

# Open femoro–acetabular surgery for hip impingement syndrome

Interventional procedures guidance

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[www.nice.org.uk/guidance/ipg403](http://www.nice.org.uk/guidance/ipg403)

This guidance replaces IPG203.

## 1 Guidance

This document replaces previous guidance on open femoro–acetabular surgery for hip impingement syndrome (interventional procedure guidance 203).

- 1.1 Current evidence on the efficacy of open femoro–acetabular surgery for hip impingement syndrome is adequate in terms of symptom relief in the short and medium term. With regard to safety, there are well recognised complications. Therefore this procedure may be used provided that normal arrangements are in place for clinical governance, consent and audit with local review of outcomes.
- 1.2 The British Hip Society is establishing a register for open

femoro–acetabular surgery for hip impingement syndrome and clinicians should submit details of all patients undergoing this procedure to the register once it is available. One of the main purposes of the register is to provide information about long-term outcomes. It is important that both the register and other studies report details of patient selection to allow clear understanding of these outcomes.

- 1.3 Open femoro–acetabular surgery for hip impingement syndrome involves major surgery with the potential for serious complications and should only be undertaken by surgeons who are well-trained and highly experienced in this type of procedure.

## 2 The procedure

### 2.1 Indications and current treatments

- 2.1.1 Hip or femoro–acetabular impingement results from abnormalities of the femoral head or the acetabulum. It can be caused by jamming of an abnormally shaped femoral head into the acetabulum, or by contact between the acetabular rim and the femoral head–neck junction. It is believed that it may lead to the development of osteoarthritis.
- 2.1.2 Symptoms may include restriction of hip-joint movement, pain and 'clicking' of the hip joint. Symptoms are typically exacerbated by hip flexion or prolonged sitting.
- 2.1.3 The management of hip impingement syndrome includes conservative measures, such as modification of activity and non-steroidal anti-inflammatory medication. Surgical treatment options include arthroscopic hip impingement surgery. Patients with advanced osteoarthritic degeneration may require a total hip replacement.

### 2.2 Outline of the procedure

- 2.2.1 The aim of open femoro–acetabular surgery for hip impingement syndrome is to reduce pain and improve the hip-joint range of movement.

- 2.2.2 The procedure is carried out with the patient under general or regional anaesthesia using an incision on the outer side of the thigh. The hip is dislocated to expose the femoral head and acetabulum, using a method that preserves the blood supply to the femoral head. Non-spherical sections of the femoral head, prominent sections of the anterior femoral neck and excessive acetabular rim are removed. After femoral and acetabular osteoplasty are completed, the hip is relocated, residual impingement is evaluated and further surgery performed as necessary. If impingement is due to a retroverted acetabulum, periacetabular osteotomy may also be performed.

Sections 2.3 and 2.4 describe efficacy and safety outcomes from the published literature that the Committee considered as part of the evidence about this procedure. For more detailed information on the evidence, see the overview, available at [guidance.nice.org.uk/IPG403/Overview\\_Final](https://guidance.nice.org.uk/IPG403/Overview_Final)

## 2.3 Efficacy

- 2.3.1 In a non-randomised controlled study of 52 patients comparing open femoro–acetabular impingement surgery with labral refixation (35 hips) versus open femoro–acetabular impingement surgery with labral resection (25 hips), mean Merle d'Aubigné pain scores improved compared with baseline in both groups, but significantly more so in the refixation group (73%) compared with the resection group (59%) at a median 2-year follow-up (absolute figures not stated,  $p = 0.0009$ ). 'Clinical status' based on mean Merle d'Aubigné score (a scale of 4–18 points; higher score indicates better hip function) improved from 12 at baseline in both groups to 17 and 15 for the refixation versus removal, respectively at 2-year follow-up.
- 2.3.2 A case series of 46 patients (48 hips) reported that group mean Merle d'Aubigné score improved from 13.0 points at baseline to 16.8 points at 38-month follow-up ( $p < 0.001$ ).
- 2.3.3 A case series of 94 patients (96 hips) reported that group mean Harris hip score (0–100 scale; higher scores better) improved from 67 points at baseline to 91 points at a mean 26-month follow-up ( $p < 0.0001$ ).

- 2.3.4 A case series of 34 patients (37 hips) reported that group mean University of California, Los Angeles activity score (1–10 scale; higher scores better) improved from 4.8 points at baseline to 7.5 points at a mean 3.1-year follow-up ( $p < 0.001$ ).
- 2.3.5 The case series of 46 patients reported radiographic restoration of normal hip offset in 100% (46/46) of patients.
- 2.3.6 The Specialist Advisers listed key efficacy outcomes as pain relief and delayed progression to osteoarthritis.

## 2.4 Safety

- 2.4.1 The case series of 213 hips reported no clinical or radiographic evidence of avascular necrosis of the femoral head at a minimum 2-year follow-up. A case series of 94 patients (96 hips) reported no femoral head osteonecrosis at a mean 26-month follow-up.
- 2.4.2 Heterotopic ossification was reported in 37% (79/213) of hips in the case series of 213 hips at a minimum follow-up of 2 years (clinical sequelae not described).
- 2.4.3 Postoperative partial neurapraxia of the sciatic nerve was found in less than 1% (2/213) of hips in a case series of 213 hips (both resolved by 6-month follow-up).
- 2.4.4 Painful internal fixation requiring screw removal occurred in 26% (9/34) of patients in the case series of 34 patients at a mean follow-up of 8 months.
- 2.4.5 In the case series of 22 patients (29 hips) subsequent surgery was required in 12% (3/26) of hips, 1 procedure each for postoperative loss of reduction, correction of posteroinferior impingement, and recurrent anterior impingement (timing of events not stated).
- 2.4.6 The Specialist Advisers listed adverse events known from reports or experience to include vascular insult to the femoral head causing necrosis (rare but serious), fracture, non-union of trochanteric fragment,

trochanteric bursitis, nerve injury, infection, deep vein thrombosis and accelerated osteoarthritis. They considered theoretical adverse events to include postoperative dislocation, haemorrhage and haematoma.

## 3 Further information

3.1 For related NICE guidance see [www.nice.org.uk](http://www.nice.org.uk)

### 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. See [www.nice.org.uk/guidance/IPG403/publicinfo](http://www.nice.org.uk/guidance/IPG403/publicinfo)

### Changes after publication

**August 2013:** Minor maintenance

### Endorsing organisation

This guidance has been endorsed by [Healthcare Improvement Scotland](#).

### Accreditation

