

# Images in *Thorax*

## Selective pulmonary fat aspiration complicating oesophageal achalasia

A 53 year old woman was referred with an 18 month history of dry cough and exertional breathlessness. There was a past history of oesophageal achalasia. Examination revealed fine right sided inspiratory crepitations only, and pulmonary function tests showed a restrictive defect with a transfer factor of 59% predicted. A chest CT scan showed extensive bilateral ground glass opacification with interlobular septal thickening (fig 1). A markedly dilated oesophagus was also seen, within which the retained food had separated from the fluid which was of low attenuation, in keeping with fat. Bronchoalveolar lavage (BAL) produced an orange fluid that separated into oil and aqueous layers. Oil red O staining of transbronchial biopsy specimens revealed fat droplets within alveolar macrophages (fig 2). A barium swallow showed a dilated oesophagus with a narrowed gastro-oesophageal junction.

A diagnosis of pulmonary fat aspiration from the fat pool overlying the food debris in the oesophagus was made. Dilatation of the gastro-oesophageal junction resulted in progressive complete resolution of the symptoms and radiographic change.

Achalasia is a recognised cause of aspiration pneumonia. The histology of the transbronchial biopsy specimen confirmed the diagnosis,<sup>1</sup> with fat also evident on inspection of the BAL fluid. The CT appearance of ground glass change with superimposed interlobular septal thickening ("crazy paving" appearance) has been reported in lipoid pneumonia.<sup>2</sup> The aetiological mechanism was evident from the separation of fat from the other food debris in the oesophagus, which then spilled over into the lungs. This was confirmed by



**Figure 1** Chest CT scan showing bilateral ground glass appearance with interlobular septal thickening.

### Learning points

- A carefully taken history may reveal the cause of the interstitial lung disease.
- A wide differential diagnosis of the CT appearance of ground glass exists and may be caused by something as common as aspiration.

resolution of the patient's symptoms and radiographic change by treatment of the achalasia alone.

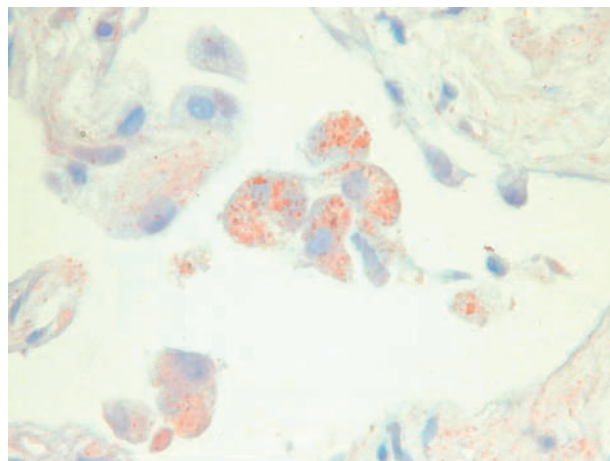
**G V Robinson, H Kanji, R J O Davies**  
Oxford Centre for Respiratory Medicine, Churchill Hospital,  
Oxford OX3 7LJ, UK

**F V Gleeson**  
Department of Radiology, Churchill Hospital, Oxford OX3 7LJ, UK

Correspondence to: Dr G V Robinson, Oxford Centre for Respiratory Medicine, Churchill Hospital, Oxford OX3 7LJ, UK; gracevrobins@yaho.co.uk

### REFERENCES

- 1 Laurent F, Philippe JC, Vergier B, *et al*. Exogenous lipid pneumonia: HRCT, MR and pathologic findings. *Eur Radiol* 1999;9:1190-6.
- 2 Franquet T, Gimenez A, Bordes R, *et al*. The crazy-paving pattern in exogenous lipoid pneumonia: CT-pathologic correlation. *AJR Am J Roentgenol* 1998;170:315-7.



**Figure 2** Transbronchial biopsy specimen (oil red O stain) showing fat droplets within alveolar macrophages.