

Non-surgical approach to the thoracic duct: a technique whose time has come

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Provenance: This is an invited Editorial commissioned by the Section Editor Feichao Bao (Department of Thoracic Surgery, The First Affiliated Hospital, Zhejiang University, Hangzhou, China).

Comment on: Garcia RG, Rocha RD, Franceschini J, *et al.* Computed Tomography-Guided Percutaneous Thoracic Duct Sclero-Embolization for Persistent Chylothorax. *Innovations (Phila)* 2016;11:291-4.

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Garcia and co-authors are to be commended for their success in alleviating the chylous leak in this patient who had suffered through numerous previous attempts at resolving the problem. The fact that the initial surgical procedure to resect a lymphangioma was interrupted owing to a large amount of chyle leaking from the tumor bed clearly presaged the problem that would haunt this patient for the next nine months. There can be no question that it is way more preferable to avoid and prevent chyle leaks than trying to fix a chyle leak. That being said recent advances in minimally invasive techniques and specifically the ability to embolize the thoracic duct with coils and glue have been literally “lifesavers”.

A high output chyle leak if not addressed promptly often results in the patient's demise because of the incredible amount of protein loss along with lymphocyte loss. Recall that thoracic duct fistula was one of the first techniques used for immunosuppression. Rarely are low fat enteral diets or total parenteral nutrition successful in resolving a chyle leak if the output is high. Certainly these maneuvers may be attempted but if the leak has not ceased within seven days alternative measures must be employed as the patient usually deteriorates rapidly. It remains unclear to me how this patient was able to survive as long as she did with the high output leak as described.

The technique to thoracic duct embolization originally described by the pioneering interventional radiologist

Stan Cope has had a major impact on this devastating complication (1). Stan made several observations that led to the development of his technique. As a thoracic surgeon who had operated on number of patients with chylothorax, usually using a VATS technique, initially I was very skeptical about a non-operative approach and thought Stan had lost his mind. However, after I saw the results from the first few patient's successfully treated I was converted and have never looked back. Stan recognized that if he could visualize and access the cisterna chyli he could successfully embolize the duct in essentially every case. He also established there was no problem with a needle passing through a hollow viscous on the way to the cistern. In order to visualize the cisterna a lymphatic vessel on the dorsum of the foot needed to be cannulated and subsequently realized that following infusion of the contrast a flush of normal saline led to more rapid and better visualization.

In the complex case described by Garcia, instead of attempting to cannulate the cisterna, a direct approach to obliterate the leak with a sclerosant in addition to embolization was undertaken facilitated by the visualization provided by the lymphangiogram, a technique that proved successful. Conventional lymphangiography is a technique that rarely is used because of the advent and primacy of CT and MRI yet it is the major determinant for successfully managing a thoracic duct leak. Wider adoption of catheter management for chylous leak as described by Cope has been

limited by the lack of expertise in lymphangiography. Ideally every department of clinical imaging should have at least one interventional radiologist who can become proficient in lymphangiography specifically for those cases of chylothorax where if the cisterna chyli is able to be visualized the thoracic duct can be successfully embolized saving the patient a surgical procedure as was done in this case.

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Footnote

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References

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