A New Therapeutic Application of the Fiberoptic Bronchoscope

To the Editor:

Since the initial description of fiberoptic bronchoscopy, its multiple diagnostic advantages have become well known. Recently, its therapeutic possibilities have also been discovered. This is a report of the successful closure of a bronchopleural fistula by means of a fiberoptic bronchoscope, using the tissue glue, methyl-2-cyanoacrylate (Histoacryl N Braun Melsungen).\(^1\)

**CASE REPORT**

The patient is a 44-year-old white man who was followed up because of pulmonary fibrosis secondary to ankylosing spondylitis.\(^2\) An aspergilloma developed in his fibrotic right upper lobe and led to extensive clinical symptoms, with fever and loss of weight. At this time, his vital capacity was reduced to only 1,680 ml (33.4 percent of the predicted value).

An attempt was made to remove the aspergilloma by surgery. A thoracoplasty was performed, resecting the first to fifth ribs. On the fourth postoperative day, an increasing bronchopleural fistula developed, even though initially all bronchopleural connections had been closed in the very fragile tissue of the upper lobe. Complete collapse of the lung could be prevented by suction drainage; however, an increasing air leak led to clinical worsening, with dyspnea.

The possibility of a repeat surgical procedure with closure of the fistula was rejected because of high operative risk with small prospective chance of success. Scintiscans demonstrated that the upper lobes were no longer perfused; thus, we decided to definitely occlude the bronchi of the upper lobe.

To the apical and the posterior upper bronchi had been filled with tissue glue. A special difficulty consisted of the fact that solidification of the glue occurred in about 10 seconds. Therefore, rapid injection through the 70-cm Teflon catheter was necessary.

After the apical and the posterior upper bronchi had been filled in this way, a drastic improvement occurred. The dyspnea and the leak almost completely disappeared; however, during the next days the right upper posterior bronchus developed a new leak. This was occluded in an additional session using the same technique, which again led to a further clinical improvement. Even though a complete expansion of the lung was not achieved after the suction drainage was stopped, the residual cavity secondary to thoracotomy and thoracoplasty could be kept minimal.

**DISCUSSION**

This case demonstrates that the fiberoptic bronchoscope provides a useful therapeutic aid in desperate situations with bronchopleural fistulas, where improvement by surgical approach cannot be expected.

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**REFERENCES**


The Flipped Pacemaker

**Radiographic Diagnosis of a Cause of Malfunction of Rechargeable Pacemakers**

To the Editor:

Previous literature has described the radiographic diagnosis of malfunction of the various battery-operated cardiac pacemakers.\(^1\) In response to the continuing search for cardiac pacemaker generators with increased in vitro longevity, a transcutaneously rechargeable power source was developed by the Applied Physics Laboratory of Johns Hopkins University.\(^2\) Since February 1973, approximately 4,000 such pacemakers (Pacemaker Systems, Inc.) have been implanted, with a highly satisfactory performance record and excellent patient accept-

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any position that induces satisfactory electromagnetic coupling for charging, the flipping over of the pacemaker can be easily recognized radiographically.

**Case Report**

In September 1975, a 44-year-old moderately obese woman had a rechargeable cardiac pacemaker placed in the left subclavicular subcutaneous fat for third-degree heart block. Endocardial electrodes were introduced into a branch of the left subclavian vein and advanced to the apex of the right ventricle. Beginning in December 1975, the patient noted difficulty in charging the generator. By palpation, it could not be determined whether the unit had flipped over.

Radiographs obtained on Feb 11, 1976 revealed the electrode lead to be exiting the lateral aspect of the pacemaker, the position the lead should be in if the pacemaker were placed with the charging coil facing externally (Fig 1A). However, on Feb 18, 1976, the electrode lead was noted to be exiting the medial aspect of the pacemaker (Fig 1B), indicating that the pacemaker had turned over, with its charging coil now facing the chest wall. The patient had not manually manipulated the generator.

On Feb 20, 1976, the pacemaker was repositioned within a new and tighter subcutaneous pocket, and the original pocket was obliterated. The original pocket was found to have been unusually large, permitting rotation of the generator. There was no inflammation or effusion in the pocket. Recovery was uneventful.

**Discussion**

If a rechargeable pacemaker in the left anterior portion of the chest is in normal position, the electrode lead will exit the pacemaker cephalad along its lateral aspect; if the electrodes exit cephalad along the medial aspect, the pacemaker has turned over and is no longer rechargeable transcutaneously. Serial films are unnecessary to make this diagnosis. If the pacemaker has rotated 180° without flipping over, the charging surface will still be anteriorly directed, but the lead will exit the pacemaker pack medially and caudally; we have not observed this theoretic complication.

