

# Rounded atelectasis mimicking a lung cancer

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**ABSTRACT** This short report illustrates a case of a 70-year-old ex-smoker who worked with asbestos presenting with an abnormal chest x-ray suspicious for lung cancer on initial appearance. However, subsequent investigations confirmed RA, a well recognised pleural condition associated with asbestos. The historical background of RA, its pathogenesis and imaging characteristics are reviewed. Rounded atelectasis remains an important differential diagnosis to consider in asbestos-exposed individuals with an abnormal chest x-ray. Correct diagnosis has important implications for management and avoidance of unnecessary surgical staging and treatment for presumed lung cancer.

**KEYWORDS** Asbestos, Blesovsky's syndrome, lung cancer, pleural disease, rounded atelectasis

**LIST OF ABBREVIATIONS** Computerised tomography (CT), rounded atelectasis (RA)

**DECLARATION OF INTERESTS** No conflict of interests declared.

## INTRODUCTION

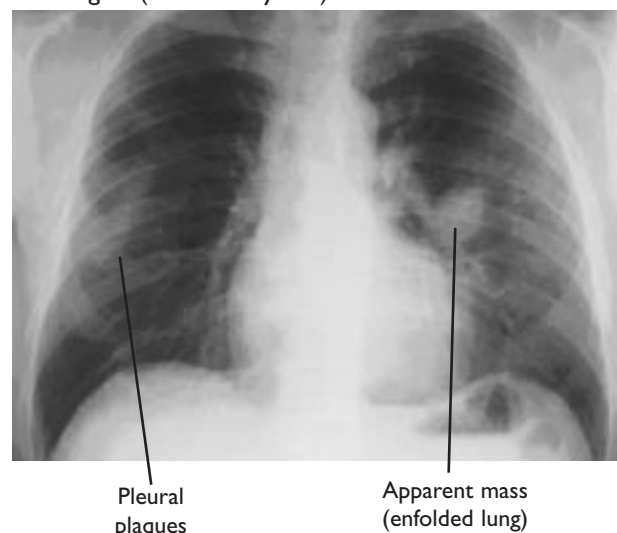
The incidence of asbestos-related lung disease continues to increase and is frequently encountered by general physicians as well as respiratory specialists. It is therefore important for general physicians to have an awareness of benign asbestos-related lung disease that may mimic more serious but common lung disease such as lung cancer that carries significant implications when diagnosed.

## CASE HISTORY

A 70-year-old man presented with atypical dyspeptic-sounding chest pain and moderate weight loss. He had a 25 pack year smoking history and had been exposed to asbestos from 1967–76 while working as a decorator for a building firm on multiple sites alongside tradesmen who ripped out asbestos. From 1979–89 he worked as a painter and decorator maintaining old buildings. Twenty years previously, he had been investigated by a respiratory physician for an incidental finding on chest x-ray with normal bronchoscopy and no progressive radiographic changes over two years. His old films were not available for comparison and there was no evidence of a previous CT scan being performed.

Physical examination was unremarkable and spirometry reasonable (3.05/3.5). His current chest x-ray was abnormal showing a left sided intrapulmonary neoplasm and some pleural plaques in keeping with his asbestos exposure (see Figure 1). Because of the weight loss, smoking history and radiographic abnormalities (and the unavailability of

previous imaging), he was investigated further with bronchoscopy and a CT scan which showed no evidence of malignancy. The CT scan did however confirm the presence of a left-sided 4 cm mass (see Figure 2A) and enfolded lung with a 'comet tail' appearance (see Figure 2B) consistent with RA, as well as pleural plaques but no mediastinal adenopathy (figures 2A–C). At a further clinic review, he had more than replaced his weight loss (in retrospect this may have been entirely due to reduced appetite because of his dyspeptic chest pain). A barium swallow was entirely normal and his dyspeptic symptoms settled spontaneously without the need for treatment. Serial chest x-rays have remained entirely unchanged (over two years) with no new worrisome



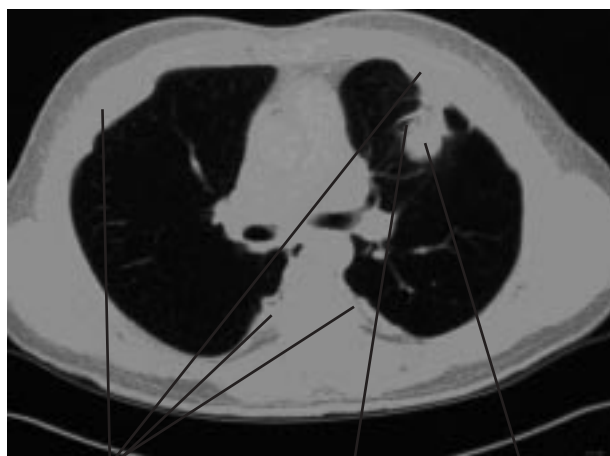
**FIGURE 1** CXR showing apparent left midzone mass.

