NICE National Institute for Health and Care Excellence

NICE guidance

Percutaneous endoscopic laser thoracic discectomy

HealthTech guidance
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www.nice.org.uk/guidance/htg34

Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guidance replaces IPG61.

1 Recommendations

1.1 Current evidence on the safety and efficacy of percutaneous endoscopic laser thoracic discectomy does not appear adequate for this procedure to be used without special arrangements for consent and for audit or research.

1.2 Clinicians wishing to undertake percutaneous endoscopic laser thoracic discectomy should take the following action.

- Inform the clinical governance leads in their Trusts.
- Ensure that patients understand the uncertainty about the procedure's safety and efficacy and provide them with clear written information. Use of NICE's information for the public is recommended.
- Audit and review clinical outcomes of all patients having percutaneous endoscopic laser thoracic discectomy.

1.3 Further research will be useful in reducing the current uncertainty and clinicians are encouraged to collect longer-term follow-up data. NICE may review the procedure on publication of further evidence.

2 The procedure

2.1 Indications

2.1.1 Percutaneous endoscopic laser thoracic discectomy is used to treat symptomatic thoracic disc herniation. This occurs when a portion of the intervertebral disc protrudes into the spinal canal and impinges on a nerve root. Symptoms include back pain, radicular pain, non-dermatomal leg pain, bladder dysfunction and lower extremity weakness. If left untreated, serious neurological sequelae may occur.

2.1.2 Standard discectomy for thoracic disc herniation may be either by open posterolateral or anterior approaches. A percutaneous endoscopic approach may lessen the morbidity associated with the procedure by allowing access and visualisation of the anterior and lateral aspects of the disc. The choice of approach will depend on the characteristics of the disc herniation and the surgeon's experience with the above techniques.

2.2 Outline of the procedure

2.2.1 Percutaneous endoscopic laser thoracic discectomy is usually done under local anaesthesia through a small incision in the back, using X-ray monitoring. A needle is introduced into the centre of the affected intervertebral disc. A guidewire is passed through the needle, followed by small instruments, which are used to remove some disc material. A Holmium–YAG laser is then introduced and laser energy is used to destroy more of the disc. Debris is removed by surgical instruments. The patient's neurological status is monitored throughout.

2.3 Efficacy

2.3.1 No controlled studies were identified. The studies identified provided little detail of study design and outcomes. In 1 study, 96% (96 out of 100) of patients

reported 'good-to-excellent results/symptomatic relief', but the meaning of this was not defined. The average time to return to work in this study was 10 days. For more details, see the overview.

2.3.2 One Specialist Advisor commented that there was no evidence to support the efficacy of the procedure, and that the procedure was difficult to master.

2.4 Safety

2.4.1 No operative or postoperative complications were reported in the studies identified. However, these studies provided little detail of study design and outcomes.

2.4.2 One Specialist Advisor considered that this procedure had the potential for serious neurological complications, and was concerned about risks to patients while surgeons learnt the procedure. This Advisor also thought that the procedure could result in nerve injury.

2.5 Other comments

2.5.1 This decision relates to the procedure when used in isolation (for example, to treat degenerative disc disease). No judgement is made regarding the use of this procedure as part of a larger operation, such as the treatment of scoliosis.

2.5.2 Appropriate patient selection for this procedure is important and may be difficult.

3 Further information

Sources of evidence

The evidence considered by the Interventional Procedures Advisory Committee is described in the overview.

Information for patients

NICE has produced information for the public on this procedure. It explains the nature of the procedure and the guidance issued by NICE, and has been written with patient consent in mind.

Update information

Minor changes since publication

January 2026: Interventional procedures guidance 61 has been migrated to HealthTech guidance 34. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.