Endoscopic Inferior Turbinectomy

Nasal obstruction, for the Rhinology clinic, is a frequently presented symptom and has been shown to adversely affect patients’ quality of life. It is a troublesome problem for the surgeon as well as the patient. There are a number of possible anatomical causes for this symptom: enlarged inferior turbinates, deviated nasal septum, and a narrow internal nasal valve area are the most frequent. Here we aim to present a summary of endoscopic inferior turbinectomy by discussing both the anatomy and physiology, and also the pathophysiology of this technique. We then move on to the pre-op assessment, technique and post-op treatment.

Inferior turbinate enlargement can be secondary to mucosal hypertrophy or bony hypertrophy – or both. If the bone is involved then it causes a permanent obstruction while there will be fluctuation in nasal obstruction in mucosal hypertrophy. Conservational treatment in the form of steroids, antihistamines and decongestants are usually successful, however some patients are refractory to medical therapy.

Reduction of the inferior turbinates has been performed for more than 100 years. The aim of surgery is to correct the anatomical abnormality and consequently improve nasal obstruction and restore normal breathing and drainage. In addition, this also potentiates the medical management of rhinitis, by improvement of delivery of the topical medications potentiates the medical management of rhinitis, by improving delivery of the topical medications.

Pathophysiology

The internal nasal valve area is bounded by septum medially and laterally by the caudal edge of the upper lateral cartilage. The anterior end of the inferior turbinate lies in the internal nasal valve area and any degree of hypertrophy affecting it greatly increases the airflow resistance and consequently causes nasal obstruction. Studies have shown that mucosal swelling is not solely responsible for nasal obstruction in enlargements of the inferior turbinate. Bony hypertrophy plays a large role and this supports trimming as the treatment of choice.

Pre-op assessment

A detailed history is taken and a thorough ENT examination is performed: anterior rhinoscopy as well as rigid nasendoscopy is mandatory.

A computed tomography (CT) scan can be done in selected cases to find out the state of paranasal sinuses.

Technique

Local anaesthetics may be suitable for minor procedures to the turbinates, but trimming of the turbinates requires a full general anaesthetic. The anaesthetist should pay particular attention to protection of the airway from blood, using either an oro-tracheal tube with pharyngeal packing or a laryngeal mask.

The patient is prepared for a standard endonasal procedure using the following preparations. On the ward 30 minutes pre-operatively the patient’s nose is packed loosely with ribbon guaze (impregnated with lidocaine hydrochloride 5% with phenylephrine hydrochloride 0.5%). After induction of anaesthesia, xylometazoline 0.1% (octrine) is poured into both nares. Finally the inferior turbinates are infiltrated...
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**how i do it**

with 1:80,000 adrenaline with 2% lidocaine hydrochloride (Lignospan Special) to the anterior and middle thirds.

An initial assessment of the nasal anatomy is carried out using the 0° 4mm nasal endoscope. Once the diagnosis has been confirmed and other nasal pathology excluded, the inferior turbinate is in-fractured using a Hill’s elevator. This allows easier access to the lateral aspect or the inferior meatus. At this stage some surgeons use a straight artery clip, placed along the length of the inferior turbinate to crush the hypertrophied and vascular mucosa – but the authors feel this is unnecessary if the nose is adequately prepared.

Turbinectomy scissors are then used to cut along the turbinate, from anterior to posterior, staying as near the lateral nasal wall as possible. The small posterior remnant of the turbinate is left in place. The excised turbinate is then removed using forceps. The suction diathermy (see above) is then introduced, with the distal end bent at an angle of around 15°. With adequate suction, the whole length of the turbinate is cauterised until haemostasis is achieved. The contralateral side is then completed in the same way and Nasepton cream is applied to the turbinate stump.

The major potential complication is primary haemorrhage. Dryness, crusting, synaechiae formation, excessive secretions, foul discharge, bone exposure, osteitis, empty nose syndrome (atrophic rhinitis) and epiphora are also recognised complications. Rare neurological sequelae include greater palatine nerve dehiscence and partial oculomotor and trigeminal nerve palsy.

Confining the trimming to the anterior and middle parts of the inferior turbinate offers the advantage of lower incidence of haemorrhage.

**Post-op period**

There is no requirement for routine post-operative nasal packing. The patient is discharged the following day on regular saline douches, Xylometazoline 0.1% for one week and oral analgesia. The patient is reviewed after two weeks to remove the crusting and at further two-weekly intervals until the crusting is minimal.

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**Our experience**

The senior author has performed 142 procedures between April 2003 and June 2007. Two patients developed secondary bleeding that settled with conservative management. There are no reports of cases of atrophic rhinitis documented in these patients.

**References**