Disappearing Post-Pneumonectomy Pleural Fluid without Bronchopleural Fistula

Danielle A. Smith¹, Colin Gillespie^{1,2}, Malcolm M. DeCamp^{1,2}, and Ankit Bharat^{1,2}

¹Division of Thoracic Surgery, Department of Surgery, and ²Division of Pulmonary and Critical Care Medicine, Department of Medicine, Northwestern University Feinberg School of Medicine, Chicago, Illinois

Figure 1. Preoperative chest computed tomography revealing the central left upper lobe tumor. The tumor invaded the left pulmonary artery and the left lower lobe bronchus as shown in the cross-sectional (A) and coronal (B) images.

A 65-year-old woman underwent left pneumonectomy for T2aN1 squamous cell carcinoma (Figures 1A and 1B). She was discharged on postoperative Day 4, breathing room air. The left pleural space demonstrated the expected fluid increase (Figures 2A and 2B). However, after 3 weeks, chest radiography revealed decreased pleural fluid. Chest tomography 1 week later showed complete absence of fluid (Figures 2C and 2D). She remained without cough, fevers, or symptoms suggestive of bronchopleural fistula (1–4). The complete blood cell count and biochemical panel were normal. Thoracotomy and chest tube incisions were well healed. Bronchoscopy (Figure 3A), bronchogram, ventilation scan (Figure 3B),

esophagram, and chest and/or abdominal imaging were also normal and revealed no ascites or seroma. She received systemic chemotherapy, but during the 16th week she died of cardiac arrest. Autopsy showed a massive pulmonary embolism. The left bronchial stump was intact, and the pleural space was empty, with negative microbial cultures. There were no diaphragmatic fenestrations. Hence, we determined this was benign evacuation of the pneumonectomy space. We propose that bronchoscopy and ventilation scan should be performed to confirm benign evacuation of the pneumonectomy space. If negative, the patient should undergo surveillance with repeat bronchoscopy because some of these patients might have microscopic bronchopleural fistula (5). However, pleural instrumentation, with thoracentesis or thoracoscopy, should not be performed, to avoid seeding infection. ■

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Figure 2. Postoperative imaging. (A) Chest X-ray on postoperative Day 0. (B) Chest X-ray on Day 4, the day of discharge. (C) Chest X-ray 3 weeks after surgery. (D) Chest tomogram after 1 month, showing disappearance of left pneumonectomy fluid.

Figure 3. (A) Bronchoscopy demonstrating an intact left bronchial stump. (B) Ventilation scan showing absence of xenon on the left (L) side. R = right.