Endoscopic sinus surgery for nasal polyps

Systematic review of endoscopic sinus surgery for nasal polyps

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Executive summary

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Executive summary

Background

Functional endoscopic sinus surgery (FESS) is a minimally invasive technique that uses an endoscope to improve ventilation and drainage in addition to polyp removal. The extent of surgery varies according to the extent of disease and surgeon's individual practice. This technique has been used for more than a decade in treating sino-nasal conditions. Advantages are claimed over conventional surgery: permitting a better view of the surgical field, a more precise and thorough clearance of the inflammatory change, fewer complications and lower recurrence rates.

Nasal polyp growths are round, soft, semi-translucent, pale or yellow glistening structures that originate from any part of the nasal mucosa or paranasal sinuses (although most commonly from the ethmoid or middle meatus regions). Polyp development has been linked to chronic inflammation, allergy, autonomic nervous system dysfunction and genetic predisposition.

It has been estimated that 0.2–1% of adults in the UK will have nasal polyps at some time during their life. The English Department of Health report that 12,312 patients were admitted to hospital with a primary diagnosis of nasal polyps from 1 April 2000 to 31 March 2001. The frequency of polyps increases with age until 59 years and polyps are more frequent in males than females. Nasal polyps are associated with many different disease states and it is rare to find them alone.

Objectives

To provide a systematic review of the clinical effectiveness of endoscopic sinus surgery (ESS) for the removal of nasal polyps.

Methods

A systematic review of the literature was undertaken. Searches of electronic databases, websites and reference lists were made to identify relevant studies. Comparative studies were included if they were primary research, focused on FESS for the removal of nasal polyps, reported patient relevant outcomes and were published in English. In addition, case series studies were included if they met the above criteria and enrolled more than 50 patients with polyps.

The titles and abstracts of studies, and then full text articles, were screened independently by two reviewers for inclusion. Using a structured form, the quality (internal and external validity) of the included studies was assessed by one reviewer and checked by a second reviewer.

Owing to the lack of homogeneous randomised controlled trials (RCTs) we have not performed meta-analysis. We have, however, provided comparative data where available. The assessment includes all patient-relevant outcome measures reported by the studies.

Results

Thirty-three studies were included, three RCTs, three non-RCTs and 27 case series studies. The RCTs and controlled trials reported overall symptomatic improvement that ranged from 78 to 88% for FESS compared with 43 to 84% for comparative techniques (including polypectomy, Caldwell–Luc and intranasal ethmoidectomy). Disease recurrence was 8% for FESS compared with 14% for Caldwell–Luc and polyp recurrence was 28% for endoscopic ethmoidectomy compared with 35% for polypectomy. Revision surgery was reported in one study only and was the same for FESS and Caldwell–Luc procedures. Percentage of overall complications was reported in only one comparative study and was 1.4% for FESS compared with 0.8% for conventional procedures.

The case series studies reported overall symptomatic improvement for patients with nasal polyps ranging from 37 to 99% (median 89%). For the mixed patient groups (with and without polypoid disease) overall symptomatic improvement ranged from 40 to 98% (median 88%). Total complications in the case series studies ranged from 22.4 to 0.3% (median 6%).

Conclusions

We have identified large amounts of data on FESS. The majority of studies report that people's symptoms improve following FESS with relatively few complications; however, only a small proportion of evidence is comparative. Results from non-comparative studies do not inform the choices that need to be made by ear, nose and throat (ENT) surgeons and commissioners. Health economics data are also lacking and therefore cannot inform these decisions.

FESS may offer some advantages in effectiveness over comparator techniques, but there is enormous variation in the range of results reported and there are severe methodological limitations. There is a clear need for quality-controlled trials in order to answer questions regarding the effectiveness of FESS. We have identified and presented a number of priority research questions from a selection of ENT surgeons within the UK.

Publication

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