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CASE REPORT

Spontaneous haemopneumothorax: a rare clinical entity

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Spontaneous haemopneumothorax: a rare clinical entity. P. Baas, J. Stam.
ABSTRACT: A 39 yr old man presented with a spontaneous pneumothorax. On initial pleural drainage 120 ml of haemorrhagic fluid were collected. Twenty four hours, after re-expansion of the lung, shock developed and 1,200 ml of haemorrhagic fluid were spontaneously collected. The diagnosis haemopneumothorax was considered and at operation a bleeding vessel, which originated from the parietal pleura, was located and coagulated.

The occurrence of an air fluid line at radiological examination, the development of a haemorrhagic pleural effusion and shock should alert the physician of this entity.

This case stresses the importance of early recognition and surgical intervention because of the possible lethal evolution.
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Case report

In contrast to the traumatic form of haemopneumothorax, the spontaneous form is a rare entity. We report a case in which the importance of early recognition is obvious.

Patient

A 39 yr old man presented with acute right-sided chest pain and shortness of breath of sudden onset. There was no medical history of trauma or use of medication. No chronic obstructive airway disease or abnormal bleeding tendency was known.

On physical examination the patient was dyspnoeic and on the right side hyperresonant percussion note and reduced breath sounds suggested a right-sided pneumothorax. There were no further abnormalities at clinical examination, electrocardiogram, full blood count, haemoglobin and biochemistry.

Chest X-ray confirmed a spontaneous pneumothorax (fig 1). A small fluid level was noted on the right side, with a transmediastinal right-to-left pleural hernia and a shift of the mediastinum to the left, suggesting a tension pneumothorax. A right-sided chest tube was inserted with a suction of 10 cmH_2O. During initial drainage 120 ml of haemorrhagic fluid were collected. The control chest X-ray showed complete re-expansion of the lung and a hazy opacification on the right side (fig. 2). Twenty four hours later shock developed, whilst 1,200 ml of haemorrhagic fluid were collected in a short period. Due to clotting of the blood in the collecting chamber no determination of the haemoglobin concentration in the pleural fluid could be performed. The blood haemoglobin fell from 8.9 to 6.5 $mmol \cdot l^{-1}$.

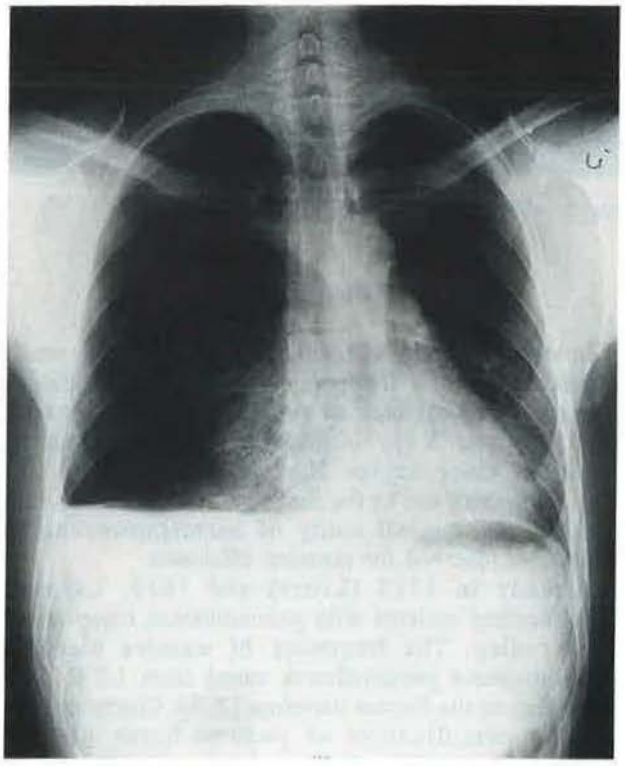

Fig. 1. – Chest X-ray on admittance.

The diagnosis of haemopneumothorax was considered and, after treatment of the shock, a right-sided thoracotomy was performed. After removal of 2,700 ml of clotted blood, the remnants of a ruptured, continuously bleeding vessel in the lung apex were found. The vessel was located in the lung apex

and originated from the parietal pleural side. The vessel was coagulated and a bullectomy was performed at the upper lobe. Histological examination showed only a bullous structure without any typical arterial malformations. Bacteriological examination appeared normal. The postoperative period was uncomplicated.

