

Suction diathermy adenoidectomy

Interventional procedures guidance
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www.nice.org.uk/guidance/ipg328

1 Guidance

- 1.1 Current evidence on the safety and efficacy of suction diathermy adenoidectomy is adequate to support the use of this procedure provided that normal arrangements are in place for clinical governance, consent and audit.
- 1.2 This procedure should be carried out only by surgeons with specific training in the use of diathermy for adenoidectomy because thermal damage to surrounding tissues can, rarely, cause Grisel's syndrome (subluxation of the atlantoaxial joint).

2 The procedure

2.1 Indications and current treatments

- 2.1.1 Adenoidectomy is usually carried out in children, for conditions including nasal obstruction, recurrent otitis media with effusion and obstructive sleep apnoea. Depending on the indication, it is often combined with tonsillectomy and/or grommet insertion.
- 2.1.2 Traditional adenoidectomy is carried out by 'cold' curettage. A potential problem with this technique is persistent bleeding, which may require control by electrocautery or packing of the nasopharynx.

2.2 Outline of the procedure

- 2.2.1 Suction diathermy adenoidectomy (also known as suction electrocautery or suction coagulation) aims to remove the adenoids while minimising intraoperative blood loss and risk of secondary haemorrhage. It involves the use of heat generated by an electric current to ablate or liquefy adenoid tissue, which is then removed using suction.
- 2.2.2 The procedure is performed with the patient under general anaesthesia. Direct (using a mirror) or endoscopic visualisation is used. A suction diathermy probe (coagulator) is passed into the mouth and applied to the adenoid tissue in the nasopharynx, to liquefy and remove it. The procedure is considered to be complete when the choanae are clearly visible and the nasopharynx has a smooth contour.
- 2.2.3 Several different devices are available for this procedure, which may require different diathermy settings to minimise the risk of heat damage.

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](#).

2.3 Efficacy

- 2.3.1 A meta-analysis of 2252 patients reported a subjective success rate (definition varied for each study) for 1812 patients treated by suction diathermy across 6 studies of 95% (1721/1812; 95% confidence interval [CI] 92.7 to 97.3; $p < 0.001$).
- 2.3.2 A randomised controlled trial of 100 patients treated by suction diathermy or by curettage reported that suction diathermy-treated patients had significantly fewer Wormald and Prescott grade 3 remnant adenoids than patients treated by curettage at 6-month follow-up ($p = 0.0184$) (scale ranges from grade 1 [less than one third of the posterior choanae are obstructed] to grade 3 [more than two thirds of the posterior choanae are obstructed]).
- 2.3.3 A prospective audit of 126 patients treated by suction diathermy or by curettage used a scale from 0 (best) to 6 (worst) to measure nasal obstruction, loudness and frequency of snoring, duration of coloured rhinorrhoea and presence of irregular sleep patterns. It reported significantly lower mean postoperative symptom scores after both treatments (0.4 and 0.7, respectively) compared with mean preoperative scores (3.3 and 3.0, respectively) ($p < 0.001$ for both groups). No significant difference in mean symptom score change from baseline was reported between the 2 treatment groups (absolute figures not stated) ($p = 0.07$).
- 2.3.4 The Specialist Advisers listed key efficacy outcomes as reduced blood loss (especially important in small children), completeness of adenoidectomy and relief of symptoms (for example, infection and obstructive sleep apnoea).

2.4 Safety

- 2.4.1 In the meta-analysis of 2522 patients treated by suction diathermy or curettage, mean intraoperative blood loss was 4.31 ml (95% CI 0.4 to 8.2; $p = 0.03$; 5 studies, $n = 359$) and 24.00 ml (95% CI 0 to 48.3; $p = 0.052$; 3 studies, $n = 139$), respectively.

- 2.4.2 A non-randomised controlled trial of 149 patients reported no (0/77) postoperative bleeding episodes in patients treated by suction diathermy compared with 10% (7/72) in those treated by curettage ($p < 0.001$). In the prospective audit of 126 patients, secondary bleeds (defined in the paper as pink-stained nasal discharge) were reported in 4% (3/68) of patients treated by suction diathermy and in 2% (1/58) of those treated by curettage (no intervention required).
- 2.4.3 Postoperative neck stiffness was reported in a non-randomised controlled trial of 276 patients treated by suction diathermy, curettage, or microdebrider adenoidectomy to have occurred in 9% (8/93), 10% (8/84) and 17% (17/99) of patients, respectively ($p = 0.08$, not stated if 'overall' or pair-wise comparison).
- 2.4.4 Grisel's syndrome was reported in 1 patient in the retrospective study of 1206 patients and 1 patient in a case report. One of these patients had torticollis and type I atlantoaxial subluxation which resolved in 3 weeks and the other patient had a reduced range of neck movement at 9-month follow-up. Retropharyngeal fluid collection resulting in neck stiffness and low-grade fever was reported in 1 patient in the retrospective study of 1206 patients.
- 2.4.5 Cervical osteomyelitis was reported in 1 patient after suction electrocautery, in a case report: this resolved completely after 4 weeks of medical therapy.
- 2.4.6 Velopharyngeal insufficiency (improper closing of the soft palate against the posterior pharyngeal wall during speech and swallowing) was reported in 16 patients in the case series of 1206 patients: this resolved within 6 months in all but 1 patient, in whom it persisted for more than 2 years. The prospective audit reported that 4% (3/68) of patients treated by suction diathermy had transient velopharyngeal insufficiency compared with 7% (4/58) of patients treated by curettage: it resolved in all 7 patients within 2–4 weeks.
- 2.4.7 The Specialist Advisers considered theoretical adverse events to include Grisel's syndrome, thermal damage or burns to the nasopharynx and surrounding structures from diathermy, scarring and infection.

3 Further information

3.1 For related NICE guidance see our [website](#).

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.

4 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](#). Information about the evidence it is based on is also [available](#).

Changes since publication

5 January 2012: minor maintenance.

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](#).

Accreditation

