A 53-year-old woman with coronary artery disease presented with dyspnea 4 days after aortic valve replacement and coronary artery revascularization with a left internal mammary graft to the left anterior descending coronary artery. Frontal chest radiography 8 days after surgery revealed a large left pleural effusion (Figure 1) that on needle aspiration was characterized grossly and chemically as a chylothorax. After reaccumulation of the pleural effusion 3 days later, a tube thoracostomy was performed, producing 2300 mL of chylous fluid in the first 12 hours of drainage. The patient was referred to interventional radiology for diagnosis of a lymphatic leak and possible percutaneous treatment of the leak.

The cisterna chyli was opacified with oil-based iodinated contrast via pedal lymphatic cannulation. By a technique first described in humans in 1998 by Cope and with the patient under mild conscious sedation, the cisterna chyli was accessed percutaneously in the upper abdomen with the Seldinger technique under fluoroscopic guidance, and a 3F angiographic catheter was passed over a guidewire to the midthoracic duct. Injection of aqueous iodinated contrast at that level opacified the cephalad thoracic duct and demonstrated a lymphatic leak into the left pleural space originating from disrupted thoracic duct branches near the medial apex of the left chest (Figure 2). Embolization was performed by multiple Gianturco coils and gelatin sponge slurry passed through the angiographic catheter into the midthoracic duct to occlude it proximal to the leak (Figure 3). The patient’s thoracostomy drainage declined steadily over the next 3 days, and the tube was removed. Three weeks after thoracic duct embolization, she was asymptomatic and had no pleural effusion on chest radiography (Figure 4). She remains asymptomatic and with a clear chest radiograph 9 months after the procedure.
Figure 2. Opacification of thoracic duct by direct catheter injection reveals multiple sites of duct disruption and contrast extravasation (arrows) in apical left chest.

Figure 3. After thoracic duct embolization with multiple Giana-turco coils (arrows), duct occlusion is demonstrated by contrast injection proximal to coils.

Figure 4. Frontal chest radiograph obtained 3 weeks after thoracic duct embolization demonstrates resolution of pleural effusion.

Reference
Percutaneous Embolization of Thoracic Duct Injury
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_Circulation_. 2000;102:268-269
doi: 10.1161/01.CIR.102.2.268
_Circulation_ is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
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