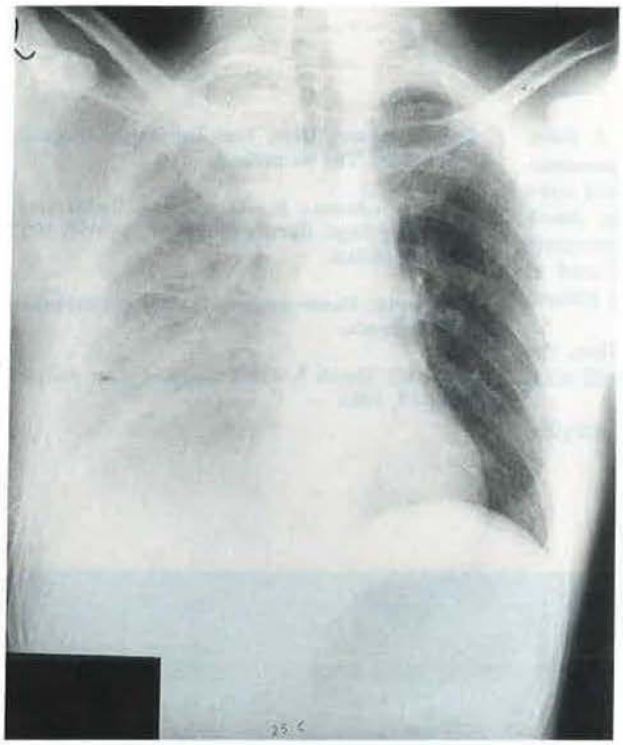

Fig. 2. – Chest X-ray after re-expansion of the lung.

Discussion

In case of a spontaneous pneumothorax a small pleural effusion is frequently seen and can be blood-stained. To reveal such an air-fluid line it is important that the chest X-ray is made in sitting or standing position, since supine X-ray would obscure this sign. This mark can be the first sign of a haemopneumothorax. The clinical entity of haemopneumothorax should be reserved for massive effusions.

Already in 1713 (Littre) and 1819, LAENNEC [1] described patients with pneumothorax complicated by bleeding. The frequency of massive bleeding in spontaneous pneumothorax varies from 1.2 to 12% according to the former literature [2, 3]. Characteristics of this complication of pneumothorax are the findings of massive effusion, shock, anaemia and an air-fluid line. By inserting a chest tube haemorrhagic fluid is drained. The complication is usually due to persistent bleeding after rupture of a pleural adhesion in which a small, non-contractible vessel is situated. Less frequently the bleeding originates from a well vascularized ruptured bulla [3, 4]. The initial bleeding can stop spontaneously or temporarily when a tension pneumothorax develops and the vessel is compressed. Since, in most cases, the vessel originates from the intercostal arteries the bleeding is sustained by the high systemic blood pressure. In a number of cases no site of bleeding is observed at all [5].

The treatment of spontaneous haemopneumothorax can be conservative or operative. If treated conservatively the introduction of a second chest tube may be necessary, if the first one is obturated. Conservative treatment can also result in the formation of a pleural thickening with a restrictive lung function that may later require decortication [5–7].

In case of high initial blood loss or recurrence of bleeding and shock, thoracotomy is mandatory.

The mortality rate of the haemopneumothorax was up to 14% in 1956 [4], and death occurs mainly during the first 48 h. Therefore, early recognition of this complication is important and close monitoring of a patient with pneumothorax is necessary.

We advise early surgical intervention in a case of haemopneumothorax, because of the possible life-threatening evolution and need for vessel occlusion or lung resection as illustrated in this case.

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RÉSUMÉ: Observation d'un hémopneumothorax spontané avec description detaillée des aspects histopathologiques, du décours et du traitement.

Afin d'éviter une évolution fatale éventuelle, il est important de procéder à temps aux examens cliniques et radiologiques. Nous recommandons une intervention chirurgicale précoce en cas d'hémorragie massive. Ce rapport souligne l'importance d'un diagnostic précoce de cette entité clinique rare.
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