To the Editor:

We are pleased that our report (Chest 1984; 85:837-38) has prompted pulmonologists interested in fiberoptic bronchoscopy to describe experiences of a similar nature. Weisberg's report regarding the breakage of Pilling foreign body grasping forceps during rigid bronchoscopy is somewhat comparable to our experience, though the two mishaps occurred under different circumstances.

The "intrinsic metal defect" suggested by Masa-Jimenez et al warrants consideration, although in our experience one biopsy forceps head broke after only ten procedures, while the other two had already been used in a number of biopsies before breaking. Therefore, while metal fatigue and possible mechanical malfunction of the delicate biopsy heads cannot be ruled out, other factors as reported by us need some consideration.

Occasional reporting of such accidents keep the practicing physician on the alert. The preventive steps suggested by Weisberg in the care of delicate biopsy heads are, certainly, routinely followed by all bronchoscopists. At any rate, the re-emphasis is timely.

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Acute Pulmonary Fibrosis Associated with Respiratory Failure

To the Editor:

The recent study on lung collagen amounts after prolonged support of acute respiratory failure (Chest 1984; 85:641-46) reported a wide variation in collagen contents in the patients. Thus, the patient collective was arbitrarily divided into two groups, one having high collagen contents, the other showing a lower level of collagen. Using sophisticated statistical methods, the impression arose that the inspired high oxygen concentration and prolonged elevated levels of end-expiratory pressure caused the collagen accumulation in the high collagen group.

Although it was stated in the discussion that "clinical data did not prove the hypothesis that . . . the increased collagen group had a more severe lung injury requiring more intense treatment", the reader can get the opinion that the high collagen group was more severely affected than those patients with normal collagen amounts. The oxygenation especially (PaO2/FIO2) was "significantly worse in the increased collagen group than in the normal collagen group". One important indicator for lung injury and its severity, the extravascular lung water (EVLW), which may have been helpful for the definition of onset and severity of lung injury in the patients, was not presented. Furthermore, the collagen content results may have been influenced in some of the patients by advanced age, as age-related changes occur in the lung connective tissue composition. As in diseases like cirrhosis, leukemia or pneumonia, the exact onset of the lung injury is often not clearly definable. Thus, in some of the cases it may be extremely difficult to establish a clear-cut time frame for the tissue changes. Recently, we conducted a similar study on methodically selected, young patients with clearly defined severe post-traumatic respiratory distress and a pattern of structural and functional changes, including initial interstitial edema. We found several changes similar to those in the study mentioned before, including a lack of increase in collagen contents in the first two weeks of survival and increases in other tissue components parallel to collagen increase. In contrast to their observations, we found, in all our patients surviving for more than two weeks, increases in the collagen contents, as also reported by Zapol and co-workers.

Thus, we feel that in severely affected patients pulmonary fibrosis may develop more readily. Since severe lung injury, high inspired oxygen concentrations and barotrauma are interdependent, it seems impossible at the present stage to distinguish the effects of the underlying lung injury and the subsequent therapy.

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To the Editor:

We agree that at this stage it is not possible to definitely "distinguish the effects of the underlying lung injury and the subsequent therapy." Unfortunately, we do not have measurements of extravascular lung water in our patients. In regard to age-related changes, the work by Johnson and Andrews used percentages of collagen and elastin, not absolute amounts, and showed a decreased percent collagen with age. In the accompanying figure, we have calculated collagen contents per left lower lobe and superimposed the data of Nerlich et al, assuming that the left lower lobe is 25 percent of the entire lung, on the data from our patients who spent more than 14 days on the ventilator. Because of the way they expressed their data, it is difficult to calculate means ± SD for their controls. However, their patients in the time span of 14 to 19 days (subjects 4 through 8) appear within the control range and intermediate between our increased and normal collagen patients. The last two patients (10 and 11) appear to definitely increase. Based on this analysis, their statement that "we found, in all our patients surviving for more than two weeks, increases in the collagen contents" is questionable.

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Usefulness of FEF25-75% and FEF200-1200 for the Graphic/computational Interpretation of Spirometry

To the Editor:

We would like to comment on some of the points raised by H. M. Thomas and R. C. Garrett (Chest 1984; 86:129-31) on the basis of our

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One of these 10 patients had diffuse pulmonary infiltrates on chest radiographs. Both the first and second bronchoscopies revealed nonspecific inflammation, but a diagnosis of acute histoplasmosis was later established on the basis of serologic tests. The other nine patients had peripherally located mass lesions varying from 2 to 7 cm in diameter, revealed on chest radiographs. Only one of these nine patients had a diagnosis of bronchogenic carcinoma confirmed on the repeat transbronchial lung biopsy. In the other eight patients, histological features from initial and repeat transbronchial lung biopsy were similar and revealed either normal lung parenchymal tissues or nonspecific interstitial fibrosis. In four of these eight patients, a diagnosis of carcinoma was subsequently established by thoracotomy or transthoracic needle biopsy. Two proved to have resolving pneumonia and the diagnosis remains undetermined for the other two after six months of follow-up. No significant complications occurred during or after the biopsy procedure.

This retrospective study indicates that if a well-performed single transbronchial lung biopsy fails to establish a diagnosis, the diagnostic yield of a repeat transbronchial lung biopsy is low, and clinical correlation and other diagnostic procedures are preferable to repeating the transbronchial lung biopsy.

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REFERENCES


Proper Use of Metered Dose Inhalers

To the Editor:

The editorial by Newman and Clark (Chest 1984;86:342-44) effectively summarizes many of the problems encountered by physicians and patients in determining the proper use of metered dose inhalers (MDI). This letter addresses some additional considerations for the proper use of MDI.

Patients should be instructed on the proper assembly of the prescribed MDI. Devices such as the Azmacort® MDI and the Isuprel® MDI require several assembly steps which may not be self-evident upon initial examination of the system. Many MDI are capable of accommodating dimes and pennies and ejecting them during inspiration. Therefore, patients should be advised to keep the MDI capped between doses. Patients should be advised to exhale slowly and fully prior to and after administration of the drug. Forceful exhalation may produce bronchospasm or dislodge drug from peripheral airways. Advising the patient to hold the MDI upright or inverted may confuse the patient. Advising the patient to keep the nozzle end down clarifies the proper position.

Only a few studies have been published on the question of the most effective MDI mouth placement method. The numbers of patients per study is small. One study is published in abstract form and does not include enough data to critically evaluate the results. Even though opinion among researchers is about equally divided, the standards committee of the Canadian Thoracic Society has recommended the open mouth technique. Until more information is available, the patient should be advised to use whichever method is the most effective and easiest to perform.

The time to initial and peak response to an inhaled sympathomimetic differs among the sympathomimetics. Therefore, timing of successive MDI doses should be different for each drug. For example, Dulfan® found no difference in bronchodilator effects of terbutaline between single doses or divided doses, but gave the multiple inhalations at two-minute intervals. Heimer et al®...