

Subcutaneous Emphysema Secondary to a Malignant Bronchocutaneous Fistula

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A bronchopleural fistula (BPF) is a rare development of a communication between the pleural space and the bronchial tree¹. Most are due to postoperative complications of lung resection surgery. Most of the rest are due to lung necrosis from infective problems, chemotherapy or radiotherapy for lung cancer and tuberculosis. A bronchocutaneous fistula (BCF) is a bronchopleural fistula (BPF) that extends into the chest wall. Most are complications of thoracic surgery for infective chest/lung problems or as a result of chest trauma. Occasionally these fistulae have been shown to be due to underlying lung malignancies that have been treated with radiotherapy.

Case Report

A 76 year old lady presented with dyspnoea, cough and weight loss. Physical examination revealed a right sided chest dullness and bilateral basal crackles. There was no lymphadenopathy or bony tenderness. A chest x-ray showed bilateral pleural effusions and scattered patchy infiltrates. CT scan of the thorax showed a 5cm cavitating lesion in the apical segment of the right upper lobe (fig 1).

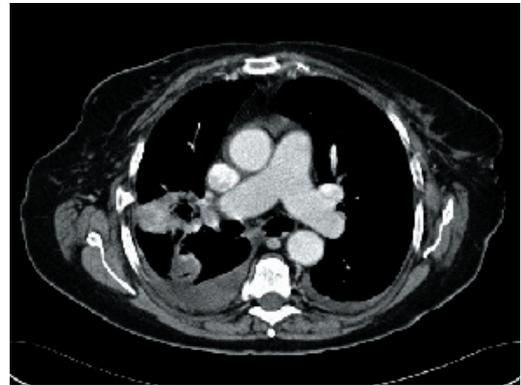


fig. 1

The scan also showed multiple pulmonary and hepatic metastases, and an 8cm cystic mass replacing the right kidney with associated compression of the inferior vena cava. A transbronchial biopsy showed a poorly differentiated squamous cell carcinoma. A multidisciplinary lung cancer meeting decided against chemotherapy or radiotherapy, and the patient was referred for palliative care.

One month after diagnosis the patient presented with extensive swelling of her face, neck and chest wall due to surgical emphysema. The chest x-ray showed extensive surgical emphysema of the neck and right thoracic soft tissues as well as in the mediastinum. A mass in the right upper lobe was also seen. A new CT scan showed a large cavitating thick-walled mass with a fistula communicating with the adjacent subcutaneous tissues (fig 2).



fig. 2

Massive surgical emphysema was seen extending from the root of the neck down to the abdomen, as well some air in the mediastinum. These findings are indicative of the development of a BCF.

A Medline search of the literature revealed no other cases of a bronchocutaneous fistula due to a lung cancer that had not been treated with either chemotherapy or radiotherapy. BPF's have been reported variously to occur post pneumonectomy^{1,2,3}, post trauma or post infective conditions, especially empyema. Rarely they are complicated and extend into the chest wall as BCF. BCF are much less common and likewise are related to previous surgery or infection. They have rarely been reported as secondary to radiotherapy for breast cancer⁴ or for primary carcinoma of the lung⁵.

Discussion

We report what appears to be the first case of BCF developing from a primary lung cancer where the patient had not received either chemotherapy or radiotherapy.

Summary

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