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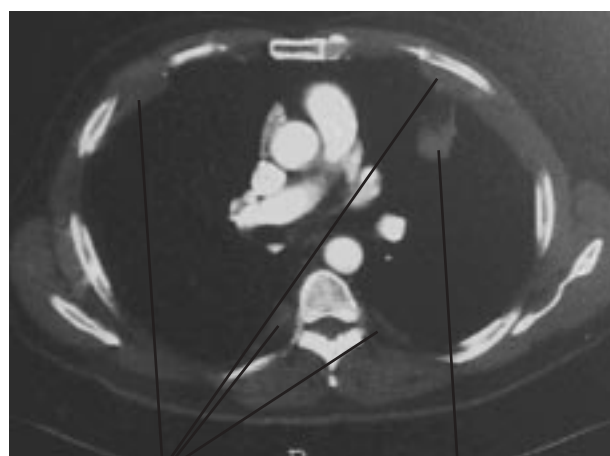
Pleural plaques and thickening  
Comet tail (vessels and bronchi)  
Apparent mass (enfolded lung)

**FIGURE 2A** CT scan (lung and mediastinal windows) showing enfolded lung and 'comet tail' appearance.



Pleural plaques and thickening  
Comet tail (vessels and bronchi)  
Apparent mass (enfolded lung)

**FIGURE 2B** CT scan (lung and mediastinal windows) showing enfolded lung and 'comet tail' appearance.



Pleural plaques and thickening  
Apparent mass (enfolded lung)

**FIGURE 2C** CT scan (lung and mediastinal windows) showing enfolded lung and 'comet tail' appearance.

symptoms or signs.

Rounded atelectasis was originally described in 1928 by Loeschke.<sup>1</sup> In 1966, Blesovsky postulated an association between rounded atelectasis and asbestos exposure (responsible for about 70% of RA cases) coining the term Blesovsky's syndrome.<sup>2</sup> He described specific radiological features of a peripheral, laminar lesion with radiations and a thickened membrane enfolding otherwise normal lung at thoracotomy with occasional pleural plaques.<sup>2</sup> Other terms used have included 'shrinking pleuritis' and 'pulmonary pseudotumour'.<sup>3,4</sup> It can also occur in pleural tuberculosis, Dressler's syndrome, cardiac failure, post-

traumatic haemorrhagic effusion and therapeutic pneumothorax and has been described complicating Legionella pneumonia.<sup>5-9</sup>

Rounded atelectasis is a benign condition with a localised, but usually peripheral, area of collapsed lung parenchyma surrounded partly by invaginated thickened pleura. Its pathogenesis remains unclear, although it usually reflects visceral pleural fibrosis. It is thought to occur either due to trapping and infolding of poorly expanded lung at the periphery by fibrinous adhesions following pleural effusion<sup>7</sup> or by visceral pleural fibrosis following pleuritis.<sup>3</sup> Other theories involving other factors have been proposed.

Imaging of RA typically shows a 2–5 cm pleural-based rounded lesion in the lower lobes with pleural effusion or thickening and a characteristic 'comet tail' appearance due to the distorted course of vessels and bronchi entering the atelectatic portion of lung.<sup>10</sup> Only a minority of RA cases continue to progress in size and require evaluation for malignancy or, more rarely, decortication if symptomatic from the pleural fibrosis.<sup>7</sup> More recent mineralogical data suggest a high concentration of asbestos bodies in bronchoalveolar lavage in RA patients related to asbestos exposure even in the absence of diffuse pleural thickening or asbestosis.<sup>11</sup>

## CONTRIBUTIONS

ARL Medford and NA Maskell conceived the idea. ARL Medford did the literature search and wrote the manuscript with input from M Darby and NA Maskell. The images were reviewed by M Darby.

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