STAB WOUND OF BULLOUS CYST

A CAUSE FOR FAILURE OF CONSERVATIVE TREATMENT OF TRAUMATIC PNEUMOTHORAX

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The treatment of traumatic pneumothorax is aspiration of the chest. When repeated aspirations or continuous low-pressure tube suction fail to produce re-expansion of the lung, the diagnosis of a ruptured bronchus becomes likely.

In South Africa stab wounds of the chest are a deplorably common cause of traumatic pneumothoraces. Treatment for these is almost always easy and straightforward. Isolated wounds of bronchi appear to be virtually unknown. Recently a case was encountered which provided an example of another cause for failure of aspiration therapy of a traumatic pneumothorax.

Case History

A 30-year-old man was admitted to hospital after being stabbed in the chest. He was very dyspnoeic. He had 2 one-inch stab wounds between the left scapula and the vertebral column. Physical signs were those of a tension pneumothorax and the X-ray confirmed this, showing almost complete collapse of the left lung, marked displacement of the mediastinum to the right, and some herniation of the left pleural sac into the right hemithorax. A very minor haemothorax was shown. There were also several apical cysts on the right and an appearance that suggested a cyst held up by adhesions on the left. A catheter was inserted into the left second interspace anteriorly, with release of a large amount of air. However, there was a continuous air leak, and despite high-volume suction the left lung did not expand (Fig. 1).

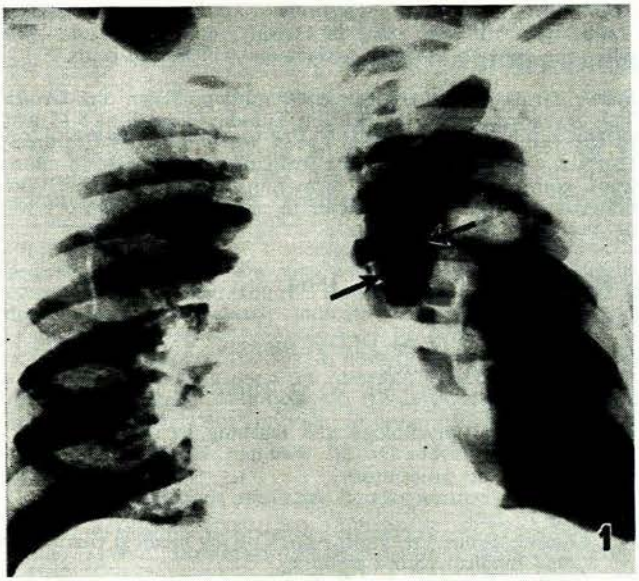

Fig. 1. Postero-anterior roentgenogram. The arrows point to the wall of the biggest cyst. The right-hand arrow overlies the balloon of a Foley catheter inserted through the second left interspace. Below this is the collapsed lung.

Bronchoscopy showed neither a laceration of a bronchus nor any bronchial obstruction. The patient became febrile, but after 2 weeks of antibiotics and chest drainage the temperature finally returned to normal and a thoracotomy was performed. The left upper lobe was found to be largely replaced by cysts. The largest cyst, 7·0 cm. in diameter, had a one-inch laceration on its pleural surface and a small segmental or subsegmental bronchus opening into it. Because the greater part of the upper lobe was cystic, a lobectomy was performed. The virtually normal lower lobe filled the space well. Histology of the cysts showed columnar-lined cystic spaces surrounded by vascular connective tissue and granulation tissue. There was no evidence of tuberculosis and the aetiology of the lesions was uncertain. The patient recovered well from his operation and 2 months later was doing manual labour without dyspnoea.

Discussion

There is an increasing literature on bronchopleural fistula following thoracic trauma. Most reports concern cases of partial or complete bronchial rupture following blunt trauma to the chest.[1] No report has been found of a case similar to this one. The X-rays taken on admission suggested the diagnosis. Furthermore it seemed most unlikely that a direct stab of the bronchus would be possible from behind without also cutting the pulmonary artery, and there was no evidence of this having happened.

Although it was expected that an operation would be necessary, since this situation had not been encountered before, a period of chest drainage with and without high-volume suction was tried but without success.

Summary

A case is presented in which a stab wound of the chest involved a bullous cyst and resulted in a bronchopleural fistula. This failed to respond to conservative treatment.

While the usual cause of failure of conservative treatment of pneumothorax after thoracic trauma is a ruptured bronchus, an additional mechanism is illustrated by this case.

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REFERENCE

1. Sörensen, H. R. (1960): Acta. chir. scand., **119**, 346.