Rounded atelectasis

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Case

A 69-year old man presented with increasing shortness of breath for a week. This symptom improved at rest but increased when lying flat. His medical history was significant for congestive heart failure (CHF). His family history and personal history were negative for cancer. He had less than 20 pack years of smoking history and quit over 30 years ago. He worked in the United States Navy and was exposed to asbestos for several years while on active duty. Vital signs were within normal limits. On examination, breath sounds were diminished on the right side. Laboratory work up showed elevated brain natriuretic peptide. Chest x-ray (Figure 1) showed small bilateral pleural effusions with air space opacities in the right lower lobe. Computed tomography (CT) of his chest (Figure 2A) showed

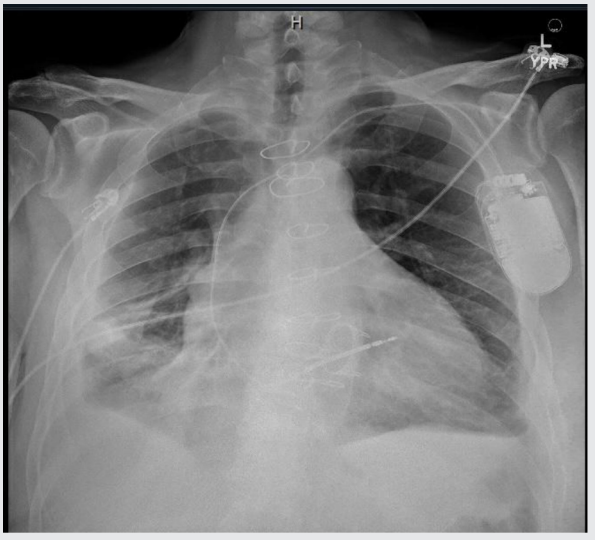

Figure 1. Chest x-ray showing small pleural effusions bilaterally with opacities in the right lower lobe.

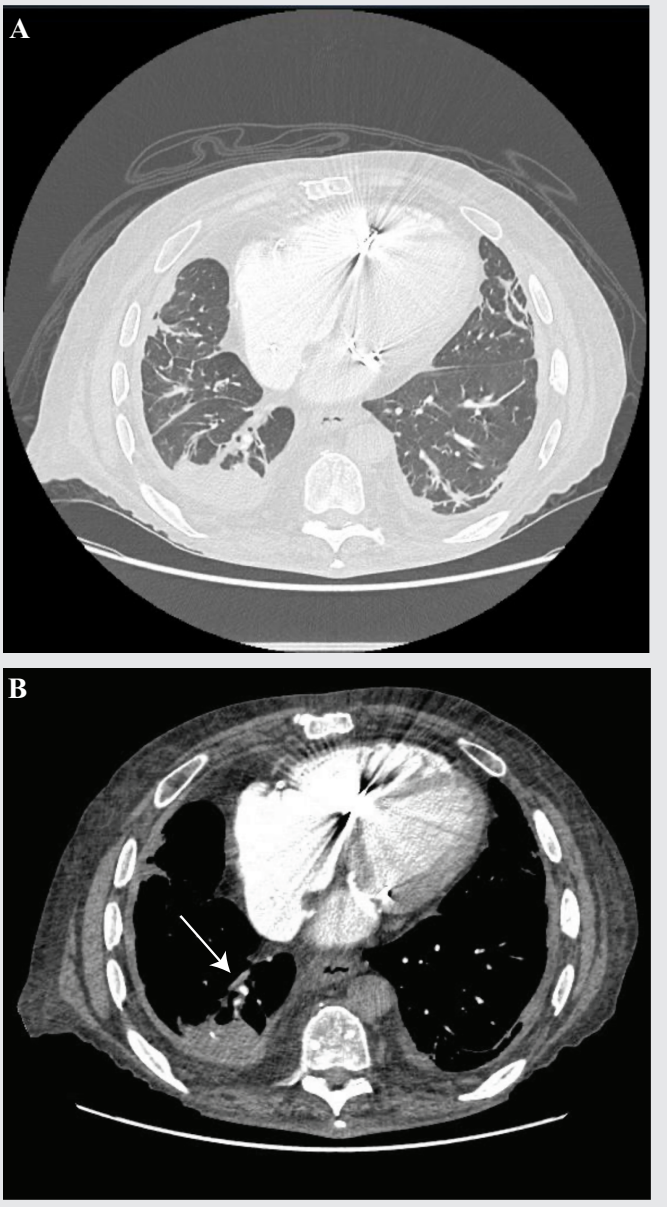

Figure 2. A: Computed tomography of the chest showing bibasilar pleural thickening, soft tissue thickening in right lower lobe (rounded atelectasis) attached to the pleura, and reduced right lung volume. **B:** Comet tail sign seen on the right lower lobe produced by pulling of bronchovascular bundles (arrow).

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bibasilar pleural thickening with small right sided pleural effusion with an area of soft tissue thickening in the right lower lobe resembling rounded atelectasis. An echocardiogram confirmed reduced left ventricular systolic function. He was placed on medications for CHF.

Discussion

Rounded atelectasis, also known as folded lung, atelectatic pseudotumor, or Blesovsky's syndrome, is an unusual type of lung collapse that occurs close to a scarred pleura and is often mistaken for a lung mass. It is associated with occupational exposure to mineral dust, like asbestos, pneumoconiosis, and exudative pleuritis due to medical disorders, such as tuberculosis, hemothorax, and uremia. Studies have shown that rounded atelectasis is more common in men (80%) than women.[1] Seventy percent of the cases are associated with asbestos exposure.[2] Most cases are asymptomatic and are usually identified incidentally on imaging done for other reasons. Some patients present with chest pain, cough, and/or dyspnea. Physical examination shows no abnormal findings, and no changes are seen in lung function tests.[2]

The diagnosis is made on imaging. These densities are commonly seen in the lower lobes, adjacent to the pleura in the form of a peripheral round, oval, fusiform subpleural mass with the size range from 2.5 to 8 cm.[1] They can be associated with pleural plaques, diffuse pleural thickening, and pleural effusion. The comet tail sign (Figure 2B) is characteristic for rounded atelectasis and is seen when vessels and bronchi entering the mass are compressed and bent. Rounded atelectasis can persist for years, clear spontaneously, or, in rare cases, grow. It should be distinguished from sub pleural lung masses, like lung carcinoma or lung metastasis.[1] Computed tomography is the ideal tool for making the correct diagnosis for rounded atelectasis. Biopsy is considered only when radiological criteria are not met or there are features of malignant growth.

Keywords: rounded atelectasis, asbestos, pleural mass

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