

Tonsillectomy for recurrent bacterial tonsillitis

Health Technology Description

Tonsillectomy is surgery to remove the tonsils. It is usually performed as an inpatient procedure under general anaesthetic using cold steel, bipolar diathermy, ultrasound or coblation techniques. Haemostasis is obtained by diathermy alone, both ties and diathermy, ties alone, ultracision or coblation.

The most common indication for tonsillectomy is recurrent bacterial tonsillitis. Other indications which are not the subject of this Evidence Note are cancer, sleep apnoea, quinsy and guttate psoriasis.

Epidemiology

Bacterial tonsillitis is an infection of the tonsils which causes swelling and throat pain, and may result in difficulty swallowing. Some sufferers will consult the GP or take time off sick from school or work. Tonsillitis is not always distinguished from a generalised sore throat. Furthermore, visual examination of the tonsils does not indicate whether the cause of infection is bacterial or viral. A bacterial cause can be ascertained by laboratory testing of a swab; however the time delay in obtaining results prevents this being a useful aid for diagnosis. Internationally, the terminology 'pharyngitis' may be used synonymously with 'tonsillitis' or 'sore throat'.

GP consultations in which a specific diagnosis of bacterial tonsillitis was recorded are estimated at 33550 for Scotland during the year 2005-2006, which is a rate of 6.2 per 1000 population, some of whom will have had more than one GP appointment (Denise Lilly, ISD 18/1/08 personal communication). However, due to the aforementioned difficulty of diagnosis, it is expected that for many cases of bacterial tonsillitis,

Key points

- There is a lack of evidence from well-conducted randomised controlled trials on the clinical effectiveness of tonsillectomy for recurrent bacterial tonsillitis.
- Criteria for tonsillectomy are commonly based on SIGN Guideline 34: sore throats are due to tonsillitis; five or more episodes per year; symptoms for at least a year; episodes prevent normal functioning.
- 6% of patients are readmitted with bleeding; 0.2% of patients return to the operating theatre.
- The North of England study of tonsillectomy and adeno-tonsillectomy in children (NESSTAC) is a major randomised controlled trial which is due to report in 2009.

a less specific illness is recorded. Consultations for any 'sore throat' (including but not limited to bacterial, viral and not otherwise specified tonsillitis) in the same period numbered 313150, which represents a rate of 58.3 per 1000 population (Denise Lilly, ISD 18/1/08 personal communication). Females were more likely to consult the GP with either of these diagnoses than males; and there were more consultations for children than adults.

The number of tonsillectomies performed in Scotland for bacterial tonsillitis in the year 2006-2007 was 3605 (Julie Ferguson, ISD 14/1/08 personal communication). This is a reduction from a level of around 7000 per year in the 1980s and 1990s. About twice as many tonsillectomy operations are performed on females than males. The sex differential is much more pronounced in adults than children.

Clinical Effectiveness

Secondary literature in English was sought to answer the question of whether tonsillectomy is clinically effective in the treatment of recurrent bacterial tonsillitis, in adults and children, compared to any non-surgical treatment such as doing nothing, antibiotics or analgesia. Outcome measures considered were frequency and severity of throat infections and pain, time off work or school, and quality of life.

One systematic review¹, an evidence-based guideline², an HTA structured abstract³ and a randomised controlled trial published after the secondary literature⁴ formed the evidence base for this Evidence Note. Other publications wholly based on one of these sources or using the same primary studies were excluded. A list of included and excluded articles is available from the author.

A Cochrane review of tonsillectomy for chronic/recurrent acute tonsillitis concluded that there was 'no evidence from randomised controlled trials to guide the clinician in formulating the indications for surgery in adults or children'¹. This was based on two (considered flawed) trials from the same research group, in children; and a complete lack of trials in adults.

SIGN Guideline 34 'Management of sore throat and indications for tonsillectomy' commented that 'the literature on surgery for sore throat is scanty, out of date and lacking in scientific validity'². It makes a level C recommendation regarding criteria for tonsillectomy, on which current surgical practice is commonly based. These are:

- sore throats are due to tonsillitis
- five or more episodes per year
- symptoms for at least a year
- episodes prevent normal functioning.

