The vanishing lung

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Clinical—A 55-year-old man presented with a 4-day history of shortness of breath and productive cough. The patient had a long-standing history of shortness of breath on exertion and a 35-pack year smoking history, but no prior hospital admissions. Family history was significant with 2 first-degree relatives affected by severe respiratory disease, not otherwise specified. A chest radiograph was performed (Figure 1).

Figure 1. PA chest radiograph

What is the diagnosis and management?
Answer and Discussion—Initial review of the chest radiograph (Figure 1) showed mediastinal shift to the right, raising the possibility of a tension pneumothorax—however this was inconsistent with the patient’s presentation. Closer examination of the film shows evidence of fine lung markings in the mid and upper zones and there is no visible evidence of collapsed lung.

The presence of extensive *large bullae* filling the left lung field were confirmed on CT (Figure 2). Similar appearances were noted in the right upper zone. An increased right lower zone density, suspicious for infection was also noted.

Alpha-1-anti-trypsin levels were normal at 1.7. Spirometry showed a severe obstructive pattern, FEV$_1$ 0.82 (22% predicted), FVC 1.91 (40% predicted), FEV$_1$/FVC 0.43.

*The patient was treated with a course of amoxicillin/clavulanate and steroids*, with resolution of symptoms. He has been referred to the respiratory service but declined bullectomy and proceeds with medical management.

Figure 2. CT chest confirming mediastinal shift secondary to giant bullae
‘Tension’ bullae have been previously reported, again mimicking a tension pneumothorax, highlighting the fact that a tension pneumothorax is an emergency situation and the diagnosis is generally based on clinical findings rather than imaging.

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**Reference:**