A 22-year-old man presented to the emergency department (ED) with 2 days of fever and shortness of breath. Coarse-sounding, decreased breath sounds were noted over his left lower lung field. While waiting for chest radiographs, bedside ultrasonography confirmed the diagnosis (Figure 1).

**Figure 1.** Bedside ultrasonographic image of the patient’s posterior left hemithorax, demonstrating air bronchograms (horizontal white arrow), sonographic “B lines” (black arrow), and the irregular border of the “shred sign” (vertical white arrows), which heralds the intersection of subpleural lung consolidation (star) and normal aerated lung parenchyma (“L”).

**Figure 2.** The patient’s subsequent chest radiograph demonstrating a left lobar consolidation (black arrow).


For the diagnosis and teaching points, see page 505.

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DIAGNOSIS:

Pneumonia confirmed by bedside ultrasonography. The patient’s diagnosis of pneumonia, substantiated by characteristic sonographic findings, including lung consolidation, was also evident on subsequent radiograph (Figure 2).

Sonographic subpleural lung consolidation appearing as irregular or poorly defined hypoechoic lung tissue with nonhomogeneous tissue-like echotexture is a hallmark finding of pneumonia by ultrasonography. Dynamic hyperechogenic “air bronchograms” representing air trapping within the small airways help differentiate pneumonia from atelectasis or effusion, and sonographic “B lines” (vertical, hyperechoic artifacts) indicate interstitial or alveolar-interstitial edema (Figure 1). Unlike the smooth border of a pleural effusion, the consolidated and normal lung tissue junction forms the irregular “shred sign.”

In studies using chest computed tomography as the imaging standard for pneumonia, the diagnostic sensitivity and specificity of lung ultrasonography appears superior to plain radiographs. Compared with plain radiographs, bedside lung ultrasonography can facilitate faster ED diagnosis of pneumonia, can accurately characterize an infiltrate’s change over time without radiation, and can be used in areas in which ultrasonography is available but traditional radiography is absent. Because consolidation can result from other conditions such as pulmonary contusion and acute respiratory distress syndrome, the clinical impression of the patient with suspected pulmonary pathology remains important when this reliable tool is used for detection of pneumonia.

The views expressed herein are solely those of the authors and do not represent the official views of the Department of Defense or Army Medical Department.

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