pulmonary toxicity even when pulmonary toxicity was defined as liberally as the finding of dry bibasilar rales on auscultation. This represents an incidence of pulmonary morbidity of approximately 11 percent. Although clinical evidence of pulmonary toxicity, as evidenced by bibasilar rales, was found in some patients at all dose levels, in no case was life-threatening interstitial pneumonitis found at a dose below 150 mg. The overall mortality to bleomycin in the series by Blum and colleagues series was less than 1 percent, and appeared to be dose-related with eight of the nine tissue-documented cases of bleomycin pulmonary toxicity having involved a total dose exceeding 200 mg. These results reported by Blum et al are in keeping with those reported by Luna et al.7 Adriamycin has no significant pulmonary toxicity.8-10 The role of 20 months of cyclophosphamide therapy in possibly predisposing our patient to the cytotoxic effects of bleomycin is unknown. We suggest that clinicians be alert to the possibility of synergism between these two drugs in future cases.

Whether the dramatic improvement in our patient was due to, or in spite of, the prednisone therapy is moot. Certainly, the use of corticosteroids in bleomycin pneumonitis is controversial; however, it is our opinion that they were of benefit. To our knowledge, survival in tissue documented bleomycin pulmonary toxicity with apparent complete reversal of findings has not previously been reported with a total bleomycin dose of less than 180 mg.11

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**Differentiation between Hydropneumothorax and Destroyed Lung by Thoracoscopy with a Fiberoptic Bronchoscope**

Mario Brezler, M.D.,** and Hana Abeles, M.D., F.C.C.F.†

In a 39-year-old man radiologic examination could not distinguish definitely between a hydropneumothorax and total destruction of one lung. Introduction of a fiberoptic bronchoscope through the opening for the chest drainage tube permitted direct inspection of the air space. A definite diagnosis of a destroyed lung was made, permitting appropriate modification of the treatment.

In a recent report on the destroyed tuberculous lung, it was pointed out that it is often difficult to distinguish between a destroyed lung and a large chronic pneumothorax with a bronchopleural fistula.1 In both conditions the chest films show a large air space with fibrous bands and frequently a basal fluid level. When progressive excavation of the lung can be followed by serial roentgenograms, the distinction between the two conditions can be made readily. When no previous films are available for comparison, this distinction may not be possible.

The differential diagnosis is important, however, since the treatment of the two conditions is usually quite different. A chronic hydropneumothorax with bronchopleural fistula requires surgical drainage and frequently a definite major surgical procedure at a later date. In a destroyed tuberculous lung surgical drainage is rarely indicated, and medical management is feasible in cases where pneumonectomy is considered to be a great risk.1

Any procedure that may assist in the differential diagnosis between these two conditions is, therefore, helpful in the management of such cases. The fiberoptic bronchoscope has been used successfully for pleuroscopy and pleural biopsy.2 In the following case the fiberoptic bronchoscope, used by the transthoracic approach, enabled us to distinguish between a chronic hydropneumothorax and a destroyed lung and led to appropriate modification of treatment.

**Case Report**

A 39-year-old man was admitted to another hospital with a history of progressive weakness and weight loss on November 21, 1973. Physical examination revealed dullness over the lower third of the left lung posteriorly, diminished breath sounds over the left upper lung fields anteriorly and posteriorly, and amorphous breath sounds in the left axillary region.

*From the Pulmonary Division, Department of Medicine, Albert Einstein College of Medicine, and the Chest Service, Department of Medicine, the Bronx Municipal Hospital Center, Bronx, NY.
**Presently Director, Pulmonary Division, Akron City Hospital, Akron, Ohio.
†Associate Professor of Medicine, Albert Einstein College of Medicine.

Reprint requests: Dr. Abeles, Van Etten Hospital, Bronx, New York 10461

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Coarse rales were heard over the right upper posterior lung field.

The chest roentgenogram showed a large air space with transverse bands crossing the space and a basal fluid level on the left side, and infiltrations throughout the right lung. A sputum smear showed acid-fast bacilli, subsequently identified as typical *Mycobacterium tuberculosis*. A diagnostic aspiration of the fluid revealed cloudy fluid with acid-fast bacilli on smear.

Closed-chest tube drainage was instituted on the left (Fig 1). Drainage consisted of approximately 200 ml of purulent material a day. Treatment was initiated with 1 gm of streptomycin intramuscularly, 300 mg of isoniazid, and 1,000 mg of ethambutol daily.

In order to differentiate between a hydropneumothorax and a destroyed lung, a fiberoptic bronchoscope was inserted through the chest wall opening. A large space was seen with ridges along the wall which was smooth and glistening. Several large bronchial openings were clearly seen entering the air space, which was interpreted as a tuberculosis cavity. It was, therefore, decided to treat the condition as a destroyed lung, and the chest tube was removed. There was no ill effect. The wound healed promptly, and the fluid level remained unchanged. The right-sided lesions improved, the sputum became negative on culture, and the patient was discharged in May 1974. On reexamination in September 1974, the patient was fully ambulatory and looking for work.

**DISCUSSION**

Since the introduction of the fiberoptic bronchoscope, its use has been extended to a variety of procedures. Recently it was found useful for performing lung biopsies and pleural biopsies. We used it in a similar way to the one described for pleuroscopy, realizing that we might enter directly into a pulmonary cavity. We actually used the fiberoptic instrument as a cavernoscope. The information gained by this procedure was important, because it resulted in a modification of treatment.

**REFERENCES**


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**ANNOUNCEMENTS**

**Chest Disease Conference**

A one-day chest disease conference will be presented September 28 at the Statler Hilton Hotel, Buffalo, New York. Sponsors are the Department of Medicine, School of Medicine, State University of New York at Buffalo; co-sponsors are the American Lung Association of Western New York, American College of Chest Physicians, New York State Chapter, ACCP; and New York State Traudeau Society, State Chapter of the American Thoracic Society. For information, contact Continuing Medical Education, 2211 Main Street, Buffalo, New York 14214.

**Allergy and Immunology for the Practicing Physician**

A four-day symposium on Allergy and Immunology for the Practicing Physician will be held at the Greenbrier Hotel, White Sulphur Springs, West Virginia, August 17-20. For further information, contact Claude A. Frazier, M.D., 4-C Doctors Park, Asheville, North Carolina 28801.