Table 1—Pulmonary Function Data

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>October</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vital capacity (L)</td>
<td>1.36 (37)*</td>
<td>2.26 (60)</td>
<td>3.57 (96)</td>
</tr>
<tr>
<td>Total lung capacity (L)</td>
<td>3.3 (62)</td>
<td>4.07 (76)</td>
<td>5.18 (97)</td>
</tr>
<tr>
<td>Dlco (ml/min/mm Hg)</td>
<td>9.81 (49)</td>
<td>17.53 (67)</td>
<td>19.78 (67)</td>
</tr>
<tr>
<td>Exercise tolerance (kpm)</td>
<td>200</td>
<td>300</td>
<td>1000</td>
</tr>
</tbody>
</table>

*Nos. in parentheses represent percent predicted

Vital and sputum breath alveolar bilateral matosis, sarcoidosis, pulmonary cysts granulomas.

Thus, spontaneous pneumothorax was made, and a chest tube was inserted and the lung expanded. Gram stains and cultures of sputum were negative.

A diagnosis of sarcoidosis was made on the basis of 1) skin and liver biopsies showing noncaseating granulomas; 2) ophthalmologic examination showing anterior uveitis; 3) chest roentgenograms (when lung was expanded) showing bilateral mild hilar lymphadenopathy and fibronodular and alveolar infiltrates; and 4) pulmonary function tests, showing severe restrictive lung disease and marked reduction in single breath pulmonary diffusing capacity and exercise tolerance (Table 1).

Oral prednisone therapy was prescribed and the patient was discharged. Two months later the chest roentgenogram showed improvement in infiltrates. Exercise tolerance tests and pulmonary function tests showed progressive improvement (Table 1).

DISCUSSION

Spontaneous pneumothorax generally results from rupture of blebs related to paraseptal emphysema in those under 40 years of age and from generalized emphysema or bullae in those over 40 years of age. Pneumothorax may occur as a complication of a variety of inflammatory and infiltrative diseases of the lung, such as eosinophilic granuloma, primary or secondary lung neoplasm, lymphangioleiomyomatosis, and radiation pneumonitis.

Pneumothorax occurs in 2 to 4 percent of patients with sarcoidosis, but it is usually observed as a complication of late stage fibrotic and bullous disease. The cause of pneumothorax in the early stage of sarcoidosis is uncertain, but has been attributed to rupture of subpleural cysts or granulomas. We believe that this patient had subpleural cysts or granulomas that ruptured and caused pneumothorax.

Thus, spontaneous pneumothorax can be a presenting pulmonary manifestation of early sarcoidosis.

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REFERENCES

6 Libshitz HI, Banner MP: Spontaneous pneumothorax as a complication of radiation therapy to the thorax. Radiology 112:119-201, 1974

Failure of Disposable Domes

To the Editor:

In the article, "Failure of disposable domes to prevent septicemia acquired from contaminated pressure transducers" (Chest 74: November, 1978), Buxton et al contradict the title and opening statements. In all the tests that were conducted, the results proved conclusively the integrity of the membrane. The problem area is identified in the eight-day surveillance study of the 27 patients. The only patients that were contaminated were from the surgery department thereby eliminating ICU where pressure monitoring is performed with the same disposable domes. Of the four patients that were contaminated, three had contamination at the radial artery stopcock, but not at the dome and the fourth had contamination at the dome but not at the radial artery stopcock. If the E. cloaca had penetrated the membrane, the complete system would have been contaminated. As the radial artery stopcock was being used as a sampling port, the contamination probably caused by direct contact.

The conclusion that the domes failed to prevent contamination is invalid since all of their findings substantiate the dome integrity.

Alan Smart, Bentley Laboratories, Irvine, California

To the Editor:

Mr. Smart's letter raises two important issues. First, do disposable domes prevent septicemia attributable to contamination of arterial pressure monitoring systems? Second, if they do not, what is the mechanism of monitoring-circuit contamination?

Our article, as well as another report indicate that these devices, which we grant are useful, cannot be relied upon to prevent monitoring-circuit contamination or associated septicemia. In the outbreak we reported, Enterobacter septicemia was epidemiologically and microbiologically traced to contaminated patient-monitoring circuits. All of the transducer sensing plates we tested were contaminated with the infecting strain.

Our study did not prove, however, how contamination entered the patient monitoring circuit. There were numerous potential mechanisms for contamination. We could not document a defect in the membrane of the domes in the tests that we conducted, but no domes used on affected patients were available for evaluation; the numbers of domes examined were too small for us to be certain, with high statistical reliability, that the domes were free of defects; and we were unable to duplicate the actual conditions of their use. We agree with Mr. Smart that direct contact with a contaminated object may have played a role. The data suggest, however, that direct contact contamination of the disposable dome was more likely than contamination of the arterial line site. Systematic cultures of transducer sensing plates, fluid in the dome, and arterial lines were obtained from only one system;