were CEA negative and Leu-M1 or B72.3 positive have been reported. These latter two antibodies were not used by the authors. Furthermore, ultrastructural studies have been found useful by a number of authors, but were not employed in the study by Beauchamp et al. Some of these tests may not have been performed due to the limitation of the sample size. This merely serves to underscore the diagnostic limitations of closed-needle biopsy of the pleura.

It has been my experience that needle biopsy of the pleura is only occasionally sufficient to make an unequivocal premortem diagnosis of malignant mesothelioma, and then only after careful correlation with clinical and radiographic features. The study by Beauchamp et al. does not refute that position, and the readers of Chest should not conclude that closed-needle biopsy in most cases provides the pathologist with sufficient material to make this oftentimes difficult diagnostic distinction.

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To the Editor:

We appreciate the comments of Dr. Roggli and agree with him that closed-needle biopsy is not always sufficient to make the diagnosis of malignant mesothelioma of the pleura.

There is no single diagnostic test, pathologic or otherwise, for malignant mesothelioma of the pleura. Some biopsy samples will require more pathologic testing than others to help separate malignant mesothelioma from adenocarcinoma. However, not all biopsy samples require all pathologic tests to be performed on them for a diagnosis to be made.

The histochemical stains Alcian blue and colloidal iron can be positive in both malignant mesothelioma and adenocarcinoma. In malignant mesothelioma, Alcian blue and colloidal iron can stain positive due to their reaction with hyaluronic acid. In adenocarcinoma, Alcian blue and colloidal iron can stain positive due to their reaction with chondroitin sulfate. Hyaluronidase can be used to help separate the two. Exposure of the tissue to hyaluronidase will digest hyaluronic acid present in a mesothelioma; on subsequent exposure to Alcian blue or colloidal iron, the mesothelioma will fail to stain. However, hyaluronidase will not digest the chondroitin sulfate present in adenocarcinoma; on subsequent exposure to Alcian blue or colloidal iron the adenocarcinoma will still result in a positive reaction.

There are many antibodies available for use in immunohistochemical testing to differentiate malignant mesothelioma from adenocarcinoma. Of these antibodies, CEA is the most useful. However, no single antibody is diagnostic.

Although some authors have found electron microscopy to be useful, others have found this not to be the case. At the time of our diagnoses of malignant mesothelioma of the pleura, electron microscopy was not available at our institution.

In our study, we were able to make a diagnosis of malignant mesothelioma of the pleura in 20 cases utilizing some of the pathologic tests available. In these 20 cases, tissue was obtained at closed-needle biopsy of the pleura in 12. In 10 of these 12 cases a diagnosis of malignant mesothelioma of the pleura was made without subjecting the patient to an open pleural biopsy.

These findings show that the yield of malignant mesothelioma of the pleura by closed-needle biopsy, in their study, is higher than previously recorded. We suggest that this finding may be due to the improvement in pathologic tests that have become available in the past 10 years.

In light of these findings, we suggest that a closed-needle biopsy be performed before proceeding to open pleural biopsy when a diagnosis of malignant mesothelioma of the pleura is considered. The advantage to the patient, as well as the considerable reduction of hospital costs, in making a diagnosis by closed-needle biopsy is obvious. However, should a closed needle biopsy be nondiagnostic, we surely do not suggest that the investigation stop there. On the contrary, if a closed-needle biopsy is nondiagnostic for malignant pleural mesothelioma, open pleural biopsy or thoracoscopy should be performed.

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Discordance Between Cardiopulmonary Physiology and Physical Therapy

To the Editor:

In the June 1992 issue of Chest, Dean and Ross provided an interesting noncritical review of a selection of literature relating to cardiopulmonary physiotherapy (CPP) and the lack of clinical trials demonstrating its efficacy. However, this narrow review does not reflect current practice or discuss the literature that clearly supports CPP interventions. I was unclear as to who was the target audience for this article, since it does not provide physiotherapists with new information and ignored many important aspects of CPP.

Current CPP practice does not have a primary focus on removal of secretions unless they are the only pathologic change. Positioning and mobilization are integral components of CPP and will frequently be the only intervention required. I am not sure to whom Dean and Ross were referring when they cautioned against "primarily attributing the underlying mechanism of atelectasis to