

## Lingular pneumonia obscured by implanted cardioverter-defibrillator: Lateral thinking

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A 56-year-old female with an implanted cardioverter-defibrillator was admitted with a short history suggestive of a diagnosis of pneumonia. An AP radiograph did not identify an area of consolidation. A subsequent lateral radiograph highlighted an extensive left-lingular-lobe consolidation that had been obscured by the cardiac device. This case highlights the fact that large devices can obscure significant pathology, and that lateral or cross-sectional imaging may be helpful in reaching a diagnosis.

### Case report

A 56-year-old female patient was admitted with a short history of dyspnea, hemoptysis, pleuritic chest pain, and a cough productive of brown sputum.

Her past medical history included mitral valve replacement and tricuspid valve repair for rheumatic heart disease, severe left ventricular systolic dysfunction, implanted cardioverter-defibrillator for polymorphic ventricular tachycardia, permanent atrial fibrillation, and asthma. She was undergoing therapeutic anticoagulation with Warfarin (INR = 4.1).

On examination, the patient was febrile (39°C), hypoxic (oxygen saturation 92% on air, pO<sub>2</sub> 9.8 kPa), tachypneic (respiratory rate 20 breaths per minute), hypotensive (blood pressure 95/45 mmHg), and had a heart rate of 70 beats per minute.

The trachea was central, and bronchial breathing was audible over the left mid zone posteriorly.

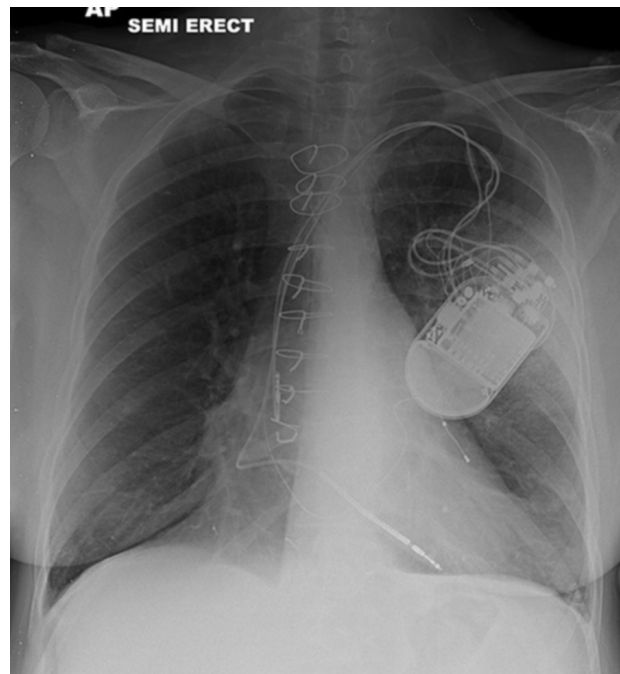


Fig. 1A. A 56-year-old woman with fever and cough. The AP chest radiograph shows an implanted cardioverter-defibrillator over the left chest, largely obscuring a vague left lung opacity.

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Fig. 1B. The lateral chest radiograph shows wedge-shaped opacity corresponding to lingular pneumonia. The implanted cardioverter-defibrillator is in the anterior soft tissue.

Following initial fluid resuscitation, venous blood sampling, and administration of intravenous antibiotics, a chest radiograph was performed (Figs. 1A & B). The lateral chest radiograph demonstrated left lingular lobe consolidation, in keeping with a diagnosis of pneumonia. The pneumonia had largely been obscured by the implanted cardioverter-defibrillator on the antero-posterior projection.

*Streptococcus pneumoniae* was isolated on anaerobic blood culture, and pneumococcal urinary antigens were positive. Sputum culture did not yield positive results. The patient was admitted to a high dependency unit for inotropic support and was successfully treated with intravenous benzylpenicillin.

### Discussion

With the advent of rotational computerized tomography, lateral chest radiographs have declined in popularity. However, they can provide valuable diagnostic information when used correctly (1). There are four indications for performing a lateral chest radiograph (2):

- Exploration of a retrosternal or retrocardiac shadow
- Localization of lesions seen on anteroposterior or posteroanterior projections
- Clarification of lobar collapse or consolidation
- Confirmation of encysted fluid in the oblique fissure

Several studies have reported increased diagnostic sensitivity for pneumonia (6-15%)(3, 4) with paired posteroanterior and lateral radiographs, although this must be balanced against the risk attached to additional radiation exposure, which can be four to thirteen times that of a posteroanterior radiograph alone (5).

As complex devices become more prevalent, the clinician should be mindful that large devices can obscure significant pathology, and that lateral or rotational imaging may be helpful in reaching a diagnosis.

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