NICE guidance

Percutaneous endoscopic laser cervical discectomy

Interventional procedures guidance
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www.nice.org.uk/guidance/ipg303

1 Guidance

1.1 Current evidence on the safety and efficacy of percutaneous endoscopic laser cervical discectomy is inadequate in quantity and quality. Therefore this procedure should only be used with special arrangements for clinical governance, consent, and audit or research.

1.2 Clinicians wishing to undertake percutaneous endoscopic laser cervical discectomy should take the following actions.

- Inform the clinical governance leads in their Trusts.
- Ensure that patients and their carers understand the uncertainty about the procedure's safety and efficacy and provide them with clear written information. In addition, the use of NICE's information for patients ('Understanding NICE guidance') is recommended.
- Audit and review clinical outcomes of all patients having percutaneous endoscopic laser cervical discectomy (see section 3.1).

1.3 Clinicians undertaking this procedure should have specific training in the use of lasers and in endoscopy of the spinal canal.

1.4 NICE may review the procedure on publication of further evidence.

2 The procedure

2.1 Indications and current treatments

2.1.1 Symptomatic cervical disc prolapse occurs when part of the intervertebral disc protrudes into the spinal canal and impinges on a nerve root or the spinal cord. The protruding disc may compress one or more nerve roots, which may cause neck and shoulder pain, radicular arm pain, weakness and numbness. Many mild episodes settle spontaneously but, in severe cases, serious neurological sequelae may occur.

2.1.2 Conservative treatments include analgesics and non-steroidal anti-inflammatory medication and physical therapy. Epidural steroid injections can also be used. Surgery to remove disc material is considered if there is evidence of nerve or spinal cord compression causing neurological loss or persistent symptoms that are unresponsive to conservative treatment. Surgical treatment options include open surgical decompression by discectomy with or without grafting or disc replacement.

2.2 Outline of the procedure

2.2.1 The procedure is carried out with the patient under general anaesthesia and with endoscopic guidance. A small retractor port is inserted into the anterior neck to expose the disc. All or part of the disc material is removed using a combination of laser to ablate disc material and to shrink and contract the disc further (laser thermodiskoplasty), and curettes, microforceps and a discotome to decompress the nerve root or spinal cord.

Sections 2.3 and 2.4 describe efficacy and safety outcomes which were available in the published literature and which the Committee considered as part of the evidence about this procedure. For more detailed information on the evidence, see the overview.

2.3 Efficacy

2.3.1 A case series of 111 patients treated by percutaneous endoscopic laser cervical discectomy reported that 47% (52/111) of patients were classified as having an 'excellent' outcome, 33% (37/111) had a 'good' outcome, 8% (9/111) had a 'fair' outcome and 12% (13/111) had a 'poor' outcome (measured by the McNab criteria four-point scale, which ranges from poor [no or insufficient improvement to enable an increase in activities] to excellent [no pain or restriction of activity]) (mean follow-up 49 months).

2.3.2 The Specialist Advisers listed the key efficacy outcomes as pain measured by visual analogue scores for arm and neck pain, disability as measured by the Neck Disability Index, or Oswestry Disability Index and health status as measured by the SF36.

2.4 Safety

2.4.1 The case series of 111 patients treated by percutaneous endoscopic laser cervical discectomy reported that 3% (3/111) of patients needed additional surgery because of incomplete decompression and 'symptom aggravation' (mean follow-up 49 months).

2.4.2 A case series of 41 patients treated by percutaneous endoscopic laser cervical discectomy reported that vessel compromise because of guide wire positioning occurred in 5% (2/41) of patients; this was related to a jugular vein and a carotid artery (follow-up not stated). Discitis developed in 2% (1/41) of patients, leading to disc space collapse, and was treated by vertebral bone fusion (follow-up not stated).

2.4.3 The Specialist Advisers considered the most important theoretical risk to be heat damage to nerve roots or to the spinal cord, potentially leading

to quadriplegia. One Specialist Adviser stated that neurological damage had occurred in a patient as a result of using laser in the lumbar region of the spine.

2.5 Other comments

2.5.1 The Committee noted that the extent to which laser ablation was used instead of, or in addition to, mechanical methods of removing prolapsed disc material was unclear in much of the published evidence.

3 Further information

3.1 This guidance requires that clinicians undertaking the procedure make special arrangements for audit. NICE has identified relevant audit criteria and developed audit support (which is for use at local discretion).

3.2 NICE has published interventional procedures guidance on prosthetic intervertebral disc replacement in the cervical spine.

Information for patients

NICE has produced information on this procedure for patients and carers ('Understanding NICE guidance'). It explains the nature of the procedure and the guidance issued by NICE, and has been written with patient consent in mind.

4 Other NICE recommendations on percutaneous endoscopic laser discectomy

The National Institute for Health and Clinical Excellence (NICE) issued full guidance to the NHS in England, Wales, Scotland and Northern Ireland on percutaneous endoscopic laser thoracic discectomy in June 2004. It was considered for review as part of the Institute's work programme. Although it did not meet the criteria to be re-assessed, percutaneous endoscopic laser cervical discectomy and percutaneous endoscopic laser lumbar discectomy were identified for consideration.

5 About this guidance

NICE interventional procedure guidance makes recommendations on the safety and efficacy of the procedure. It does not cover whether or not the NHS should fund a procedure. Funding decisions are taken by local NHS bodies after considering the clinical effectiveness of the procedure and whether it represents value for money for the NHS. It is for healthcare professionals and people using the NHS in England, Wales, Scotland and Northern Ireland, and is endorsed by Healthcare Improvement Scotland for implementation by NHSScotland.

This guidance was developed using the NICE interventional procedure guidance process.

We have produced a summary of this guidance for patients and carers. Tools to help you put the guidance into practice and information about the evidence it is based on are also available.

Changes since publication

7 January 2012: minor maintenance.

Your responsibility

This guidance represents the views of NICE and was arrived at after careful consideration of the available evidence. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. This guidance does not, however, override the individual responsibility of healthcare professionals to make appropriate decisions in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.

Accreditation