

MASSIVE HAEMOTHORAX AS A COMPLICATION OF PRIMARY LUNG CANCER – A CASE REPORT

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ABSTRACT

A 58-year-old man was admitted with a massive haemothorax. At thoracotomy, the cause was found to be due to a bleeding primary lung cancer, the cell type of which was adenocarcinoma. A literature search revealed that this complication of lung cancer has not previously been described. Reasons as to the infrequency of this complication are discussed.

Keywords: massive haemothorax, lung cancer, adenocarcinoma

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INTRODUCTION

Bronchogenic carcinoma is a very common condition. We are all very familiar with its intrathoracic and extrathoracic clinical and radiographic presentations, that are due to the local enlargement of the tumour mass, regional and distant metastases, and direct spread to adjacent structures. Non-metastatic paraneoplastic manifestations of lung cancer are also not an infrequent feature. In this case report, we describe a very unusual presentation with massive life threatening haemothorax.

CASE REPORT

A 58-year-old man was admitted to Alexandra Hospital with a 3-day history of progressive breathlessness. There was no history of hypertension, cardiac disease, tuberculosis, asthma or chronic obstructive pulmonary disease. There was no history of chest trauma. He was a non-smoker.

On examination, he was breathless. The pulse was 150/min. The blood pressure was 130/100 mmHg. There were signs of a large left-sided pleural effusion with shift of the mediastinum to the right. There was no finger clubbing.

His condition rapidly deteriorated and he had to be ventilated promptly. The chest X-ray confirmed the presence of a massive left pleural effusion (Fig 1).

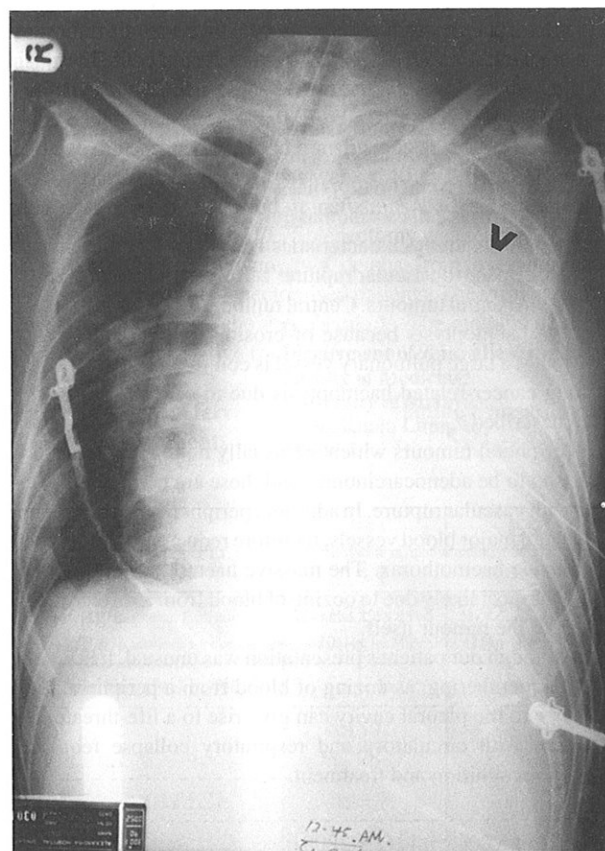
A chest aspiration was carried out. Frank blood was obtained which clotted after being allowed to stand. An intercostal chest tube drain was inserted. Drainage of up to a total of 2 litres of blood was obtained. Meanwhile, the patient was resuscitated with infusions of whole blood and plasma.

As there was no sign of cessation of bleeding, an emergency thoracotomy was carried out. Up to 4 litres of blood with clots were found in the pleural cavity. A tumour was seen in the apical segment of the left lower lobe which was actively bleeding. A wedge excision biopsy of the tumour was taken, and haemostasis was secured. Evacuation of the clots was carried out.

The next day, the patient had a cardiac arrest and could not be revived.

The histology of the tumour was that of a moderately differentiated adenocarcinoma of the lung.

**Fig 1 – Massive left haemothorax.
Note erosion of the left 4th rib**



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DISCUSSION

Lung cancer is presently the leading cause of cancer-related deaths in men in developed countries. It is also quickly overtaking cancer of the breast as the leading cause of cancer-related deaths in women.

The different ways through which lung cancer can manifest itself are legion. Involvement of the pleura is a common occurrence and the resulting pleural effusion is often blood-stained. Rarely, spontaneous pneumothorax has been described in the advanced stage of bronchogenic carcinoma⁽¹⁻³⁾.

