

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Interventional procedures consultation document

Percutaneous thoracic duct embolisation for persistent chyle leak

Chyle is a fluid made in the intestines during digestion of fat. It flows around the body through a network of lymph vessels and ducts including the thoracic duct. If the thoracic duct is damaged during surgery or by trauma, chyle leaks out (persistent chyle leak) and builds up in the body. In this procedure, under general anaesthesia, ultrasound and X-rays are used to create an image of the thoracic duct and find the leak. Then, using a needle, a tube is inserted through the abdominal wall (percutaneous) and guided into the thoracic duct. Small metal coils and medical glue are inserted through the tube and used to plug the leak (embolisation). The aim is to stop the leak.

NICE is looking at percutaneous thoracic duct embolisation for persistent chyle leak.

NICE's interventional procedures advisory committee met to consider the evidence and the opinions of professional experts with knowledge of the procedure.

This document contains the [draft guidance for consultation](#). Your views are welcome, particularly:

- comments on the draft recommendations
- information about factual inaccuracies
- additional relevant evidence, with references if possible.

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others.

This is not NICE's final guidance on this procedure. The draft guidance may change after this consultation.

After consultation ends, the committee will:

- meet again to consider the consultation comments, review the evidence and make appropriate changes to the draft guidance

- prepare a second draft, which will go through a [resolution process](#) before the final guidance is agreed.

Please note that we reserve the right to summarise and edit comments received during consultation or not to publish them at all if, in the reasonable opinion of NICE, there are a lot of comments or if publishing the comments would be unlawful or otherwise inappropriate.

Closing date for comments: 21 October 2022

Target date for publication of guidance: March 2023

1 Draft recommendations

1.1 Evidence on the safety and efficacy of percutaneous thoracic duct embolisation for persistent chyle leak is limited in quantity and quality. Therefore, this procedure should only be used with special arrangements for clinical governance, consent, and audit or research. Find out [what special arrangements mean on the NICE interventional procedures guidance page](#)

1.2 Clinicians wanting to do percutaneous thoracic duct embolisation for persistent chyle leak should:

- Inform the clinical governance leads in their healthcare organisation.
- Give people (and their families and carers as appropriate) clear written information to support [shared decision making](#), including [NICE's information for the public](#).
- Ensure that people (and their families and carers as appropriate) understand the procedure's safety and efficacy, and any uncertainties about these.
- Audit and review clinical outcomes of everyone having the procedure. The main efficacy and safety outcomes identified in this guidance can be entered into [NICE's interventional procedure outcomes audit tool](#) (for use at local discretion).
- Discuss the outcomes of the procedure during their annual appraisal to reflect, learn and improve.

1.3 Healthcare organisations should:

- Ensure systems are in place that support clinicians to collect and report data on outcomes and safety for everyone having this procedure.
- Regularly review data on outcomes and safety for this procedure.

- 1.4 Patient selection should be done by a team experienced in managing the condition, including a dietitian.
- 1.5 The procedure should only be done in specialised centres by clinicians with specific training and experience in this procedure.
- 1.6 NICE encourages further research into percutaneous thoracic duct embolisation for persistent chyle leak. Research should include details of patient selection, size and position of the leak, approaches used, and short- and long-term efficacy and safety outcomes.

2 The condition, current treatments and procedure

The condition

- 2.1 Chyle leak or discharge can occur as a result of thoracic duct injury (injury to the structure that returns lymph and chyle from the lower half of the body). Injury can happen during surgery, or from trauma or disease such as cancer. Chyle leak can cause delayed wound healing, dehydration, malnutrition, electrolyte imbalance, breathing problems and immunosuppression.

Current treatments

- 2.2 Small chyle leaks are usually treated with medicines and by managing nutrition (including by modifying diet or with total parenteral nutrition) to reduce chyle secretion and relieve symptoms. Persistent high-volume leaks may need drainage or surgical repair (such as thoracic duct ligation).

The procedure

- 2.3 Thoracic duct embolisation is a percutaneous image-guided closure of the thoracic duct and is done under general anaesthesia. It is a 3-step process consisting of intranodal inguinal lymphangiography

followed by percutaneous transabdominal catheterisation of the thoracic duct or cisterna chyli and then embolisation of the thoracic duct.

- 2.4 Under fluoroscopic or ultrasound guidance, an oil-based contrast medium is injected into inguinal lymph nodes. This progresses slowly through the network of pelvic and retroperitoneal lymphatic vessels and allows the thoracic duct and cisterna chyli to be visualised. Then through transabdominal access under X-ray guidance or fluoroscopy, the target thoracic duct or cisterna chyli is accessed with a guidewire using a needle. A microcatheter is advanced over the guidewire into the thoracic duct, then the guidewire is removed. Contrast medium is injected through the catheter to define the source of the leak and the thoracic duct anatomy. The target thoracic duct and its branches are embolised proximally to the leak with a combination of micro-coils and cyanoacrylate glue.

3 Committee considerations

The evidence

- 3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 6 sources, which was discussed by the committee. The evidence included 1 meta-analysis, 1 systematic review and 4 retrospective case series. It is presented in the [summary of key evidence section in the interventional procedures overview](#). Other relevant literature is in the appendix of the overview.
- 3.2 The professional experts and the committee considered the key efficacy outcomes to be: reduction in chyle leak, improved quality of life and improved nutrition.

- 3.3 The professional experts and the committee considered the key safety outcomes to be: pain, bleeding, infection including abdominal sepsis, bile leak and damage to intra-abdominal structures.
- 3.4 One commentary from a person who has had this procedure was discussed by the committee.

Committee comments

- 3.5 Most procedures were done through a transabdominal approach, but other approaches could be used.
- 3.6 The committee was informed that ligating the thoracic duct by thoracotomy was an alternative treatment for this indication.
- 3.7 The committee was informed that the aetiology of chyle leaks is more complex in children and the procedure may have additional risks in these patients.

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Chair, interventional procedures advisory committee

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