IMAGES IN THORAX

Cementing an unwanted relationship

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A 93-year-old male with COPD, hypertension and stroke presented to the emergency department with cough and dyspnoea. Two months before this episode, he had suffered a compression fracture and therefore received first and second lumbar vertebroplasty with cement implantation. In the emergency department, his oxygen saturation was 88% while breathing ambient air; his other vital signs were normal. Physical examination revealed crackles over his bilateral lung field.

A laboratory test revealed leucocytosis and a mild elevation of the C reactive protein level. A chest radiograph showed a curvilinear radiopaque foreign body with cement in the lumbar spine and right lower lung consolidation (figure 1). CT confirmed that linear-shaped cements had embolised into the right pulmonary artery and its branches in the right upper lung (figure 2). Transthoracic echocardiography revealed mild pulmonary hypertension without evidence of right heart failure. His symptoms improved after antibiotics had been administered. He lived uneventfully in the following years.

Vertebral augmentation procedures (eg, vertebroplasty and kyphoplasty) are common management strategies for vertebral compression fractures. These procedures are performed only when conventional medical therapy has not provided pain relief or when the pain substantially alters the patient's lifestyle.[1] The procedures involve the percutaneous injection of bone cement into the fractured vertebra under image guidance, and the most frequent complication is cement leakage.[2] Moreover, pulmonary cement embolism is a common complication, and the risk ranges between 3.5% and 23%.[2] This complication is diagnosed on the basis of clinical history combined with the presence of radiopaque cement emboli on the chest radiograph or CT image.[3] No typical image presentation exists for pulmonary cement embolism, because these emboli develop sporadically without specific lobar distribution.[3] Management is dependent on the position of the cement emboli and the symptoms of the patients. Initial heparinisation with bridging to oral anticoagulants for at least 6 months is preferred for symptomatic patients or central cement emboli, whereas observation is preferred for asymptomatic patients with peripherally located cement emboli.[2] Surgical removal of the emboli should be considered in patients with massive emboli or right heart failure.[2]

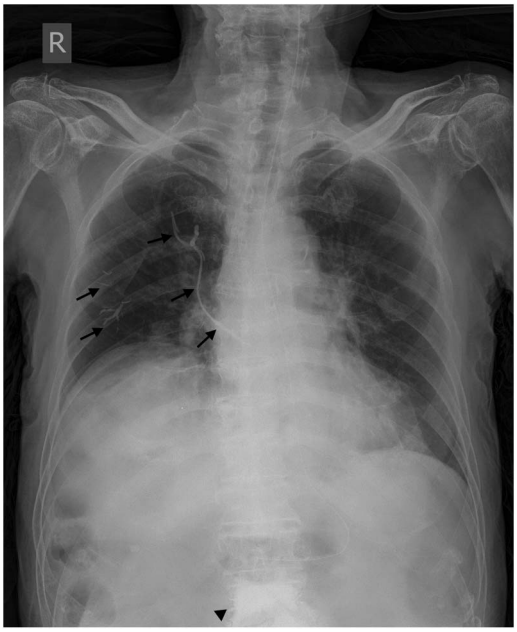

Figure 1 Chest radiograph showed a curvilinear radiopaque foreign body (arrows) with cement in lumbar spine (arrowheads) and consolidation in the right lower lung.

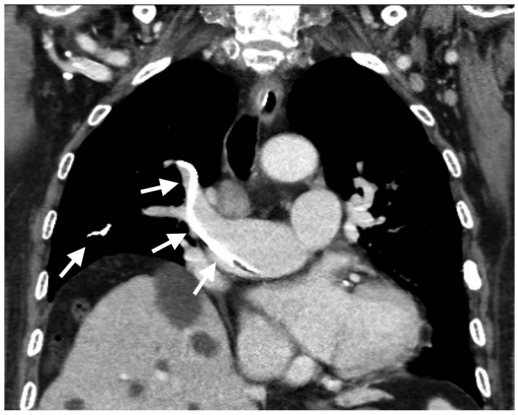

Figure 2 CT confirmed that linear-shaped cements had embolised into the right pulmonary artery and its branches in the right upper lung (arrows).

Contributors All authors were involved in literature review, drafting of manuscript and critically reviewing it for intellectual content.

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