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NHS
National Institute for Clinical Excellence

Minimally invasive two-incision surgery for total hip replacement

1 Guidance

1.1 Current evidence on the safety and efficacy of minimally invasive two-incision surgery for total hip replacement does not appear adequate for this procedure to be used without special arrangements for consent and for audit or research. More evidence is required on the long-term safety and efficacy of this procedure and clinicians should submit data to the National Joint Registry (www.njrcentre.org.uk).

1.2 Clinicians wishing to undertake minimally invasive two-incision surgery for total hip replacement should take the following actions.

- 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 the Institute's *Information for the public* is recommended.

1.3 Clinicians should have adequate training before performing this procedure. The British Hip Society has agreed to produce standards for training.

1.4 Further research will be useful. Clinicians are encouraged to enter patients into well-designed randomised controlled trials and to collect longer-term follow-up data. The Institute may review the procedure upon publication of further evidence.

2 The procedure

2.1 Indications

2.1.1 The most common indication for a total hip replacement is degenerative arthritis (osteoarthritis) of the hip joint. Other indications include rheumatoid arthritis, injury, bone tumour and necrosis of the hip bone.

2.1.2 Conservative treatments for arthritis symptoms include medication for pain and inflammation, and physiotherapy. If conservative treatments fail, a hip replacement may be necessary.

2.2 Outline of the procedure

2.2.1 Two small incisions are made: one directly over the femoral neck at the front of the hip, and one at the back in line with the femoral canal. Fluoroscopy may be used to define the femoral neck before the incisions are made and to confirm the position of instruments and prosthesis during the procedure. The muscles are retracted to expose the joint capsule. The capsule is divided and retracted using specially designed illuminated retractors, and a saw is used to remove the femoral head and neck. Specially designed instruments are used to: prepare the socket; position the acetabular prosthesis through the front incision; and to ream the femoral canal before inserting the prosthetic stem through the posterior incision. The prosthetic head is placed on the stem and gently impacted in place, and the incisions are closed.

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2.2.2 This procedure uses the same prosthesis that would be used in a conventional hip replacement, but the minimally invasive two-incision approach aims to cause less trauma to the soft tissue than conventional surgery.

2.3 Efficacy

2.3.1 Results have been published from five centres, describing a total of 517 patients. Efficacy outcomes were poorly reported and focused mainly on the operating time and length of hospital stay, rather than the function of the prosthesis. In four studies, the proportion of patients discharged from hospital within 24 hours of the surgery ranged from 77% (58/75) to 90% (90/100). These data were from the USA, where the median hospital stay following standard total hip replacement was 5 days in one large series dating from 1995 to 1996.

2.3.2 In one study of 142 patients with follow-up between 6 weeks and 2 years, the acetabular component angles were satisfactory in 99% (141/142) of patients. For more details, refer to the Sources of evidence.

2.3.3 The Specialist Advisors stated that there was some uncertainty about the long-term outcomes of this procedure compared with conventional total hip replacement.

2.4 Safety

2.4.1 Femoral fracture was reported as a complication in all five studies, affecting between 1% (1/100) and 4% (5/142) of patients. This fracture rate is similar to that of the conventional total hip replacement, reported as 2% (20/1130) in one UK study. The reported frequencies of other early complications such as dislocation, infection and deep vein thrombosis are also similar for the two approaches. However, the numbers of patients who had undergone minimally invasive two-incision hip replacement were relatively small. For more details, refer to the Sources of evidence.

2.4.2 The Specialist Advisors were concerned about the potential for malposition of the components using the minimally invasive two-incision approach and stressed the importance of training for this technique.

Andrew Dillon
Chief Executive
February 2005

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, in English and Welsh, from www.nice.org.uk/IPG112publicinfo

Sources of evidence

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

Interventional procedures overview of minimally invasive two-incision surgery for total hip replacement, May 2004.

Available from: www.nice.org.uk/IP240overview

Ordering information
Copies of this guidance can be obtained from the Department of Health Publications Order Line by telephoning 0870 1555 455 and quoting reference number N0813. *Information for the public* can be obtained by quoting reference number N0814 for the English version and N0815 for a version in English and Welsh.

The distribution list for this guidance is available at www.nice.org.uk/IPG112distributionlist

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