Due to the difficulty in documenting the

frequency of episodes, because the person with tonsillitis will not necessarily consult the GP, and the uncertainty in diagnosis, SIGN recommends a six month period of watchful waiting to establish firmly the pattern of symptoms and allow the patient to consider fully the implications of the operation. Traditionally, this has fitted in well with waiting times, although it does entail a second consultation. However the introduction of the Scottish Government eighteen week target from 2008 will require agreement that the patient is dropped from calculations so that unnecessary surgery is avoided; and understanding between the patient and ENT staff that surgery is not appropriate until this period of watchful waiting has passed.

An HTA from the Catalan Agency noted scarce evidence in favour of tonsillectomy, the unknown optimum timing of the operation, and the need for efficacious antibiotic schedules to be followed in treating the baseline disease³.

A recent randomised controlled trial of tonsillectomy versus watchful waiting in adults concluded that fewer episodes of streptococcal pharyngitis, other throat infections or days with throat pain were seen among those who had had tonsillectomy⁴. However, commentators disputed this conclusion and drew attention to methodological flaws and a lack of applicability to clinical settings^{5,6,7}.

Cost Effectiveness

As the clinical effectiveness of tonsillectomy for recurrent bacterial tonsillitis has not been established, it is not possible to look at cost effectiveness. No relevant economic evaluation (based on or generalisable to UK costs) was identified.

The cost of a single tonsillectomy operation is estimated as £797, giving a total cost to NHS Scotland for the procedure of around £3 million per year⁸. There may be resultant savings in terms of GP visits and antibiotic prescriptions.

Safety

The main harm associated with tonsillectomy is postoperative throat pain. Other risks include those associated with anaesthetic, haemorrhage, sepsis, ear pain, dehydration, dental injuries, soft tissue injuries and burns. Following concerns about a possible risk of vCJD transmission with reusable instruments, Scotland switched to single-use instruments in 2001. Reports of excessive bleeding and one death in England associated with single-use instruments led to the stopping of all routine tonsillectomy in Scotland for 12 weeks, while safety was investigated.

In the year 2006-2007, there were 34 patients (1%) who experienced haemorrhage or haematoma while they were still in hospital (Julie Ferguson, ISD 7/2/08 personal communication). A further 428 (12%) were readmitted within 28 days, including 220 (6%) with haemorrhage or haematoma, and seven (0.2%) who returned to the operating theatre (Julie Ferguson, ISD 7/2/08 personal communication).

Ongoing Research

SIGN Guideline 34: 'The Management of sore throat and indications for tonsillectomy'² is currently undergoing revision (Expected publication date April 2009).

The North of England study of tonsillectomy and adeno-tonsillectomy in children (NESSTAC)⁹ is a randomised controlled trial of surgical intervention vs non-surgical intervention in children under 16 with recurrent sore throat. It will collect data on clinical effectiveness, relative costs and benefits to the NHS and families, outcomes important to children and parents, quality of life, and older children's and parents' preferences. It is led by Professor John Bond, Centre for Health Services Research, Newcastle University (Expected publication date mid 2009).

A prospective audit of tonsil and adenoid surgery with disposable surgical instruments was undertaken in Scotland between 2002 and 2005. The results are due for publication by NHS Quality Improvement Scotland in 2008.

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Equality and Diversity

NHS QIS is committed to equality and diversity in respect of the six equality groups defined by age, disability, gender, race, religion/belief and sexual orientation. We believe, however, that equality and diversity issues are not relevant to the content of Evidence Notes because they summarise published evidence.

Acknowledgements

NHS Quality Improvement Scotland (QIS) would like to acknowledge the helpful contribution of the following, who gave advice on the content of this Evidence Note:

- Aileen White, Clinical Advisor, Consultant ENT surgeon, Royal Alexandra Hospital, NHS Greater Glasgow and Clyde.
- Ann Lees, Proposing planner, Scottish Disinvestment group and NHS Greater Glasgow and Clyde.
- Musheer Hussain, Clinical reviewer, Consultant ENT surgeon, Ninewells Hospital, NHS Tayside.

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