Surgical management of pneumothorax in cystic fibrosis

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ABSTRACT Twenty seven adults with cystic fibrosis who had had either a surgical pleurodesis or pleurectomy for the management of pneumothorax were studied. There were no significant differences in postoperative respiratory function, incidence of recurrent pneumothorax, or incidence of major postoperative complications between the two groups.

The natural history of cystic fibrosis is complicated by a high incidence of pneumothorax, which increases with age; this constitutes an important cause of mortality and morbidity.1,5 Pleurodesis or pleurectomy is usually recommended if there is a persistent air leak after seven days' treatment with an intercostal drain or, in the event of a second symptomatic episode, after a short period of antibiotic treatment and intercostal drainage. Thoracotomy is safe even in the presence of severe airways obstruction6,8 but it is not clear whether pleurodesis or pleurectomy constitutes the more satisfactory procedure for these patients.9,10 A review of our patients with cystic fibrosis submitted to surgical management of pneumothorax is presented in an attempt to clarify this issue.

Methods

The case notes of 27 patients with cystic fibrosis who underwent a thoracotomy for either pleurodesis or pleurectomy were reviewed. For comparison of peroperative and postoperative data, patients were grouped according to whether they had a pleurectomy or a pleurodesis.

The following details were abstracted from the case notes: (1) incidence of recurrent ipsilateral pneumothorax; (2) frequency of postoperative complications; (3) preoperative and postoperative respiratory function.

One patient who had had a resection of the right upper lobe at the time of pleurectomy was excluded from analysis. The preoperative data used were those recorded before the onset of the pneumothorax but not longer than a month before surgery.

Results

Of the 27 patients, nine had surgery to both pleural spaces. The mean FEV₁, expressed as a percentage of predicted values was 34% before operation; no patient had a value greater than 50% predicted. Three, six and 12 months after opera-

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<table>
<thead>
<tr>
<th>Outcome in the two groups</th>
<th>Pleurodesis</th>
<th>Pleurectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of patients</td>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td>No of operations</td>
<td>22</td>
<td>14</td>
</tr>
<tr>
<td>FEV₁ (mean % predicted):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before operation</td>
<td>35</td>
<td>33</td>
</tr>
<tr>
<td>After operation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 months</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>6 months</td>
<td>28</td>
<td>29</td>
</tr>
<tr>
<td>12 months</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>Recurrent pneumothorax</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Recurrent pneumothorax requiring intubation or surgery</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Postoperative complications</td>
<td>3 (1*)</td>
<td>1 (1*)</td>
</tr>
<tr>
<td>Days from surgery to discharge (mean)</td>
<td>16</td>
<td>13</td>
</tr>
</tbody>
</table>

*Died.
the lungs from patients who have had previous thoracic surgery. We would currently recommend that a patient with cystic fibrosis with recurrent pneumothoraces who might be a candidate for heart-lung transplantation in the future should be treated with the minimum of intervention. Intercostal tube drainage, chemical pleurodesis, ligation of bullae, or limited surgical pleurodesis should be performed in preference to pleurectomy. When patients are already severely ill, it may be necessary to assess them rapidly for heart-lung transplantation and to try to arrange early transplantation.

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References
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