Two cases of simultaneous right upper and right lower lobectomy for bronchiectasis with preservation of the middle lobe, a combination of pulmonary resection not previously reported, are described.

One of the basic rules that governs pulmonary resection short of pneumonectomy is that the volume of unresected lung must never be so small that it can never fill the pleural space. A middle lobe of normal size cannot, alone, ever be expected to fill the right hemithorax, and circumstances which allow a middle lobe to do so, must be unusual, since no report of right upper and lower lobectomy with preservation of the middle lobe can be found. Two such cases are reported.

**Case Reports**

**Case 1**

An African male child was first seen when one year old. Chest x-ray films taken because of a respiratory infection demonstrated the right upper and lower lobes shrunken tightly against the mediastinum without mediastinal deviation to the right. The bronchoscopic appearances were normal, and, because symptoms were...
minimal, further action was not taken. When the child was three years old, the radiographic appearances were unchanged and bronchography was undertaken. Shrinkage and bronchiectasis of right upper and lower lobes were confirmed, and a middle lobe of large volume containing a large number of bronchi was shown (Fig 1). Right upper and lower lobectomy were undertaken because of continued respiratory symptoms, and the middle lobe filled the pleural space without encouragement. The postoperative course was uneventful. The histologic features of the resected lobe were those of follicular bronchiectasis. A late postoperative x-ray film is shown (Fig 1). Unfortunately, this child has been lost to follow-up, and we are uncertain of his long-term progress.

CASE 2

A nine-year-old African female child underwent investigation because of a large hemoptysis. Radiographically, the upper lobe of normal volume appeared abnormally translucent, and the lower lobe was shrunken against the mediastinum. The bronchoscopic appearances were normal. Bronchographically, bronchiectasis of the lower lobe was shown, and the appearance of the right upper lobe indicated bronchiectasis with bronchiolitis obliterans (Fig 2). Upper and lower lobes were resected, and the middle lobe seemed large enough to fill the right pleural space. Early convalescence was complicated by retention of bronchial mucus, which was dealt with by repeated therapeutic bronchoscopy. She was discharged well on the 20th postoperative day. A follow-up x-ray film taken 18 months after operation showed a satisfactory appearance (Fig 3). At that time pulmonary function testing was undertaken. Forced expiratory volume in one second was 0.9 L, and forced vital capacity was 1.44 L, 52 and 79 percent of predicted values for normal children of similar age.1 Ventilation and perfusion scans showed normal uniform activity on both the left and right sides.

Figure 1. Chest x-ray film 18 months after operation. The middle lobe occupies the right hemithorax, and there is minimal mediastinal shift.

Discussion

It is unusual for bronchiectasis to involve the upper and lower lobes on the right and for the middle lobe to be spared. In a series of well over 3,000 bronchograms, this combination of bronchiectasis was demonstrated in only five patients, two of whom form the basis of this report. We are uncertain of the reason why the middle lobe, a lobe commonly involved in bronchiectasis, is spared, and why this combination of bronchiectasis occurs.

The procedure of right upper and lower lobectomy with preservation of the middle lobe seems more suited to younger patients, because in these patients the middle lobe is more likely to grow and fill the pleural space. The large number of bronchi in the middle lobe in the patient described as case 1 served to confirm that in extreme youth, lung forced to fill a greater than normal volume of hemithorax is able to grow. The ventilation perfusion studies have shown in case 2 that there remains function in the middle lobe rather than serving only the purpose of "packing."

It has thus been shown that in carefully selected circumstances, it is possible to preserve a bronchographically normal middle lobe when the right upper and right lower lobes are bronchiectatic and shrunken, without the complications of a pleural space incompletely filled by lung, with the sequelae of empyema or torsion of the remaining lung.

Reference