

# Pneumothorax in a Patient With COPD After Blunt Trauma

Albert Lu, MD, MS<sup>1</sup>  
Paul Aronowitz, MD<sup>2</sup>

<sup>1</sup>Internal Medicine, Graduate Medical Education, California Pacific Medical Center, San Francisco, California.

<sup>2</sup>Medicine, California Pacific Medical Center, San Francisco, California.

Disclosure: Nothing to report.

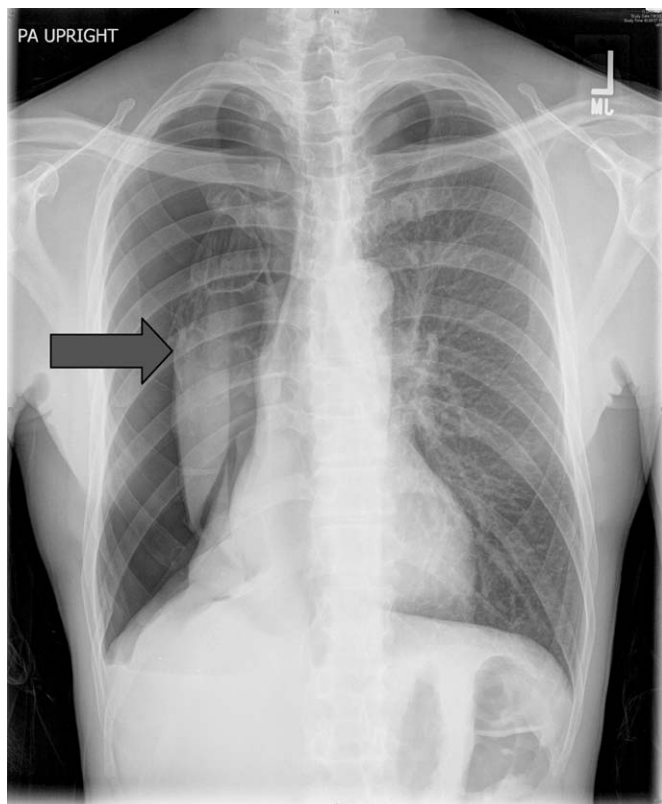


FIGURE 1. Chest x-ray showing large pneumothorax.

A 53-year-old man with a history of heavy tobacco use presented with shortness of breath. Eight days prior to his presentation he was diagnosed with multiple rib fractures after suffering an assault. Since then he had developed dyspnea and a nonproductive cough. A chest x-ray revealed a large pneumothorax on the right with approximately 80% volume loss (arrow, Figure 1).

Tube thoracostomy was performed. Repeat chest x-ray showed that the pneumothorax had resolved, revealing a consolidation likely caused by either reexpansion pulmonary edema<sup>1,2</sup> or, given its location in the superior segment of the right lower lobe, aspiration pneumonia (thin arrow, Figure 2). Also seen in the x-ray is an old scar (thick arrow, Figure 2) and apical bullous changes with hyperinflated lungs

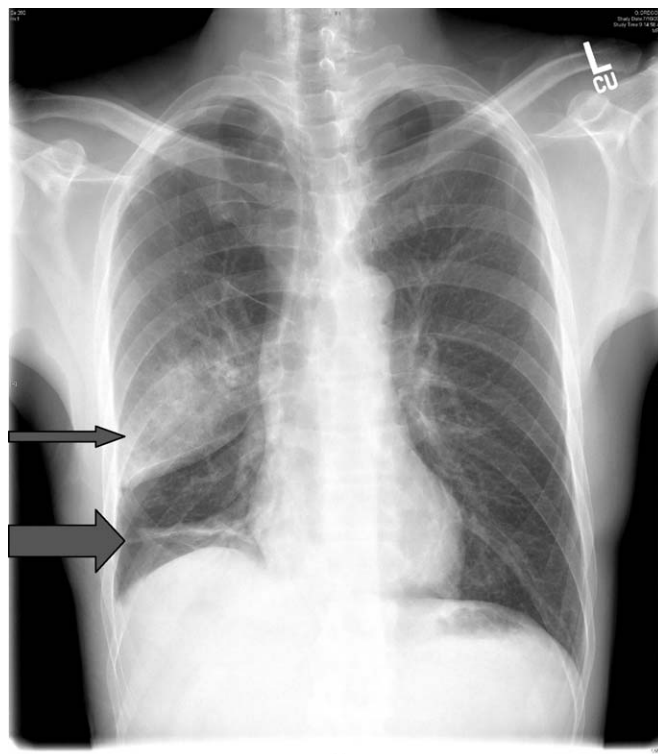


FIGURE 2. Chest x-ray after lung re-expansion.

suggestive of chronic obstructive pulmonary disease (COPD).

## DISCUSSION

Pneumothorax is a common complication of blunt trauma and rib fractures.<sup>3</sup> While the patient did not have a preceding diagnosis of COPD, his extensive smoking history and his radiographic changes are consistent with COPD, which is a risk factor for pneumothorax. Secondary pneumothorax is defined as pneumothorax that occurs as a complication of underlying lung disease and is most commonly associated with COPD,<sup>4</sup> with rupturing of apical blebs as the proposed mechanism. This patient suffered a pneumothorax due to trauma, but given his COPD he is at

increased risk for developing spontaneous pneumothorax in the future.

---

**Address for correspondence and reprint requests:**

Paul Aronowitz, MD, California Pacific Medical Center, San Francisco, California (CPMC), Medicine, 2351 Clay St., Suite 360, San Francisco, CA, 94115; Telephone: 415-600-1133; Fax: 415-775-7437; E-mail: AronowP@sutterhealth.org Received 9 October 2009; revision received 1 November 2009; accepted 14 November 2009.

**References**

1. Sohara Y. Reexpansion pulmonary edema. *Ann Thorac Cardiovasc Surg.* 2008;14(4):205–209.
2. Tariq SM, Sadaf T. Images in clinical medicine. Reexpansion pulmonary edema after treatment of pneumothorax. *N Engl J Med.* 2006;354(19):2046.
3. Kulshrestha P, Munshi I, Wait R. Profile of chest trauma in a level I trauma center. *J Trauma.* 2004;57(3):576–581.
4. Guo Y, Xie C, Rodriguez RM, Light RW. Factors related to recurrence of spontaneous pneumothorax. *Respirology.* 2005;10(3):378–384.