Clinical picture

Unexpected restriction

A 43-year-old man with known atopic asthma presented with a 3-month history of increasing dyspnoea and slight deterioration in his asthma control. There was no other significant past medical history and he had no sputum production. Physical examination revealed a body mass index of 24, with signs consistent with mild asthma and no other added sounds in the chest. He was noted to have an unexpected restrictive ventilatory lung defect on his spirometry with small airway obstruction and mildly reduced gas transfer.

Chest radiography (CXR) was unchanged from a previous film 4 years ago and was reported as normal but the right hilum was poorly visualized due to being pulled down, suggesting right lower lobe volume loss (Figure 1). High resolution computed tomography (HRCT) revealed significant bronchiectasis in the right lower lobe with destruction and volume loss accounting for the right hilar shift downwards and restrictive lung physiology, most obviously seen on the coronal views (Figure 2).

On further enquiry, the patient did not report any significant previous infective episodes or symptoms of bronchiectasis. It is speculated he previously incurred a significant respiratory infection causing residual bronchiectasis and destruction to his right lower lobe, despite his failure to recall this.

Key point

Volume loss and downward displacement of the right hilum is an important sign on the chest radiograph. HRCT can often provide diagnostic information in this setting and in the explanation of unexplained restrictive ventilatory defects.

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Figure 1. Chest radiograph (CXR) showing indistinct right hilum due to being pulled down suggesting right lower lobe volume loss.

Figure 2. Reformatted coronal HRCT image showing total long standing collapse of the right lower lobe, seen as a band of opacification in the right paracardiac region with bronchiectasis and loss of normal parenchyma. The right lower zone now occupied by the middle lobe.