, a chest x-ray survey film was taken and was read as, "Increased
markings, both bases." She failed to return for x-ray film follow-up until March of
1949, when a well-delineated density was seen in the right lower lung field, adjacent
to the heart shadow. She was referred to the City Chest Clinic of her district, but
did not comply with this recommendation, and was lost from observation.

One year prior to the admission of May 1, 1953, she had an episode of hemoptysis. She did not seek medical attention until four months prior to admission, when she went
to the outpatient clinic of another hospital for pre-natal care. The previously de-
scribed lesion was noted by chest x-ray film. Smears of sputum were found to be
positive for acid-fast bacilli, and she was sent to Philadelphia General Hospital for
admission to the tuberculosis department.

On admission, physical examination revealed blood pressure of 105/60, respirations
of 20/min., pulse of 80/min. and normal temperature. The other positive findings
were: coarse ronchi in the base of the right lung posteriorly; the abdomen enlarged
with a symmetrical mass compatible with a five month pregnancy; several small,
firm, shotty nodes in both inguinal regions. The admission chest x-ray film was read
as follows: "The left lung field is normal, with deviation of the heart and mediasinum
to the right. The right diaphragm is elevated. There is a homogeneous density,
sharply circumscribed, in the right base, measuring 5 by 6 cm. in diameter. It is ad-
jacent to the right cardiac border." (Fig. 1).

A culture for acid-fast bacilli from sputum was positive. Because of the localized
physical findings in the chest, and of the atelectatic appearance of the lesion, bron-
choscopy was done. It was found that the right middle lobe orifice was blocked by
"granulation tissue." Biopsy report stated: "Specimen consists of fragments of con-
nective tissue containing cords and nests of epithelial cells surrounding cylindrical
masses of hyaline material. There are no mitotic figures. There is no evidence of
tuberculosis. Impression: probably adenoma (cylindroma) of the Bronchus." It was
decided to continue treatment, consisting of streptomycin and PAS, and wait until
obstetrical delivery. She was delivered of a normal infant on Sept. 28, 1953 and had
an uneventful post-partum period.

Thoracotomy was done on Oct. 28, 1953. The description of the findings seen at
surgery follows: "There was a large, rounded mass about 3-4 cm. in diameter in-
volving most all of the hilar structures. It appeared to be surrounded by inflammatory
tissue. It directly invaded the pericardium at one point. The entire middle lobe, distal
to the tumor, was atelectatic. The pleural cavity was normal. Right pneumonectomy
was performed, and a section of pericardium was removed with the hilar tumor.
Post-operative dissection of the removed lung revealed the tumor arising from the
middle lobe bronchus."

The report of the frozen and histologic examination states, "The specimen consists
of the right lung with a pinkish, firm mass, 4 cm. in diameter, and a small white
mass, both lying on the medial surface of the lower lobe. The tumor appears to be
encapsulated. Microscopic sections reveal cords of clear, polygonal cells which are
not anaplastic. The stroma is formed of loose, edematous connective tissue with strands
of fibrillar eosinophilic material resembling those seen in cylindroma.” Additional sections were taken from the surrounding inflammatory tissue and revealed that, “Throughout the tissue there are tubercles composed of foci of caseation necrosis surrounded by lymphocytes, plasma cells, epithelioid cells, Langhans giant cells and fibroblasts. Acid-fast stain reveals the presence of acid-fast rods within some of the caseous lesions. Pathologic diagnosis: 1. Bronchial adenoma. 2. Pulmonary tuberculosis.”

Discussion

Zorini’s patient, could have been spared a great deal of difficulty had bronchoscopy been done early. In the case presented by us, it is noteworthy that bronchoscopy was done in spite of finding tubercle bacilli in the sputum, which had apparently completely satisfied the referring hospital as to the exclusively tuberculous etiology of the findings. It is felt that this underscores the usefulness of routine bronchoscopic examination as part of the evaluation of almost all patients with pulmonary tuberculosis.

This report points out that bronchial adenoma and pulmonary tuberculosis may occur together, though apparently not often, and they do not mutually exclude each other in the same patient.

A minor point of interest is that the patient discussed here is Negro. In the Enterline and Schoenberg article, it is stated that in reviewing all the previous literature, it is found that the race of the patient is not noted in 50 per cent of the cases reported, and that no Negro was reported in the other 50 per cent where mention is made of the race.

REFERENCES