BRIEF COMMUNICATIONS

THORACOSCOPIC EVACUATION OF DEAD HYDATID CYST

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Advances in video-assisted thoracoscopic surgery allow investigation and management of a wider range of pleural and pulmonary diseases. After percutaneous cavernostomy, a thoracoscope may be used for removal of foreign material from within an intrapulmonary cavity. A case of a dead hydatid cyst treated by such thoracoscopic evacuation is described. The procedure is simple and effective and is recommended for use when there is a delay in spontaneous resolution.

Case report. A 13-year-old black boy came to his local hospital with a productive cough and a fever. Chest radiography revealed a right pulmonary cavity with a fluid level and a left lower lobe spherical opacity. Percutaneous needle aspiration of the lesion on the right side resulted in empyema. The patient was referred for further management.

At the referral hospital, it was concluded from radiographic examination that the opacity on the left side was an uncomplicated hydatid cyst¹ and the proven right empyema had resulted from aspiration of a hydatid cyst complicated by infection. Tube thoracostomy effectively drained the right pleural space. By means of the Seldinger technique aided by fluoroscopy, the pulmonary cavity on the right side was intubated and drained of pus. The patient's fever subsequently subsided, and his general condition improved. Something resembling the crumpled remains of a dead hydatid cyst within the pulmonary cavity on the right side could be seen on a chest radiograph (Fig. 1). Despite the presence of a bronchocutaneous fistula, as evidenced by the production of purulent sputum and the cavernostomy tube air leak, the residual remnants of this cyst were not evacuated during a 2-week period. The uncomplicated hydatid cyst on the left side was removed through a left thoracotomy, followed by capitonage. The right intrapulmonary tube was removed, and the cavity on the right side was entered thoracoscopically through the cavernostomy track. This allowed inspection of the space and easy removal of the dead hydatid cyst, with the cavity being left clean after suction. Open tube cavernostomy drainage was instituted for a further 2 weeks, by which time there was a satisfactory reduction in the size of the cavity. The tube was removed, and after a further short period of clinical and radiologic surveillance, the patient was dis-

charged. When he was seen 1 month later, the patient was entirely well and his chest radiograph showed satisfactory resolution of the empty cavity.

Discussion. An extraordinary number of management options for pulmonary hydatid disease have been offered, ranging from radical procedures such as lobectomy and pneumonectomy² to the more favoured enucleation technique with capitonage.³ More recently, medical therapy with benzimidazole drugs, such as albendazole,⁴ have been tried. The presence of complications may further dictate the procedure to be considered. Spontaneous rupture of a hydatid cyst may result in complete endobronchial expectoration of the cyst wall and contents. Where endobronchial clearance is incomplete, however, the residual cyst wall should be removed to enable more rapid resolution of the intrapulmonary cavity. This can be done easily if thoracotomy is undertaken for removal of other ipsilateral

Fig. 1. Crumpled remains of ruptured cyst are seen in right pulmonary cavity after percutaneous drainage. Live hydatid cyst is seen in left lung.

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cysts. The establishment of a cavernostomy track followed by thoroscopic removal of the cyst remnants provides a suitable alternative to thoracotomy, especially when the space is infected. Thoroscopic removal of live or uncomplicated hydatid cysts does not afford the advantage of capitonage for control of bronchial air leaks and may lead to spillage and pleural recurrence,⁵ although we have not seen this, and so this procedure was not attempted for the cyst on the left side. It is anticipated that as expertise with and instrumentation for video-assisted thoroscopic surgery continue to improve, such management may be preferred for live hydatid cysts as well.

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VENTILATORY SUPPORT WITH A CUIRASS RESPIRATOR AFTER RESECTION OF BULLOUS EMPHYSEMA: REPORT OF A CASE

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Positive-pressure ventilation (PPV) after operation for emphysema is undesirable because it often yields a persistent air leak. We report a case in which hypercarbia after bullectomy was treated successfully by negative-pressure ventilation (NPV) with a cuirass respirator (Sumitomo Bakelite, Japan).¹

Case report. In June 1995, an 82-year-old man with emphysema was transferred to our hospital for severe dyspnea and unconsciousness. Arterial blood gas measurements showed an oxygen tension of 74 mm Hg, a carbon dioxide tension (Pco₂) of 141 mm Hg, and the chest radiograph revealed left pneumothorax. An endotracheal tube and a chest tube were immediately inserted. The patient was extubated for 1 day after PPV. The computed tomographic scan revealed giant bullae in the left lower lobe (Fig. 1). Because air leakage had been intractable for a month, we performed a left thoracotomy. Air leakage from the bullae was 40% of inspired tidal volume. A 75 mm linear stapler covered by a sheath-shape fabric made from polyglycolic acid (Neoveil; Gunze, Japan) was used for bullectomy three times. Small air leaks at the stapling junctions needed

additional sutures and fibrin glue. After the absence of air leaks was confirmed, the chest was closed. Although reversal of muscle relaxation was accomplished, tidal volume was less than 100 ml. Intermittent manual ventilation failed to decrease Pco₂. Air leakage began in the meantime. We transferred the patient to the recovery room and started NPV with a cuirass respirator.¹ An inspiratory peak pressure of -30 cm H₂O at a rate of 20 breaths/min by the respirator had been applied for 4 hours. Tidal volume increased from 113 to 185 ml. Pco₂ gradually decreased, and the patient became alert. He breathed spontaneously after NPV and was extubated thereafter (Fig. 2). The degree of air leakage did not change during NPV. The patient had been showing a slow but steady recovery; however, right pneumothorax suddenly occurred 3 weeks after operation. Because air leakage was again persistent, right thoracotomy was obligatory 3 weeks later. An air leak from a small bulla of the apex of the lower lobe was closed tightly. Because the patient had been feeling discomfort and vomiting after meals after operation, intravenous hyperalimentation was begun. Although the patient, once more made a slow recovery, he reported general malaise and productive coughs a week later, and Pco₂ then was 86 mm Hg. We began PPV, but the patient died of heart failure 2 days later.

Discussion. The most troublesome complication after operation for emphysema is prolonged air leakage. Cooper and colleagues² pointed out two important points in avoiding this complication. One is making every attempt to completely eliminate air leaks during operation. The other is avoiding excessive stress on the lung surface after operation.² To accomplish the latter point, recovery of

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