Studies from Swan-Ganz catheterization with determination of pulmonary wedge pressure and calculation of left ventricular end diastolic pressure would have given the data needed to confirm or disprove their theory. In addition, thermodilution studies with the catheter in place to determine cardiac output would have been valuable to substantiate their hypothesis.

If Swan-Ganz catheterization showed elevated pulmonary arterial pressures signifying pulmonary hypertension, a more likely explanation of dyspnea would be recurrent pulmonary emboli. These could arise via collateral venous channels or recanalization of the ligated inferior vena cava.

By their own admission, in the three of four cases where lung scans were done an intermediate probability for pulmonary embolus was present. The present state-of-the-art mandates the performance of pulmonary arteriography—the gold standard—to confirm or deny the presence of pulmonary emboli. This would be particularly true in patients with a history of emboli where there is high clinical suspicion of recurrent embolii. Only an absolutely negative ventilation/perfusion lung scan rules out pulmonary thromboembolism; in all other cases pulmonary angiography should be performed.

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Despite lung scan results, the clinical impression was that none of these patients had pulmonary emboli and, therefore, pulmonary angiography was not deemed warranted. Two of the patients had positive smoking histories, one of whom also had evidence of obstructive lung disease by pulmonary function testing which may have accounted for abnormalities on the lung scans.

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Resuscitation In the Elderly

To the Editor:

I can think of no better illustration of the critical issue of high-tech healthcare so elegantly discussed by Dr. Cohn than a case report found in the same issue of Chest. In this report, a 95-year-old woman collapsed at a nursing home and it appeared that extremely vigorous measures were taken to resuscitate her. Resuscitation of all individuals, regardless of age or quality of life, will no doubt result in enormous expenditures both in terms of services offered by paramedics and emergency departments who perform the resuscitation, and also from the cost of caring for survivors of resuscitation in intensive care units. As Dr. Cohn suggests, it is crucial to include the elderly in studies on the effects of high-tech healthcare. Both prehospital and in-hospital resuscitation should be a part of this effort.

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REFERENCES


Digoxin-Like Immunoreactivity

To the Editor

Using radioimmunoassays, digoxin-like immunoreactivity has been found in the blood, urine, and amniotic fluid of human subjects not receiving cardiac glycosides. In some studies, digoxin-like immunoreactive substances (DLIS) have also been shown to have digitalis-like bioactivity. High levels of DLIS have been found in the blood of patients with chronic renal failure, in cord blood and in the blood of pregnant women. However, the clinical relations of urinary DLIS have not been determined. Accordingly, our purpose is to report on the findings in a heterogenous population of human subjects whose urine was examined for DLIS.

Urine specimens submitted to a hospital laboratory for chemical analysis were selected at random for digoxin assay. Urine samples of healthy, ambulatory subjects were also assayed. Whenever DLIS was detected, the case was reviewed to ensure that cardiac glycosides had never been administered. Urine samples were derived from a heterogenous population, of both sexes, ranging from 1 to 93 years of age. In 40 patients, urinary creatinine concentration was also measured and in 30, a 24-hr urine collection was obtained and creatinine clearance was calculated.

Digoxin levels were determined by radioimmunoassays. Assays

Invasive Aspergillosis

To the Editor:

Over the last decade, divisions between the syndromes of Aspergillus-related diseases have become less distinct. Case reports have described the rapid development of aspergillomas in the setting of allergic bronchopulmonary Aspergillosis (ABPA), and the progression of ABPA to invasive Aspergillosis.1,3 We wish to report the rapid development of invasive Aspergillosis in a patient with ABPA, and the effects of subsequent treatment with systemic amphotericin B.

CASE REPORT

A 70-year-old man with longstanding asthma was diagnosed with ABPA in 1980 on the basis of a positive immediate skin test for Aspergillus, marked eosinophilia, central bronchiectasis, and repeated expectoration of mucopurulent plugs containing Aspergillus. The patient was treated with systemic corticosteroid therapy intermittently over the following six years. In October, 1986, the patient complained of increased fatigue. Chest film revealed a new 2.5 cm mass in the superior segment of the right lower lobe. Bronchoscopy and transthoracic needle aspiration (TTNA) were performed. Aspergillus was cultured from the TTNA specimen; however, pathology from both procedures was nonspecific. Despite low complement fixation titers for Aspergillus antibodies, IgE levels were persistently elevated (2,400 to 3,000 IU/ml). Therapy was started with prednisone (40 mg per day) as treatment for a presumed exacerbation of ABPA.

Three weeks later, the patient returned with complaints of purulent sputum and fever. Chest film and subsequent CAT scan revealed a thick-walled cavity which was peripheral and not contiguous with a major bronchus (Fig 1). Repeat transthoracical biopsies revealed chronic granulomatous inflammation with abundant Aspergillus hyphae penetrating the cavity wall. Steroid therapy was rapidly tapered, and the patient began on intravenous amphotericin (total dose 1.2 g). At completion of therapy, the patient’s radiographic abnormality had cleared completely. IgE levels fell to less than 1,500 IU/ml and remained below that level with a maintenance prednisone dosage of 5 mg every other day.

DISCUSSION

This case is unique in that it describes the successful chemotherapeutic treatment of locally invasive aspergillosis in a patient with underlying ABPA. The outcome has been poor in previously reported cases of ABPA-related Aspergillus tissue invasion, despite the use of resectional surgery.4,5 Our success may be due to the early recognition and treatment of this entity.

Rather than disseminated disease, our patient’s course was characterized by symptomatic local invasion of the pulmonary parenchyma, resulting in progressive cavitation. This therefore represents “semi-invasive” or chronic necrotizing aspergillosis.4,5 The patient’s obstructive pulmonary disease and low-dose corticosteroid regimen appear to be an adequate predisposition for this entity.4 A more limited degree of tissue invasion may occur in uncomplicated ABPA and could have served as a nidus for the parenchymal destruction seen in this patient.4 Others have sug-

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