Spontaneous pneumothorax due to metastatic carcinoma of the rectum

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Spontaneous pneumothorax is a rare complication of both primary and secondary malignant tumours of the lung. We report the first case caused by metastatic carcinoma of the rectum.

Case report

A 59 year old man presented with left sided chest pain of sudden onset. He gave a six month history of dry cough with one episode of haemoptysis. Ten years previously he had undergone an abdominoperineal resection for a Duke's C adenocarcinoma of the rectum. A spontaneous pneumothorax was diagnosed and confirmed by a chest radiograph which also suggested a left hilar abnormality (figure).

The pneumothorax was managed by intercostal chest drainage but the lung failed to re-expand. Bronchoscopy showed a tumour in the left main bronchus close to its bifurcation. Biopsy of this lesion revealed a poorly differentiated adenocarcinoma. Other investigations showed no contraindication to resection.

At operation the left lung was found to be totally collapsed with a 4 × 5 cm tumour in the lower lobe, infiltrating close to the visceral pleura at the base. As the tumour extended

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Penetrated posteroanterior chest radiograph showing a left pneumothorax.

proximally to affect the upper lobe, a left pneumonectomy was performed. Microscopic examination of the specimen showed a poorly differentiated adenocarcinoma, consistent with a metastasis from the rectal carcinoma.

There were no postoperative complications and the patient was alive and well two years after resection.

Discussion

Spontaneous pneumothorax associated with secondary neoplasia in the lung is uncommon and carries a poor prognosis. In the present case the pneumothorax was probably caused by breakdown of the tumour directly into the pleural space. Where possible surgery, which offers the only hope of long term survival, should be undertaken.

Spontaneous pneumothorax may be caused by primary or secondary neoplasia in the lung. Of all metastatic tumours osteogenic sarcoma has been reported to cause pneumothorax most frequently. Others include Wilm's tumour, Ewing's tumour,¹ melanoma,² and endometrial adenocarcinoma.³

Many of these patients belong to an age group in which underlying lung disease, such as chronic bronchitis and emphysema, are common. A tumour may partially obstruct the lumen of a bronchus, exerting a flap valve effect, to cause further emphysematous lung changes and bullae formation distal to the obstruction. Compensatory emphysema and bullous changes may also occur adjacent to a collapsed segment of the lung, a result of complete occlusion of bronchial lumen by the tumour. Rupture of a bulla, spontaneously or by sudden increase of intrabronchial pressure as in coughing or sneezing, will produce a spontaneous pneumothorax. Rarely, a peripheral necrotic tumour may rupture directly into the pleural space, creating a bronchopleural fistula and spontaneous pneumothorax.

The prognosis of these patients has been poor. Generally they are managed by intercostal drainage, and only a few with primary neoplasia are suitable for resection. For those treated conservatively life expectancy has ranged from a few days to a few months.⁴ The present case appears to be the first reported case of lung metastasis from a rectal tumour presenting as a spontaneous pneumothorax, with successful treatment by resection.

References

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