However, massive haemothorax as a complication of primary lung cancer has hitherto never been reported.

Haemothorax most commonly arises in the setting of penetrating and non-penetrating chest trauma. Occasionally, iatrogenic procedures such as percutaneous placement of central

venous catheters in the subclavian or internal jugular veins or translumbar aortography produce a haemothorax. De France⁽⁴⁾ reported 2 cases of non-traumatic massive haemothorax: one case of haemorrhage from a metastatic trophoblastic tumour in the lung, and another case from a ruptured splenic aneurysm that had eroded through the left hemidiaphragm. Wang YT⁽⁵⁾ reported a case of locally invasive hepatic angiosarcoma in which the clinical course was dominated by a massive haemothorax.

Our patient had a massive haemothorax which required thoracotomy to control the bleeding. In most cases of haemothorax secondary to chest injuries, chest tube drainage is sufficient to control the bleeding. Apposition of the pleural surfaces creates a tamponade. Thoracotomy is rarely required for haemostasis. In our patient, the cause of the haemothorax was a primary lung cancer detected at thoracotomy to arrest the haemorrhage.

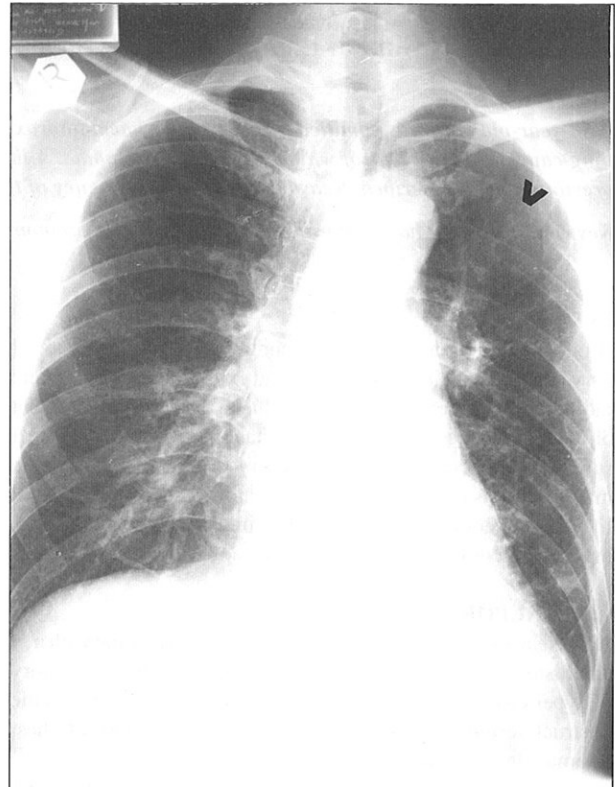
We were able to trace a chest X-ray done six months previously at another hospital (Fig 2). The diagnosis of carcinoma could have been made at that time. There was marked erosion of the left 4th rib. No mass lesion could be seen on the PA film, but it is notoriously easy to miss a lesion in the apical segment of the lower lobe without a lateral chest X-ray.

Bleeding from lung cancer usually presents as a haemoptysis, and massive terminal haemoptysis, although not common, is occasionally seen. Why is massive haemothorax due to bleeding from a lung cancer not seen as often? There may be several reasons for this. Statistically, massive haemoptysis usually occurs in squamous cell carcinomas⁽⁶⁾. It has been previously noted that certain inherent characteristics of epidermoid carcinomas may predispose to vascular rupture⁽⁷⁾. Most squamous cell carcinomas are central tumours. Central tumours may also give rise to massive haemoptysis because of erosion into central vessels. Erosion of a large pulmonary vessel is common, and even a case of lung cancer-related haemoptysis due to cardiac rupture has been described⁽⁶⁾.

Peripheral tumours which are usually not of squamous origin, tend to be adenocarcinomas and these are not often associated with vascular rupture. In addition, peripheral tumours do not erode into major blood vessels, therefore reducing the likelihood of massive haemothorax. The massive haemothorax in our patient was most likely due to oozing of blood from a surface blood vessel of the tumour itself.

Although our patient's presentation was unusual, it is worthwhile remembering, as oozing of blood from a peripheral lung cancer into the pleural cavity can give rise to a life-threatening situation with circulatory and respiratory collapse requiring prompt recognition and treatment.

Fig 2 – Chest X ray done 6 months previously showing erosion of 4th left rib



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