

Thoracoscopic excision of mediastinal parathyroid tumours

Interventional procedures guidance

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www.nice.org.uk/guidance/ipg247

1 Guidance

- 1.1 There is limited evidence to support the efficacy of thoracoscopic excision of mediastinal parathyroid tumours. The evidence on safety is also very limited in quantity, and in view of potential complications of the procedure it should only be used with special arrangements for clinical governance, consent, audit and research.
- 1.2 Clinicians wishing to undertake thoracoscopic excision of mediastinal parathyroid tumours should take the following actions.
 - Inform the clinical governance leads in their Trusts.

- Ensure that patients understand the potential complications of the procedure and provide them with clear written information. In addition, use of the Institute's [information for patients](#) ('Understanding NICE guidance') is recommended.
 - Audit and review clinical outcomes of all patients having thoracoscopic excision of mediastinal parathyroid tumours (see section 3.1). It is recommended that clinicians undertaking this procedure should collaborate in the collection and review of data.
- 1.3 Patient selection for thoracoscopic excision of mediastinal parathyroid tumours should be carried out in specialist units and in the context of a multidisciplinary team that includes a thoracic surgeon experienced in thoracoscopic techniques. Preoperative imaging should always be undertaken to confirm the location of the mediastinal tumour.

2 The procedure

2.1 Indications

- 2.1.1 There are usually four parathyroid glands situated in the neck, but in about 10% of people one or more of the glands are located in the mediastinum. Parathyroid tumours (most commonly benign adenomas) can develop in any of these glands.
- 2.1.2 Parathyroid adenomas are a cause of primary hyperparathyroidism, characterised by the excessive production of parathyroid hormone, which results in high blood calcium levels. Symptoms and signs include tiredness, depression, confusion, constipation, polydipsia, polyuria, the development of kidney stones, bone pain and fractures.
- 2.1.3 The management of hyperparathyroidism may include dietary modification and the use of parathyroid hormone inhibitors. Surgical treatment may be required for some patients.
- 2.1.4 Parathyroid tumours situated in the neck can be removed surgically, usually through a cervical incision; however, tumours located in the

mediastinum require a thoracotomy. Mediastinal parathyroid adenomas may also be treated by angiographic ablation or by computed tomography (CT)-guided ethanol ablation. Thoracoscopic excision of mediastinal parathyroid adenoma aims to reduce the morbidity and potential complications that may be associated with open procedures.

2.2 Outline of the procedure

2.2.1 The location of the tumour is determined by imaging (for example CT, ultrasound or scintigraphy). Under general anaesthesia, a number of ports are placed in the intercostal spaces for the thoracoscope and instruments. One lung may be deflated to aid visualisation. The ectopic parathyroid gland is identified and dissected while keeping its capsule intact. The vascular pedicle is clipped and the gland is removed through one of the ports. A chest drain may be inserted. The ports are closed and the lung is inflated if necessary.

2.3 Efficacy

2.3.1 In three case series and five case reports, successful excision without conversion to open surgery was achieved in 100% (7/7, 4/4, 4/4, 3/3, 2/2, 1/1, 1/1, 1/1) of patients.

2.3.2 In one case series of four patients, the case report of two patients, and all three case reports of one patient, serum calcium levels were normalised in all patients shortly after thoracoscopic excision of mediastinal parathyroid adenoma. In the first single case report, a normalised serum calcium level (2.5 mmol/l) was maintained at 3-year follow-up. For more details, refer to the 'Sources of evidence' section.

2.3.3 The Specialist Advisers listed key efficacy outcomes as improvement in serum calcium and parathyroid hormone levels, histological confirmation of parathyroidectomy and low rate of conversion to open surgery.

2.4 Safety

2.4.1 One case report described a small apical pneumothorax following the

procedure, which had resolved at 2-week follow-up.

- 2.4.2 A case series of three patients reported transient hoarseness in one patient, which was presumed to have resulted from damage to the left recurrent laryngeal nerve. For more details, refer to the 'Sources of evidence' section.
- 2.4.3 The Specialist Advisers stated that anecdotal and theoretical complications include bleeding, infection, chest wall pain, arrhythmias and catastrophic damage to the mediastinal contents, including the great veins and major arteries.

2.5 Other comments

- 2.5.1 It was noted that suspicion of parathyroid malignancy may influence the choice of surgical technique used.

3 Further information

- 3.1 This guidance requires that clinicians undertaking the procedure make special arrangements for audit. The Institute has identified relevant audit criteria and developed an [audit tool](#) (which is for use at local discretion).
- 3.2 The Institute has produced technology appraisals guidance on [cinacalcet for the treatment of secondary hyperparathyroidism in patients with end-stage renal disease on maintenance dialysis therapy](#).

Andrew Dillon
Chief Executive
December 2007

Sources of evidence

The following document, which summarises the evidence, was considered by the Interventional Procedures Advisory Committee when making its provisional recommendations.

'Interventional procedure overview of thoracoscopic excision of mediastinal parathyroid tumours', June 2007.

Information for patients

NICE has produced [information describing its guidance on this procedure for patients and their carers](#) ('Understanding NICE guidance'). It explains the nature of the procedure and the decision made, and has been written with patient consent in mind.

4 Changes since publication

The guidance was considered for reassessment in January 2011 and it was concluded that NICE will not be updating this guidance at this stage. However, if you believe there is new evidence which should warrant a review of our guidance, please [contact us](#).

14 January 2012: minor maintenance.

5 About this guidance

NICE interventional procedure guidance makes recommendations on the safety and efficacy of the procedure. It does not cover whether or not the NHS should fund a procedure. Funding decisions are taken by local NHS bodies after considering the clinical effectiveness of the procedure and whether it represents value for money for the NHS. It is for healthcare professionals and people using the NHS in England, Wales, Scotland and Northern Ireland, and is endorsed by Healthcare Improvement Scotland for implementation by NHSScotland.

This guidance was developed using the NICE [interventional procedure guidance](#) process.

We have produced a [summary of this guidance for patients and carers](#). Tools to help you put the guidance into practice and information about the evidence it is based on are also [available](#).

Your responsibility

This guidance represents the views of NICE and was arrived at after careful consideration

of the available evidence. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. This guidance does not, however, override the individual responsibility of healthcare professionals to make appropriate decisions in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

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Endorsing organisation

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