

Computed tomography-guided thermocoagulation of osteoid osteoma

1 Guidance

1.1 Current evidence on the safety and efficacy of computed tomography (CT)-guided thermocoagulation of osteoid osteoma appears adequate to support its use, provided that the normal arrangements are in place for consent, audit and clinical governance.

2 The procedure

2.1 Indications

- 2.1.1 Osteoid osteomas are benign, bone-forming tumours that occur most frequently in the legs, especially in the femur and tibia.
- 2.1.2 Almost all patients have pain as a result of the tumour. Other symptoms include growth disturbances, bony deformity, scoliosis and, if located within a joint, swelling, synovitis, restricted movement and contracture. This condition may regress spontaneously, but the resolution of symptoms is unpredictable and may take months or years.
- 2.1.3 Standard treatment initially focuses on pain management using non-steroidal anti-inflammatory drugs. Patients who continue to have pain or who experience other tumour-related complications are offered surgical excision. Surgery requires a hospital stay of several days and the patient cannot undertake weight-bearing activity for a substantial period of time. Aggressive resection carries the risk of postoperative fracture, infection and haematoma.

2.1.4 In recent years several minimally invasive techniques using imaging, such as percutaneous resection and radiofrequency ablation, have been introduced in patients with osteoid osteoma in order to achieve removal or destruction of the tumour without the subsequent morbidity of standard surgical treatment.

2.2 Outline of the procedure

2.2.1 In this procedure, the lesion is located using computed tomography (CT). Under general anaesthetic, an entry hole is created through the bone using a fine drill. A radiofrequency electrode probe is introduced into the centre of the osteoma and heated. The electrode is then removed and a CT scan is done later to assess the outcome of the procedure.

2.3 Efficacy

- 2.3.1 Resolution of pain was the main outcome reported in the studies. In a case series of 97 consecutive patients with a mean follow up of 41 months, 76% (74/97) of patients reported a good response after one treatment session and 92% (89/97) reported a good response after one or two sessions. In the smaller studies, resolution of symptoms was reported by 82–95% of patients at final follow up. For more details, refer to the Sources of evidence (see below).
- 2.3.2 The Specialist Advisors considered that this was an established procedure with no concerns or uncertainties about its efficacy. One Advisor stated that the procedure was better than open surgery as there is less risk of recurrence.

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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 Few complications were observed in the studies. Five out of 239 patients (2%) experienced complications, including three who experienced superficial burns. For more details, refer to the Sources of evidence (see below).
- 2.4.2 The Specialist Advisors noted transient pain as the most common complication of the procedure. Infection was also listed, but described as a rare adverse event. It was noted that if the tumour is in a difficult area, adjacent structures may be at risk from inappropriate positioning of the electrode, but Advisors commented that the procedure is still safer than surgery in similar situations.

2.5 Other comments

- 2.5.1 Particular care is required in selecting and treating patients with osteoid osteoma in the spine because of the proximity of nerve roots and the potential risk of neurological complications.

Andrew Dillon
Chief Executive
March 2004

Information for the Public

The Institute 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/IPG053publicinfo.

Sources of evidence

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

Interventional procedure overview of CT-guided thermocoagulation of osteoid osteoma, May 2003.

Available from: www.nice.org.uk/IP221overview

Ordering information

Copies of this guidance can be obtained from the NHS Response Line by telephoning 0870 1555 455 and quoting reference number N0502. *Information for the Public* can be obtained by quoting reference number N0503 for the English version and N0504 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/IPG053distributionlist

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