Cytologically Proved Malignant Pleural Effusions

To the Editor:

We read with interest the report by Assi and colleagues1 on the distribution of transudates and exudates between cytologically proved malignant pleural effusions. The authors found that one of the 98 patients with malignant pleural effusions enrolled in the study, had a borderline transudate and had congestive heart failure at the time of the thoracentesis. The authors concluded that cytologically positive pleural effusions for malignancy are always exudates and that cytologic evaluation for malignant cells of a transudative pleural effusion is not recommended.

We wish to report the results of our prospective study. We studied 620 consecutive patients, and we identified 122 cytologically proved malignant pleural effusions. Pleural fluid lactate dehydrogenase (LDH), protein, and cholesterol values were obtained from medical records of the 122 patients (100%).

The criteria proposed by Light and colleagues2 were used to distinguish a transudate from an exudate. We also used our own criteria that were superior to the criteria of Light and colleagues in our series of patients.3 An exudative effusion was defined as meeting at least one of the following criteria: pleural fluid cholesterol level greater than 57 mg/dL, or pleural fluid lactate dehydrogenase level greater than 200 U/L.

There were 64 men and 58 women with a mean age of 66 years. The distribution of malignant tumors included lung carcinoma (n = 67), breast carcinoma (n = 17), an unknown primary tumor (n = 16), lymphoma (n = 13), plasmacytoma (n = 5), hepatocarcinoma (n = 2), colon carcinoma (n = 1), and malignant melanoma (n = 1).

One hundred and nine patients (89%) met the criteria for an exudate. None of the fluids defined as transudates by Light's criteria were classified as exudates using our own criteria.

We cannot share the authors' observations that cytologic evaluation for malignant cells of a transudative pleural effusion is not recommended. Maybe our results are influenced by the lower yield of Light's criteria in our series than previously reported.4

In conclusion, our results suggest that cytologic evaluation of pleural fluids should be considered as a useful test in the initial evaluation of pleural effusions.

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REFERENCES

3 Castro DJ, Pérez-Rodríguez E, Nuevo GD, et al. Evaluation of different criteria for the separation of pleural transudates from exudates. Presented at the 1998 European Respiratory Society Annual Congress; Geneve, Switzerland, September 20–24, 1998

Positivity of Pleural Fluid Cytologic Examination in Transudative Pleural Effusions

To the Editor:

Assi and colleagues1 studied the distribution of transudates vs exudates using Light's criteria2 in pathologically proved malignant pleural effusions. The authors found that cytologically positive pleural effusions for malignancy are almost always exudates and concluded that cytologic evaluation of a transudative pleural effusion is not recommended. However, in some cases, the pleural fluid from a malignant pleural effusion is a transude.3 Molynner and colleagues4 reported that 7 of 101 (6.9%) proved malignant effusions were misclassified as transudates using Light's criteria.

We wish to report the results of our study, in which four of 106 (3.8%) patients with positivity of pleural fluid cytologic examination had pleural fluid characteristics of a transudate. We prospectively studied 368 patients with pleural effusions. The patients were divided into various groups on the basis of the final diagnosis, which rested on clinical, radiologic, and laboratory findings5,6: 70 (19%) were transudates (82% heart failure, 18.6% liver cirrhosis); 122 (33.1%) were benign exudates; 161 (43.8%) were malignant exudates; 11 (3%) were paraneoplastic exudates; and 4 (1.1%) were transudates with positivity of pleural fluid cytologic examination. We measured total protein and lactate dehydrogenase with a multichannel analyzer in pleural fluid and in blood, then calculated the pleural fluid/blood ratios.

One hundred and six cytologically proved malignant pleural effusions were identified. There were 204 men and 164 women with a mean age of 65 ± 18 yr (range, 17 to 98 yr). One hundred and six cytologically proved malignant pleural effusions were identified. Fifty-three were lung cancer, 10 mesothelioma, 13 lymphoma, and 13 various types of cancer. Four of 106 patients (3.8%) had a transude with positivity of pleural fluid cytologic examination; one patient had breast adenocarcinoma, one had lung adenocarcinoma, one had undetermined adenocarcinoma, and one had non-Hodgkin's lymphoma. Light's criteria are reported in Table 1.

Our data confirm that a small number of patients with cytologically proved malignant pleural effusions exists, in which pleural fluid show the characteristics of a transudate according to Light's criteria. The mechanism responsible for

Table 1—Light's Criteria of Four Patients With Transudate and Malignancy

<table>
<thead>
<tr>
<th>Patient</th>
<th>Protein Ratio</th>
<th>LDH Ratio</th>
<th>Pleural Fluid LDH (U/L)*</th>
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<tbody>
<tr>
<td>1</td>
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<tr>
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<tr>
<td>4</td>
<td>0.21</td>
<td>0.49</td>
<td>204</td>
</tr>
</tbody>
</table>

*LDH normal range 200 to 450 U/L.