An unusual bronchial obstruction in a fit young man

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SUMMARY

We describe the case of a previously well young man who presented acutely to hospital with a history of progressive chest symptoms and systemic upset. At admission, clinical evidence of left upper lobe collapse on respiratory examination and chest x-ray gave rise to significant clinical concern. Initial assessment by CT suggested a possible aspirated foreign body in the left upper lobe bronchus with distal left upper lobe collapse. Subsequent rigid bronchoscopy identified a solid abnormality totally occluding the left upper lobe bronchus, which did not appear to be a foreign body. The patient became progressively more unwell with clinical signs of chest sepsis and failed to settle with medical therapy. A decision was made to undertake a lobectomy to remove the collapsed lobe and obstructing endobronchial lesion. Histology confirmed that the cause of bronchial obstruction was a mesenchymoma (pulmonary hamartoma).

BACKGROUND

The differential diagnosis for causes of lobar collapse is wide and potentially includes malignancy.^{1 2} The likelihood of specific causes varies with age.² While bronchogenic malignancy is less likely, any young patient presenting with clinical evidence of lobar collapse should still raise concern as to the cause. In a previously well young patient, a haematological malignancy, such as lymphoma, or an aspirated foreign body with subsequent obstruction and collapse, should be considered as potential causes for lobar collapse.² Our case study highlights, that it is also important to consider the less likely differentials when presented with such a case. It also illustrates how a benign pathology can give rise to significant complications that may ultimately require extensive therapeutic intervention.

CASE PRESENTATION

A 31-year-old previously well man, presented acutely to the hospital with a 6-week history of dry cough, sweats, left-sided chest pain, lethargy and 7 kg weight loss. He had no significant medical or family history and did not take regular medication. The patient worked in the construction industry but denied occupational dust exposure. He was an ex-smoker of tobacco and cannabis. The patient was of mixed ethnic origin, with a Caucasian father and a UK-born Chinese mother, and had travelled extensively. There was no previous exposure to tuberculosis, and the patient had received BCG vaccination.

At admission, the patient had no fever or lymphadenopathy. Chest examination demonstrated bronchial breathing and reduced breath sounds in the left upper zone.

Initial full blood count, renal and liver function tests were normal. C Reactive Protein (CRP) was raised at 37 mg/l. Quantiferon Gold (Celestis) was negative. Chest radiograph demonstrated left upper lobe collapse (figure 1). Chest CT identified obstruction of the left upper lobe bronchus by a solid mass (figure 2). Its appearance was unusual and was reported by the radiologist as looking suspicious for an aspirated foreign body such as a tooth. There was no history of dental trauma. Rigid bronchoscopy was therefore arranged. This showed a normal left main bronchus. The origin of the left upper lobe bronchus was completely occluded by a solid area consistent with granulation tissue which on attempted biopsy was thought to overlie submucosal calcification. It was not possible to relieve the obstruction bronchoscopically. These bronchoscopic appearances were thought consistent with a calcified post-tuberculous node compressing the bronchial tree (Brock's syndrome) rather than a foreign body.

Subsequently, the patient became increasingly unwell with worsening cough, fever and rising inflammatory markers (white cell count $18.1 \times 10^9/l$, CRP 236 mg/l). Presumed infection from the collapsed left upper lobe was diagnosed and intravenous antibiotics were started. The patient failed to improve significantly. In the presence of what was likely to have been a chronically collapsed and infected upper lobe, with underlying endobronchial obstruction, an upper lobectomy was felt necessary. At operation, a grossly bronchiectatic left upper lobe was demonstrated. The hard mass obstructing the left upper lobe had eroded into the lower lobe bronchus and completely obstructed the upper lobe bronchus. A left upper lobectomy with repair of the lower lobe bronchus was performed. Histological analysis of the mass showed a mesenchymoma (pulmonary hamartoma).

DIFFERENTIAL DIAGNOSIS

- ▶ Haematological malignancy (eg, Lymphoma)
- ▶ Aspirated foreign body
- ▶ Brock's syndrome (bronchial obstruction caused by post-tuberculous calcified lymph node)

OUTCOME AND FOLLOW-UP

Postoperatively the patient made a full recovery and returned to a very physically active lifestyle within 2 months.

DISCUSSION

Pulmonary mesenchymoma (hamartoma) represents the commonest form of benign lung tumour with an incidence of 0.025–0.32%.³ The vast majority of mesenchymomas are parenchymal with only between 1 and 20% being endobronchial.^{4–7} Endobronchial mesenchymomas are most likely to

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Figure 1 Chest radiograph demonstrating left upper lobe collapse.

be associated with symptoms such as cough, dyspnoea and haemoptysis, resulting from respiratory infection or obstructive pneumonia⁸ as encountered with our patient. Common radiographical findings include alveolar opacities and/or atelectasis.³

Figure 2 Chest CT showing mass obstructing the left upper lobe bronchus.

CT scan may reveal an endobronchial mass accompanied by obstructive pneumonia and lobar collapse, as in this case. Coarse calcification or fat within the mass may be useful for differentiating an endobronchial mesenchymoma from a bronchogenic carcinoma.³ Although a benign condition, treatment of endobronchial mesenchymoma is recommended as these tumours may result in significant complication including chronic bronchial obstruction or haemorrhage. Endoscopic techniques can be successful^{9–10} but in more difficult cases such as the present one, thoracotomy and lobectomy may be required.¹¹ Prognosis following resection is usually excellent.^{3–11}

Learning points

- ▶ Lobar collapse should always raise clinical concern and be appropriately investigated.
- ▶ Consider endobronchial mesenchymoma in the differential diagnosis of bronchial obstruction.
- ▶ Endobronchial mesenchymoma, though a benign condition, can give rise to significant complications.
- ▶ Surgical resection of endobronchial mesenchymoma can provide an excellent outcome.

Competing interests None.

Patient consent Obtained.

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