

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Medical Imaging Quiz – Case 67

A 75-year-old female presented to the emergency department with persistent cough for 16 days, fatigue and chest pain. She referred several episodes of respiratory infections, but none hospital admission. On examination she was in a good performance status, afebrile, with no signs of tachypnea (blood pressure of 140/85 mmHg, pulse rate of 80/min, respiratory rate 23/min, SatO₂ 97%, temperature 36.7 °C). Laboratory findings revealed moderate leucocytosis and C-reactive protein (CRP). Mantoux and QuantiFERON tests were negative, while sputum cultures revealed *Pseudomonas aeruginosa*. Chest computed tomography (CT) was performed (fig. 1) and treatment with an antibiotic course was prescribed.

Comment

Mucoid impaction, also referred to as mucus plugging, bronchial mucocele or bronchocele formation, refers to airway filling by mucoid secretions and can be obstructive or non-obstructive. It is a common pathological finding in chest imaging.

Mucoid impaction may result from either obstructive or non-obstructive causes, although the latter does eventually obstruct the bronchi as well:

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Non-obstructive causes are infectious or inflammatory. Cystic fibrosis due to impaired ciliary movement and thick secretions, asthma due to increased mucus production, allergic bronchopulmonary aspergillosis (ABPA) can sometimes have high attenuation mucoid impaction.

Obstructive causes include congenital or neoplastic causes. Congenital bronchial atresia most commonly affects the apicoposterior segment of the left upper lobe, other congenital causes include intralobar sequestration and intrapulmonary bronchogenic cyst. Neoplastic may be either benign (bronchial hamartoma, bronchial lipoma, tracheobronchial papillomatosis) or malignant (bronchogenic carcinoma, bronchial carcinoid, endobronchial metastases). Other acquired conditions are broncholithiasis, tuberculous bronchostenosis

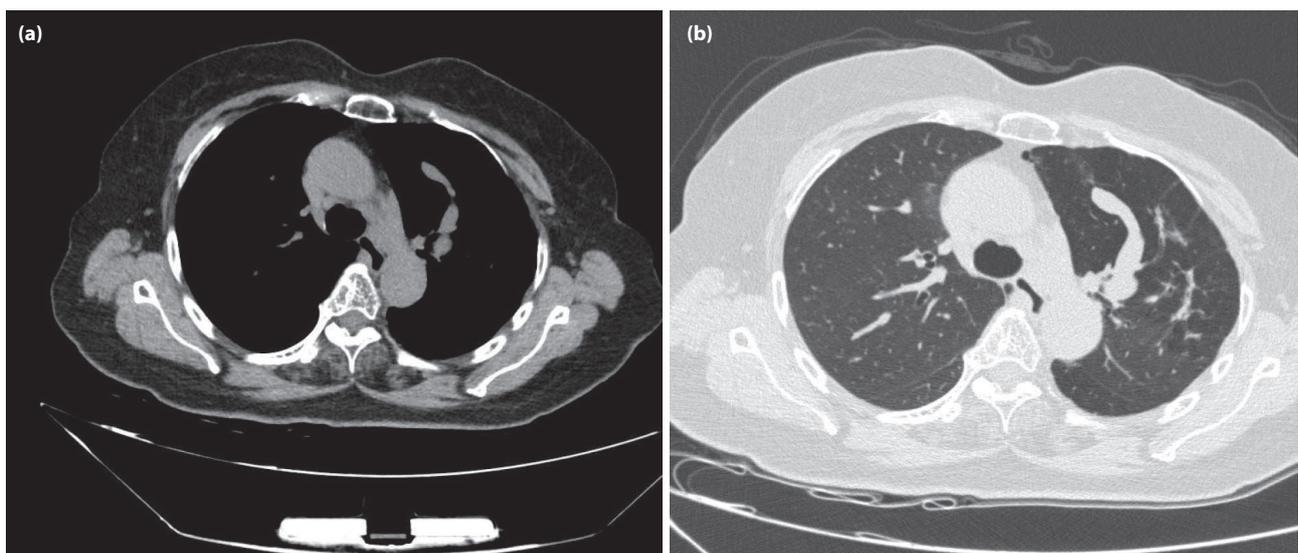


Figure 1. Chest computed tomography (CT) reveals fluid density material located dependently within the left bronchus. The classic feature seen when plugged mucus extends along large branching airways is the finger-in-glove sign.

or even foreign body aspiration.

Mucoid impaction may appear as a branching tubular opacity that is distinct from the normal vascular shadows. This classic feature is the finger-in-glove sign, and is also seen on CT. It can sometimes prove difficult to diagnose on plain radiography.

The appearance on CT can be variable, depending on where the mucous plugging occurs (i.e. central or peripheral airways). Mucous plugs appear as fluid density material often located dependently within the bronchus, sometimes with internal gas. The classic feature seen when plugged mucus extends along large branching airways is the finger-in-glove sign.

Several additional features may be distal lung collapse, distal airway dilatation or double artery sign. Prolonged mucous plugging can lead to bronchial dilatation and bronchiectasis. Differential diagnosis should be done between mucoid impaction and endobronchial blood or blood clot. Treatment depends on the underlying condition.

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