

Powered microdebrider turbinoplasty for inferior turbinate hypertrophy

Interventional procedures guidance

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www.nice.org.uk/guidance/ipg498

1 Recommendations

- 1.1 Current evidence on the efficacy and safety of powered microdebrider turbinoplasty for inferior turbinate hypertrophy is adequate to support the use of this procedure with normal arrangements for clinical governance, consent and audit or research.

2 Indications and current treatments

- 2.1 Inferior turbinates are ridges inside the nose, covered by mucous membrane, which increase the surface area within the nose and help to filter and humidify inspired air. Inflammation of the mucous membrane (rhinitis) can cause inferior turbinates to swell (turbinate hypertrophy). This narrows the nasal passage, and may cause complete nasal obstruction. Symptoms include breathing difficulties, excessive mucous

secretion (rhinorrhoea), postnasal drip, facial discomfort or pain and mid-facial headaches.

- 2.2 Treatment options depend on the duration and severity of turbinate hypertrophy. Medical treatments include corticosteroid injections, nasal corticosteroid sprays and decongestants. Surgical treatments include radiofrequency-assisted turbinoplasty and laser-assisted turbinoplasty. These procedures are reserved for symptomatic patients with persistent hypertrophy of the turbinates who have had no response to medical management, or for whom medical management is contraindicated.

3 The procedure

- 3.1 Powered microdebrider turbinoplasty aims to reduce the size of inferior turbinates that are swollen due to vasomotor or allergic rhinitis. It removes submucosal vascular stromal tissue, while preserving overlying respiratory mucosa, using a cutting tool with irrigation and suction functions (microdebrider).
- 3.2 Powered microdebrider turbinoplasty is usually performed with the patient under local anaesthesia. Under direct vision, a microdebrider is inserted through the nostril and into the anterior face of the inferior turbinate, just medial to the mucocutaneous junction. The microdebrider is advanced until it pierces the mucosa. A submucosal pocket is then made by sweeping the microdebrider in anterior-to-posterior and superior-to-inferior directions. Stromal tissue is then removed using irrigation and suction.

4 Efficacy

This section describes efficacy 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 [interventional procedure overview](#).

- 4.1 In a randomised controlled trial of 120 patients treated by powered microdebrider or radiofrequency-assisted turbinoplasty, mean visual analogue scale scores (ranging from 1 to 10, with lower scores indicating

better outcomes) for nasal obstruction, sneezing, rhinorrhoea and snoring improved from 8.7 to 1.4, 6.2 to 1.7, 7.0 to 1.6 and from 6.6 to 1.6 respectively in the microdebrider group at 6-month follow-up (p values <0.05). In the radiofrequency group, mean visual analogue scale scores for nasal obstruction, sneezing, rhinorrhoea and snoring improved from 8.5 to 1.5, 6.0 to 1.8, 6.6 to 1.7 and from 6.7 to 1.6 respectively at 6-month follow-up (p values <0.05). No statistically significant differences in visual analogue scale scores were observed between the 2 treatments at 6-month follow-up. At 3-year follow-up, mean visual analogue scale scores for nasal obstruction, sneezing, rhinorrhoea and snoring were better in the microdebrider group (1.6, 1.9, 1.7 and 1.8 respectively) than in the radiofrequency group (8.3, 5.6, 6.5, and 6.2 respectively). All inter-group comparison p values were less than 0.05.

4.2 In a randomised controlled trial of 160 patients treated by powered microdebrider turbinoplasty or submucosal resection of the inferior turbinate, mean visual analogue scale scores (ranging from 1 to 10, with lower scores indicating better outcomes) for nasal obstruction, sneezing, rhinorrhoea and snoring improved from 8.7 to 1.5, 6.2 to 1.8, 7.0 to 1.6 and from 6.7 to 1.5 respectively in the microdebrider group at 2-year follow-up (p values <0.0001). In the submucosal resection group, mean visual analogue scale scores for nasal obstruction, sneezing, rhinorrhoea and snoring improved from 8.5 to 1.5, 6.0 to 1.8, 6.7 to 1.7 and from 6.6 to 1.6 respectively at 2-year follow-up (p values <0.05); no statistically significant differences were observed between groups at 2-year follow-up. At 3-year follow-up, mean visual analogue scale scores for nasal obstruction, sneezing, rhinorrhoea and snoring were 1.5, 1.8, 1.6 and 1.6 respectively in the microdebrider group and 1.5, 1.9, 1.7, and 1.6 respectively in the submucosal resection group (there were no statistically significant differences between groups).

4.3 In the randomised controlled trial of 120 patients treated by powered microdebrider or radiofrequency-assisted turbinoplasty, mean total nasal resistance (using 75 Pa as the reference point) improved from 0.32 to 0.15 Pa/ml/s (p<0.05) and from 0.31 to 0.15 Pa/ml/s (p<0.05) respectively at 6-month follow-up (there was no statistically significant difference between groups). At 3-year follow-up, mean total nasal

resistance in the microdebrider and radiofrequency-assisted turbinoplasty groups were 0.16 and 0.31 Pa/ml/s respectively ($p < 0.05$).

- 4.4 In a randomised controlled trial of 40 patients treated by powered microdebrider or laser-assisted turbinoplasty, nasal cavity volumes increased from 8.5 to 13.3 cm³ ($p < 0.05$) and from 8.3 to 13.2 cm³ ($p < 0.05$) respectively at 6-month follow-up (there was no statistically significant difference between groups).
- 4.5 Specialist advisers listed subjective and objective improvements in the nasal airway as key efficacy outcomes.

5 Safety

This section describes 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 [interventional procedure overview](#).

- 5.1 Postoperative bleeding was reported in 27% (8/30) of patients after powered microdebrider turbinoplasty in a randomised controlled trial of 60 patients treated by powered microdebrider or radiofrequency-assisted turbinoplasty. No further details were provided on the timing, duration or severity of bleeding.
- 5.2 Postnasal drip was reported in 10% (3/30) of patients after powered microdebrider turbinoplasty in the randomised controlled trial of 60 patients treated by powered microdebrider or radiofrequency-assisted turbinoplasty.
- 5.3 Nasal crusting was reported in 12% (7/60) of patients after powered microdebrider turbinoplasty in a randomised controlled trial of 120 patients treated by powered microdebrider or radiofrequency-assisted turbinoplasty.
- 5.4 Nasal dryness was reported in 3% (2/80) of patients after powered microdebrider turbinoplasty in a randomised controlled trial of 160 patients treated by powered microdebrider turbinoplasty or submucosal resection of the inferior turbinates.

- 5.5 Specialist advisers stated that some patients experience 'empty nose syndrome' including dryness, crusting and a paradoxical sense of nasal obstruction caused by some loss of sensation.

6 Further information

- 6.1 For related NICE guidance see the [NICE website](#).

Information for patients

NICE has produced [information on this procedure for patients and carers](#). It explains the nature of the procedure and the guidance issued by NICE, and has been written with patient consent in mind.

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Endorsing organisation

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

Accreditation

