Table 1—Pleural Fluid Characteristics of the Patient

<table>
<thead>
<tr>
<th>Date</th>
<th>Appearance</th>
<th>Protein, g/dl</th>
<th>Monocyte Count*</th>
<th>Lymphocyte Neutrophil Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 24</td>
<td>Serosanguineous</td>
<td>5.4</td>
<td>700</td>
<td>30:70</td>
</tr>
<tr>
<td>Mar 30</td>
<td>Yellow, clear</td>
<td>4.0</td>
<td>300</td>
<td>99:1</td>
</tr>
<tr>
<td>Jun 24</td>
<td>Yellow, clear</td>
<td>4.0</td>
<td>200</td>
<td>80:20</td>
</tr>
</tbody>
</table>

*Values are numbers of cells per microliter.

To the Editor:

In the January 1991 issue of *Chest*, Baughman et al reported the utility of bronchoscopy with bronchoalveolar lavage (BAL) in the diagnosis of *Mycobacterium tuberculosis* infections, and they concluded that BAL is useful for this indication. However, the *M tuberculosis* infection was diagnosed with only BAL in one of 29 cases, when BAL and bronchial wash specimens were obtained together.

In a prospective study previously reported by our group, we performed fiberoptic bronchoscopy with BAL and bronchial wash and obtained postbronchoscopy sputum specimens in 20 of 222 patients suspected of having pulmonary tuberculosis (all patients had three consecutive early morning sputum specimens or gastric aspiration smears that were negative for acid-fast bacilli, and seven also had negative Löwenstein cultures). The BAL fluid specimens provided the highest yield for diagnosis of pulmonary tuberculosis (15/17 [88 percent]); in seven of the cases, the BAL fluid specimen was the only positive source. Bronchial wash was positive in only nine (53 percent) patients. Bronchial washes were performed immediately after inspection of the tracheobronchial tree, and the specimens obtained were collected for study before BAL fluids were obtained.

The differences between the results of our study and those of the study by Baughman et al could be due to different methodology. In the latter study the bronchial wash included the aspirated fluid obtained after BAL, the diagnostic value of that fluid should be attributed to BAL, not to bronchial wash. Because of economic considerations, we now collect bronchial wash specimens and post-BAL aspirated fluid in the same receptacle. Thus, we obtain fewer diagnoses with BAL exclusively than when we performed bronchial wash without aspirating fluid after BAL.

In our experience, the diagnostic yield of bronchoscopy with BAL for *M tuberculosis* infection is significantly greater than that for bronchial wash (odds ratio = 6.67; confidence interval, 1.253 to 35.45). Therefore, BAL, fluid aspiration after BAL, and bronchial wash should be performed and a postbronchoscopy sputum specimen should be obtained when bronchoscopy is performed in patients suspected of having pulmonary tuberculosis, especially if previous sputum smear results were negative. Recently, the American Thoracic Society reported the utility of BAL for the diagnosis of pulmonary tuberculosis.

Javier de Gracia, M.D., Ph.D.; Victor Curull, M.D.; Rafael Vidal, M.D., Ph.D.; and Ferran Morell, M.D., Ph.D.; Pneumology Service, Hospital General Universitario Val d’Hebron, Barcelona, Spain

References

Usefulness of Bronchoscopy in the Diagnosis of Tuberculosis

To the Editor:

The study by Baughman et al, which appeared in the January 1991 issue of *Chest*, exaggerated the importance of bronchoscopy (or at least minimized the effectiveness of sputum examination) in the diagnosis of tuberculosis.

Of 99 patients with tuberculosis, only 50 underwent bronchoscopy. Of the 50 patients who underwent bronchoscopy, 20 did so only as part of the study, after the diagnosis had been made. Of the 30 patients who required bronchoscopy, nine had prebronchoscopy cultures which were later found to be positive. Three with negative bronchoscopy specimens had positive postbronchoscopy sputum cultures. Four patients had positive urine cultures; it is not said whether these overlap with the above groups. Thus, only 14 to 18 of the 99 patients (14 to 18 percent) required bronchoscopy for diagnosis. This is a significant percentage, but not what the authors imply.

Forty-nine patients did not undergo bronchoscopy. Of those 49, 33 had positive sputum specimens; 16 patients had extrapulmonary tuberculosis only. The correct sensitivity for sputum examination is 71 percent (57/80), obtained by adding those 33 patients to the authors’ 24/47 (51 percent). Sixty percent of the patients who underwent bronchoscopy did so because the sputum examination was negative. The authors, by calculating the sensitivity of sputum examination on the basis of the bronchoscopy group alone, have eliminated those patients in whom the sputum was positive.

Flexible bronchoscopy is helpful in the diagnosis of tuberculosis. However, the data, if not the authors’ conclusions, demonstrate that examination of sputum is effective. The main problem is not the insensitivity of the sputum examination, but the failure to consider the diagnosis in a particular case. In only 47 of the 50 bronchoscopy patients was prebronchoscopy sputum obtained. Could it be that 10...