This simple radiographic diagnosis of the flipped pacemaker has not been previously reported; the patient reported here is the first to encounter this problem among the 15 who have undergone placement of rechargeable pacemakers at our institution. As with any other pacemaker, and in anticipation of this complication, postoperative baseline posteroanterior chest radiographs are indicated before the patient is discharged from the hospital.

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The Program Committee invites submission of abstracts (circulation, respiration, thoracic-cardiovascular surgery, and related systems) for presentation at the 1977 Annual Meeting in Las Vegas, Nevada, October 30-November 3, 1977. Membership in the College is not a prerequisite to participation in the program. Investigators from outside the United States are welcome, provided abstracts and presentations are in English. The Scientific Program Committee will communicate their decisions to all applicants within six weeks after the deadline, May 1, 1977. Presentations will be limited to 10 minutes with 2 minutes for discussion. Abstracts accepted for presentation will be published in CHEST. A mandatory requirement is that material submitted will not be published or presented elsewhere prior to November 3, 1977.

1. Abstracts should be not more than 150 words in length and typed double spaced. Please provide an original and four carbon copies.
2. Include the title of the paper, full first and last names (not initials only) of authors and institution where work was performed.
3. Provide full address where correspondence should be directed.
4. Identify individual who will present the paper.

DEADLINE: MAY 1, 1977

The same abstract may be submitted for only one section of the program, i.e., either the Original Investigation section, or Cecile Lehman Mayer Research Award.

CALL FOR SCIENTIFIC EXHIBITS

The American College of Chest Physicians will present scientific exhibits as a major feature of the Annual Fall Scientific Assembly. The exhibit space will be in the same area as the lecture rooms. Please request scientific exhibit application forms from the Chairman, Scientific Exhibit Committee, American College of Chest Physicians, 911 Busse Highway, Park Ridge, Illinois 60068. Exhibitors need not be members of the college.

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CALL FOR SCIENTIFIC MOTION PICTURES

The Motion Picture Committee for the Annual Fall Scientific Assembly welcomes submission of scientific motion pictures for their review. Several sessions have been scheduled for presentation of films and discussion periods. Please write for film application form: Chairman, Motion Picture Committee, 911 Busse Highway, Park Ridge, Illinois 60068.

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Thin-Walled Cavitary Bronchiolar Carcinoma

To the Editor:

It is well established that bronchogenic carcinoma of the lung may appear with radiographic evidence of cavitation.1,2 This is the first report of thin-walled cavitary bronchiolar carcinoma.

CASE REPORT

We recently saw a 58-year-old woman who had been followed in the Dermatology Clinic because of an unusual skin lesion. She was referred to us because her chest x-ray film showed a thin-walled cavitary lesion in the left lower pulmonary field (Fig 1). She had smoked cigarettes for many years and admitted to a 5.4-kg (12-lb) weight loss. Physical examination was unrevealing. Laboratory data were not helpful for diagnosis. Examination with the flexible fiberoptic bronchoscope under fluoroscopic guidance showed normal findings. The patient subsequently underwent a left pneumonectomy. Microscopic examination revealed bronchiolar carcinoma.

DISCUSSION

Cavitary pulmonary lesions of a thin-walled variety are not usually considered to be neoplastic. The Mayo Clinic series from 19601 reported only three cases. Cavitary bronchiolar carcinoma is also very unusual. We have found only five cases in our review of the literature,2-4 two of which involved mycetomas.

The pathogenesis of the development of cavities in carcinoma of the lung has been reviewed by others.1-2,5 We would suggest that a thin-walled cystic lesion of this type may be explained by the lepidic nature of this cell type. In the proper clinical setting, therefore, the presence of a thin-walled cavity of the lung does not exclude the possibility of carcinoma as a diagnosis.

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REFERENCES


Continuous Heart Murmur Following Coronary Arterial Bypass Surgery

To the Editor:

We previously reported a patient with a continuous heart murmur following coronary arterial bypass graft surgery1 and speculated that it might have been produced by turbulent flow related to the graft. Sass2 questioned the cardiac origin of the murmur and suggested that it emanated from a fistula in the chest wall. During subsequent reevaluations of this patient, the auscultatory findings were unchanged by simultaneous digital compression of various sites on the chest wall,