Primary malignant melanoma of the bronchus

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Abstract
A rare case of primary malignant melanoma of the bronchus is described. Before considering this diagnosis, metastasis from an occult primary must be convincingly excluded and the tumour should conform to certain guidelines. This patient presented with a solitary lung tumour for which she underwent left lower lobectomy and continues to be tumour free 54 months after surgery. Two possible mechanisms of aetiology are suggested.

Keywords: bronchus, malignant melanoma.

Malignant melanoma involving the respiratory tract is nearly always metastatic in origin and true primary tumours are very rare.\(^1\) When strict guidelines are applied to reported cases in the literature many do not display sufficient convincing evidence and can be excluded. We therefore wish to present this rare case which we believe satisfies the necessary criteria, and to outline guidelines to be considered before making this unusual diagnosis.

Case report
A 66 year old woman was referred to the Regional Cardiothoracic Centre with a 10 month history of cough and haemoptysis. She was an ex-smoker having smoked 40 cigarettes per day between the ages of 16 and 55 years. Respiratory examination revealed poor air entry in the left base and chest radiography demonstrated collapse and consolidation of the left lower lobe. Bronchoscopy revealed a polypoid endobronchial tumour at the origin of the left lower lobe bronchus which was not obviously pigmented. Biopsy samples showed it to be a malignant tumour and she subsequently underwent left lower lobectomy one week later. At operation the left lower lobe was collapsed and replaced by a tumour which was also loosely adherent to the diaphragm although not infiltrating it. The hilar, subcarinal, and subaortic lymph nodes were enlarged. Postoperatively the patient made a good recovery. Extensive examination of the skin, eyes, anorectal region, genitourinary tract, and oesophagus failed to reveal occult primary lesions.

PATHOLOGICAL EXAMINATION
The resected left lower lobe was inflated with formalin with some difficulty due to the obstructive tumour. Sectioning revealed a solitary irregular friable tumour 6 cm in greatest dimension within the superior segment, occluding the segmental bronchus and infiltrating the lobar bronchus. The cut surface was nodular and dark brown in colour with areas of haemorrhage and necrosis.

The bronchial resection margin was macroscopically free from tumour and the pleural surfaces were not involved.

Microscopic examination of the tumour showed that it was composed of large round cells and spindle cells arranged in closely packed sheets and islands. Most of the cells had vesicular nuclei with large central eosinophilic nucleoli and occasional mitotic figures were present. Large amounts of fine granular pigment were present within the tumour cells and macrophages (figure). Histochemical staining of this pigment showed a negative Prussian blue reaction. The pigment had a granular black appearance with the Masson–Fontana stain which was subsequently removed by bleaching indicating that this pigment was melanin. Immunohistochemical staining of the tumour cells showed that they expressed the S100 antigen but did not show expression of cytokeratins. The morphological appearances, histochemical, and immunohistochemical reactions of the tumour were those of a malignant melanoma. Examination of bronchial epithelium adjacent to the tumour showed areas of junctional activity in which nests of cells with large vesicular nuclei and eosinophilic nucleoli similar to the tumour cells were present above the basement membrane of intact bronchial epithelium. The melanocytic nature of these cells was confirmed by S100 staining which also revealed more of these cells showing upward migration through the bronchial epithelium and also lateral spread along the basement membrane. There was no lymph node involvement.

Discussion
True malignant melanoma of the bronchus is very rare and metastasis from the more common primary sources must be convincingly

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Microscopic section of tumour cells showing vesicular nuclei with large central nucleoli. Some also contain granular brown pigment. Stain: haematoxylin and eosin; original magnification × 840 reduced to 59% in origination.
Respiratory failure due to tracheobronchomalacia

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Abstract
A case is described of tracheobronchomalacia progressing to extensive tracheomalacia, complicated by episodic choking, recurrent pulmonary infections, and irreversible hypercapnic respiratory failure. A Y-shaped tracheobronchial stent was placed endoscopically to splint the trachea open, with excellent clinical and physiological improvement. New stent designs may provide long-term palliation in selected cases of diffuse tracheal collapse or stenosis, and offer an alternative to surgical repair.

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Keywords: tracheobronchomalacia, tracheobronchial stent, respiratory failure.

Tracheomalacia is a condition caused by weakness of the tracheal wall due to softening of the supporting cartilages. Initially it causes dynamic collapse during forced expiration and cough, which can be prevented by continuous positive airway pressure (CPAP). In the most severe cases the trachea becomes distorted and permanently narrowed.

Case report
A 52 year old man was diagnosed as having tracheobronchomalacia in 1982. In 1983 he received prolonged assisted ventilation for acute respiratory failure from bilateral bronchopneumonia. Fiberoptic bronchoscopy showed expiratory collapse of an enlarged trachea during spontaneous breathing, but the patency was maintained with a CPAP of 10 cm H₂O. Between 1984 and 1986 he had three further episodes of acute respiratory failure necessitating mechanical ventilation. Between 1987 and 1990 the patient practised postural drainage twice daily and his condition remained stable.

In 1991 he developed difficulty in eliminating secretions despite postural drainage and he