Liquid-Only Thoracic Duct Embolization for Treatment of Chylous Effusions

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Introduction

- Chylous effusions arise from leakage of intestinal lymphatic fluid from the thoracic duct into the pleural space leading to dyspnea, cough, and chest pain.
- Causes can be traumatic, commonly from thoracic surgery, or non-traumatic, such as in the setting of malignancy.
- Thoracic duct embolization is a viable treatment alternative to surgery and consists of initial coil placement in the thoracic duct followed by injection of a mixture of n-butyl cyanoacrylate (n-BCA) glue and ethiodol at the site of the leak. The coils act as a scaffold for glue polymerization.
- We present two cases of successful thoracic duct embolization using only glue.

Case Presentations

Case 1

- A 68-year-old male with a history of right middle lobectomy complicated by high-output chyle leak status-post thoracotomy with decortication, thoracic duct ligation, and PleurX catheter placement presents for thoracic duct embolization.
- Bilateral inguinal lymphangiography was performed. Contrast is seen ascending through the lymphatic channels (Figure 1A).
- The cisterna chyli was accessed, and contrast extravasation was identified into the right chest consistent with a right-sided chyle leak (black arrow) (Figure 1B).
- A 0.014 Rubicon catheter was advanced into the duct. A large amount of n-butyl cyanoacrylate Trufill® glue was injected into the catheter. The catheter was completely removed before it adhered to the duct (Figure 1C)
- No complications were seen in the immediate post-operative period. Chest radiograph on post-procedure day 6 was negative, and the patient was discharged.
- At 7-month follow-up, the patient was asymptomatic. Chest radiograph was negative for recurrent effusion.

Figure 1

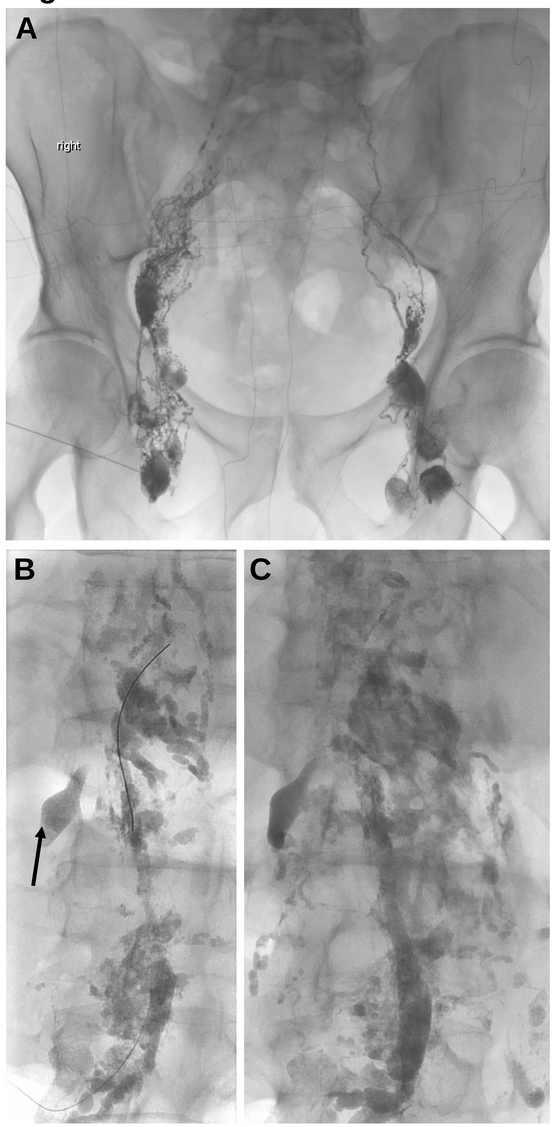
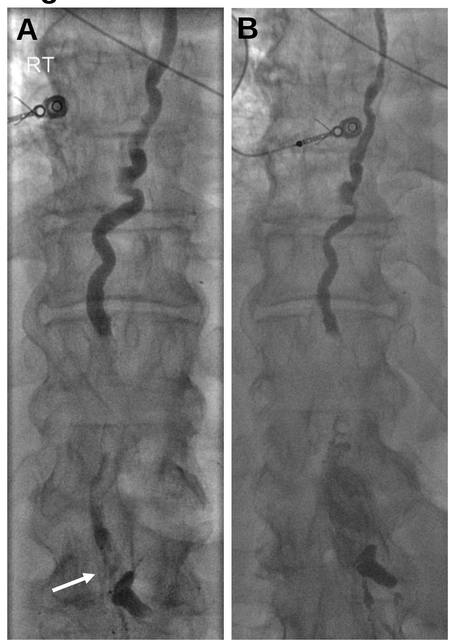
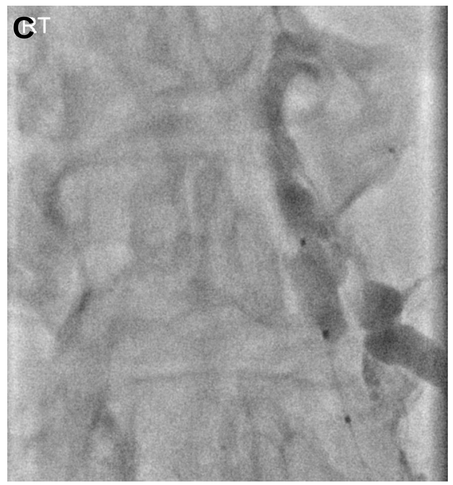


Figure 2





Case Presentations (contd.)

Case 2

- A 57-year-old male with history of chylous effusion and ascites presented for thoracic duct embolization.
- The bilateral inguinal lymph nodes were accessed and injected with lipiodol until contrast was seen in the cisterna chyli.
- The cisterna chyli was accessed with a needle and exchanged for a Quick-Cross catheter. Injection confirmed small extravasation from the cisterna chyli and thoracic duct (white arrow) (Figure 2A, 2C).
- Embolization was performed with n-butyl cyanoacrylate, which opacified across the site of the leak in the thoracic duct and into the cisterna chyli (Figure 2B).
- No complication or recurrence was observed in the post-procedural period.

Conclusions

- Thoracic duct embolization is an effective method of treating chylothorax.
- Current recommendations call for coil and glue embolization. We present two cases of successful liquid-only thoracic duct embolization, suggesting a possible safe and effective alternative.
- Further comparative studies are needed to measure long-term outcomes and complications.

References

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