

Percutaneous vertebroplasty

1 Guidance

- 1.1 Current evidence on the safety and efficacy of percutaneous vertebroplasty appears adequate to support the use of the procedure, provided that normal arrangements are in place for consent, audit and clinical governance.
- 1.2 The following are recommended.
 - This procedure should only be undertaken when there are arrangements for good access to a spinal surgery service, and with prior discussion between a specialist multidisciplinary team that includes a radiologist and a spinal surgeon.
 - Clinicians should receive training to reach an appropriate level of expertise before carrying out this procedure. In particular, they must follow the manufacturer's instructions for making the cement, to reduce the risk of embolisation.
 - The procedure should be limited to patients whose pain is refractory to more conservative treatment.

2 The procedure

2.1 Indications

- 2.1.1 Percutaneous vertebroplasty may be used to provide pain relief for people with severe painful osteoporosis with loss of height and/or compression fractures of the vertebral body, and also for people with symptomatic vertebral haemangioma and painful vertebral body tumours (metastases or myeloma).

- 2.1.2 Vertebral compression fractures are a common cause of pain and disability. Osteopenia, associated with ageing or chronic steroid use, and metastatic disease are the most common causes of vertebral compression fractures. Nearly all people experience pain. Most people are treated conservatively with analgesics, bed rest and bracing, but a small percentage are left with persistent pain and limited mobility.

2.2 Outline of the procedure

- 2.2.1 Percutaneous vertebroplasty is the injection of bone cement into the vertebral body to relieve pain, and to stabilise the fractured vertebrae.

2.3 Efficacy

- 2.3.1 The evidence reviewed indicated some level of pain relief in 58–97% of patients, with an associated reduction in medication usage in 50–91% of patients. One study indicated that 93% of patients had improved mobility and that 100% of patients were satisfied with the procedure and would have it again.
- 2.3.2 The opinions of the Specialist Advisors were divided about this procedure. Some believed that the procedure was proven to work, with numerous publications proving benefit. They believed that the procedure could have a major impact in the future as the incidence of osteoporotic spinal fractures increases in an ageing population. One Advisor suggested that it is effective in the majority of patients. Other Advisors suggested that the procedure is unnecessary, that the fractures will heal of their own accord, and that the procedure causes further fractures at a higher level of the spine.

Interventional Procedure Guidance 12

This guidance is written in the following context:

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

2.4 Safety

- 2.4.1 Reported complications of this procedure were uncommon. They included damage to neural or other structures by needle misplacement or migration of cement. One study observed cement leakage in up to 27% of patients. However, this event was often without sequelae and required further intervention in only 1% of patients in that study.
- 2.4.2 The Specialist Advisors offered different estimates of risk but stated that the procedure carried a low risk in experienced hands. Some listed paraplegia as a risk (less than 5%), as well as the potential for nerve root damage and infection.

2.5 Other comments

- 2.5.1 The Medicines and Healthcare products Regulatory Agency (MHRA) has recently issued a safety notice on the use of cement in percutaneous vertebroplasty (MDA/2007/088). <http://devices.mhra.gov.uk/>

Andrew Dillon
Chief Executive
September 2003

Information for the Public

NICE has produced information describing its guidance on this procedure for patients, carers and those with a wider interest in healthcare. It explains the nature of the procedure and the decision made, and has been written with patient consent in mind. This information is available from www.nice.org.uk/IPG012publicinfoenglish and bilingually in English and Welsh from www.nice.org.uk/IPG012publicinfowelsh.

Sources of evidence

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

Interventional procedure overview of percutaneous vertebroplasty, December 2003.

Available from: www.nice.org.uk/IP076overview

Ordering information

Copies of this guidance can be obtained from the NHS Response Line by telephoning 0870 1555 455 and quoting reference: N0281. *Information for the Public* can be obtained by quoting reference number N0282 for the English version and N0283 for a version in English and Welsh.

The distribution list for this guidance is available on the NICE website at URL www.nice.org.uk/IPG012distributionlist

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