

Minimally invasive percutaneous surgical techniques with internal fixation for correcting hallux valgus

Interventional procedures guidance

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www.nice.org.uk/guidance/ipg789

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.

This guidance replaces IPG332.

1 Recommendations

- 1.1 Use minimally invasive percutaneous surgical techniques with internal fixation as an option for correcting hallux valgus with standard arrangements in place for clinical governance, consent and audit.
- 1.2 These challenging techniques should only be done by a clinician with specific training and specialist experience in the procedure techniques.
- 1.3 Clinicians should enter details about everyone having these procedures onto a registry, which could include the BOFAS registry. This should include:
 - details of patient selection
 - the technique used
 - the type of implant used
 - short and longer-term patient-reported outcomes.

Why the committee made these recommendations

Evidence from a mixture of studies on a wide variety of techniques suggests that minimally invasive techniques work as well as standard open surgical techniques. Evidence also

suggests that patient-reported outcomes, such as pain and recovery time, are the same as for open surgical techniques. There is no robust evidence that one type of minimally invasive technique works better than another. There are no major safety concerns.

2 The condition, current treatments and procedure

The condition

- 2.1 Hallux valgus (HV) is more commonly known as a bunion. The big toe is deviated towards the other toes resulting in a bony protrusion. This deviation occurs at the first metatarsal phalangeal joint. The small sesamoid bones found beneath the first metatarsal also become displaced as the first metatarsal bone drifts away from its normal position, weakening the big toe. Symptoms include damage to the skin over the bunion, pain and weakness of the forefoot when walking, cosmetic concerns, and difficulty with footwear.
- 2.2 In a small number of people, bunion development is associated with underlying genetic conditions affecting the structure of the foot (such as ligamentous laxity syndromes and certain neurological conditions). But in most people the aetiology is not clear. Chronic trivial injury to the joint (for example, caused by some types of footwear) may be the cause. The condition is most common in women and in middle and later life.

Current treatments

- 2.3 Current treatment options include exercises, orthoses (devices to support and align the foot), spacers between the toes to keep them in the correct position, shoe alterations and analgesics to relieve symptoms. Open surgery is considered as standard care when conservative treatments have failed, and severe pain and deformity cause functional impairment. Many different surgical operations are used for treating HV, depending on the nature and extent of the deformity. One commonly used open surgical procedure is distal first metatarsal osteotomy, which divides and repositions the bone of the big toe near to the joint to correct

the deformity.

The procedure

- 2.4 Surgical correction of HV using minimally invasive percutaneous surgical techniques with internal fixation is done as a day case under local or general anaesthesia and in supine position. Low-dose X-ray monitoring or endoscopic images are used. One or more small incisions are made close to the hallux metatarsophalangeal joint of the affected toe. The bunion is then removed and the metatarsal is divided surgically (osteotomy). Motorised high torque low speed burrs and surgical jigs aid the complex reduction and fixation steps of the procedure and implant insertion. Temporary wires may be used to toggle the separated parts of the divided bone into the desired position. The bone fragments are then stabilised using plates, specialised screws, or wires. The temporary wires used for toggling pieces of bone are removed. The small incisions are closed and a dressing is applied. After surgery, a dressing or plaster may be used to support the foot in the corrected position until the divided bone heals. People are usually allowed to put weight on the foot immediately.
- 2.5 The proposed advantages of a percutaneous surgical approach (minimally invasive techniques) are shorter operation time, quicker recovery, less pain, fewer complications, shorter hospital stay, earlier weight bearing and smaller scars.

3 Committee considerations

The evidence

- 3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 11 sources, which was discussed by the committee. The evidence included 2 systematic reviews and meta-analyses, 3 randomised controlled trials, 3 retrospective cohort studies (1 with propensity score matching) and 3 case series. It is presented in the [summary of key evidence](#)

[section in the interventional procedures overview](#). Other relevant literature is listed in table 5 of the overview.

- 3.2 The professional experts and the committee considered the key efficacy outcomes to be: patient-reported outcome measures such as reduction in pain, improvement in function, quality of life and patient satisfaction; hallux joint angle correction and maintenance or reduction in deformity; and recurrence rate.
- 3.3 The professional experts and the committee considered the key safety outcomes to be: pain, skin irritation, infection, non-union, need for screw removal, reoperation and amputation.
- 3.4 One commentary from a person who has had this procedure was discussed by the committee.

Committee comments

- 3.5 Despite minimally invasive surgery, there is no evidence that osteotomy heals more quickly than standard open surgical procedures.
- 3.6 Although the surgery is minimally invasive, pain in recovery did not appear to be different in the longer term compared with open surgical procedures.
- 3.7 People having the procedure should be informed about the potential for implant removal and recovery time.

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Endorsing organisation

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