

**BRIAN APTER, MD**

California Pacific Medical Center,  
San Francisco, CA

**PAUL ARONOWITZ, MD**

Clinical Professor of Medicine,  
Department of Internal Medicine,  
University of California, Davis School  
of Medicine, Sacramento, CA

# The Clinical Picture

## Double trouble: Simultaneous complications of therapeutic thoracentesis



**FIGURE 1.** Radiography at the time of presentation showed opacification of the right hemithorax secondary to hepatic hydrothorax.

**A** 51-YEAR-OLD MAN with end-stage liver disease from alcohol abuse presented with worsening dyspnea on exertion. He had a history of ascites requiring diuretic therapy and intermittent paracentesis, as well as symptomatic hepatic hydrothorax requiring thoracentesis. Chest radiography showed a large right hydrothorax (**FIGURE 1**).

See related commentary, page 409

The patient underwent high-volume thoracentesis, and 3.2 L of clear fluid was removed. Chest radiography after the procedure revealed a right-sided pneumo-

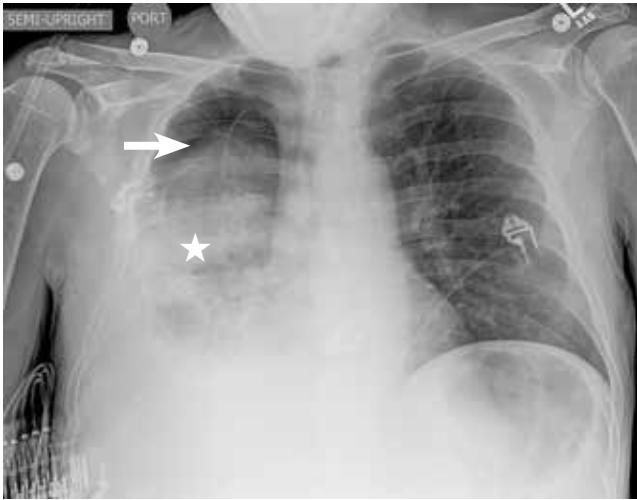


**FIGURE 2.** Radiography after high-volume thoracentesis showed pneumothorax (arrow).

thorax (**FIGURE 2**, arrow). The patient was mildly short of breath and was treated with high-flow oxygen. Later the same day, his shortness of breath worsened, and repeat chest radiography showed an unchanged pneumothorax that was now complicated by reexpansion pulmonary edema after thoracentesis (**FIGURE 3**, star). The reexpansion pulmonary edema resolved by the following day, and the pneumothorax resolved after placement of a pig-tail catheter into the pleural space (**FIGURE 4**).

Iatrogenic pneumothorax after thoracentesis occurs in 6% of cases.<sup>1</sup> Iatrogenic reexpansion pulmonary edema after thoracentesis occurs in fewer than 1% of cases.<sup>2,3</sup> Simultaneous pneumothorax and reexpansion pulmonary edema arising from the same procedure appears to be extremely rare. ■

doi:10.3949/ccjm.81a.13095



**FIGURE 3.** Radiography done later the same day as FIGURE 2 showed the unchanged pneumothorax (arrow), now complicated by reexpansion pulmonary edema (star).



**FIGURE 4.** Radiography 1 day later showed resolution of the pneumothorax and the reexpansion pulmonary edema.

### REFERENCES

1. Gordon CE, Feller-Kopman D, Balk EM, Smetana GW. Pneumothorax following thoracentesis: a systematic review and meta-analysis. *Arch Intern Med* 2010; 170:332–339.
2. Ragozzino MW, Greene R. Bilateral reexpansion pulmonary edema following unilateral pleurocentesis. *Chest* 1991; 99:506–508.
3. Dias OM, Teixeira LR, Vargas FS. Reexpansion pulmonary edema after therapeutic thoracentesis. *Clinics (Sao Paulo)* 2010; 65:1387–1389.

*ADDRESS: Paul Aronowitz, MD, Department of Internal Medicine, University of California, Davis School of Medicine, 3100 PSSB, 4150 V Street, Sacramento, CA 95817; e-mail: Paul.aronowitz@ucdmc.ucdavis.edu*