

Does synchronous nasal surgery increase the risk of post-operative haemorrhage in adult patients undergoing tonsillectomy?

D. P. MURRAY, H. EL-HAKIM, F. AHSAN, D. A. NUNEZ

Abstract

Otolaryngologists occasionally perform simultaneous procedures on their patients, the indication being co-existent pathology. This is not a universally accepted practice as some feel that the post-operative morbidity is increased in such patients.

Tonsillectomy is a common otolaryngological procedure and the main life-threatening complication, haemorrhage is easily identifiable. This study compares the incidence of post-operative haemorrhage requiring admission in patients undergoing tonsillectomy alone with that in patients undergoing tonsillectomy and nasal surgery.

A retrospective study was undertaken of all adult patients undergoing tonsillectomy alone or tonsillectomy and synchronous nasal surgery in Aberdeen Royal Infirmary.

Seventy-one patients (34 male) with a mean age of 23 years underwent tonsillectomy and synchronous nasal surgery over a nine-year period 1991–1999. The commonest nasal procedure was reduction of the inferior turbinates (in 48 cases). Three hundred and ninety-eight patients (131 male) with a mean age of 23 years underwent tonsillectomy alone over a nine-month period, July 1998 to April 1999.

The incidence of post-tonsillectomy haemorrhage in the synchronous nasal surgery group was 12.7 per cent (9 out of 71) compared with four per cent (16 out of 398) in the tonsillectomy alone group ($p < 0.01$, Chi-squared test). There was no difference in hospital stay between the two groups (mean two days).

Synchronous nasal surgery increases the incidence of post-tonsillectomy haemorrhage.

Key words: Tonsillectomy; Haemorrhage; Nose; Surgery

Introduction

Nasal pathology is very common in the community and otolaryngologists operate on the nose and paranasal sinuses for a multitude of symptoms ranging from snoring to facial pain. Tonsillectomy for recurrent tonsillitis or obstructive airway symptoms is one of the most commonly performed ENT operations. It is not surprising therefore that there is a group of patients with dual pathology who require both a tonsillectomy plus a nasal procedure. Surgeons differ in opinion on whether or not nasal surgery should be performed under the same anaesthetic as tonsillectomy. Advocates of synchronous surgery cite a reduction in the number of general anaesthetics, total hospital time, operating theatre time and total time off work for the patient, whilst its adversaries fear an increased risk of post-operative morbidity. This issue has not been subjected to analysis, to our knowledge, and thus an audit of our own department's experience was undertaken as the first stage of an audit cycle looking

at post-operative haemorrhage in tonsillectomy patients undergoing synchronous nasal surgery. As intra-nasal surgery is less common in children we looked at adult patients only.

Methods

The first stage in our audit cycle involved a retrospective review of all patients readmitted to our ENT ward between July 1998 and April 1999. The details and dates of all patients admitted to the ward are kept in a log book and filled in by the ward receptionist who provides the case file. The log book is updated on discharge. From this book it was possible to determine which patients were readmitted during the study period. Then, by cross-checking these names with our operating-theatre records this produced a group of patients who had a tonsillectomy performed and were readmitted. The case notes of these patients were requested and the number of cases readmitted with tonsillectomy haemorrhage was obtained. The number of cases

of primary haemorrhage following tonsillectomy was obtained from the ward diary of morbidity which is updated after each morning ward round. Only those who had tonsillectomy alone were included in this arm of the study. Details of the patient's age, gender, diagnosis, operation, date of admission, duration of hospital stay, risk factors and timing and management of complications were all documented. Children below 16 years and patients with a coagulopathy were excluded from this study. The data included in-patients only and did not account for those complications seen and treated elsewhere or by the General Practitioner (GP). The total number of tonsillectomy procedures performed alone during the study period was obtained from the Clinical coding department based on the OPCS4 coding system of discharge information. The departmental incidence of adult post-operative haemorrhage (requiring readmission) in patients undergoing tonsillectomy alone was hence calculated.

The OPCS4 code for tonsillectomy was used to obtain a computer-generated list of all patients who had a tonsillectomy in Aberdeen Royal Infirmary between February 1991 and April 1999. This list included patients who had other operative procedures performed at the same time. All cases who had a tonsillectomy plus a nasal procedure were identified and their clinical notes requested. Information on indication for, and type of nasal procedure was extracted, in addition to the information recorded for the tonsillectomy alone patients described above. The incidence of post-tonsillectomy haemorrhage in the synchronous nasal surgery group was then calculated.

The Chi-squared test was used for inter-group comparison.

Results

Seventy-one patients, 34 male, 37 female had a tonsillectomy plus a nasal procedure in Aberdeen Royal Infirmary between February 1991 and April 1999. The mean age was 23 years, ranging from 16 to 45 years. Seventy had a primary diagnosis of recurrent tonsillitis. One patient had a primary diagnosis of large obstructive tonsils and snoring with no history of tonsillitis. The nasal or secondary diagnoses varied but the majority of patients had chronic rhinosinusitis (53). The other diagnoses were nasal septal deviation (seven), 'snoring' and nasal obstruction with no diagnosis specified (six), intranasal adhesions (two), recurrent epistaxis (two), and intranasal polyps (one) (Table I). The different nasal

TABLE I
INDICATIONS FOR SURGERY (NUMBER OF CASES)

Primary diagnosis	Secondary diagnosis
Rec. tonsillitis 70	Chronic rhinosinusitis 53
Obstructive tonsils 1	Septal deviation 7
	Snoring and nasal obstruction 6
	Intranasal adhesions 2
	Recurrent epistaxis 2
	Intranasal polyps 1

*No diagnosis specified

TABLE II
SURGERY PERFORMED (NUMBER OF CASES)

Primary procedure	Secondary procedure
Tonsillectomy 71	Cautery of inferior turbinates 22
	SMD inferior turbinates 17
	Trimming of inferior turbinates 9
	Antral lavage 11
	Septal correction surgery 8
	Endoscopic sinus surgery 4
	Division of adhesions 2
	Silver Nitrate cauterly to Little's area 2

procedures performed were a reflection of the variation in nasal pathology with most involving reduction of the inferior turbinates in 48 cases (22 by surface cauterly, 17 by sub-mucous diathermy and nine by trimming). The other procedures performed were antral lavage (11), septal surgery (eight), endoscopic sinus surgery (four), division of adhesions (two) and silver nitrate cauterly to Little's area two (Table II).

No patients undergoing synchronous nasal surgery had a documented immediate or early complication directly related to the nasal surgery, whilst nine suffered a post-tonsillectomy haemorrhage (one primary, eight secondary). The overall post-tonsillectomy haemorrhage rate was 12.7 per cent (nine out of 71).

Three hundred and ninety-eight adult patients (131 males and 267 females with a mean age of 23 years) had tonsillectomy performed as a single procedure between July 1998 and April 1999. These patients were from the same geographical area as the synchronous nasal surgery group and underwent surgery in the same unit. The main indication for surgery was recurrent tonsillitis. Sixteen patients in the tonsillectomy alone group had post-operative haemorrhage (four primary, 12 secondary) ie. four per cent of cases, a figure comparable to those published in the literature.¹ There was a three-fold increase in the overall post-operative tonsillectomy haemorrhage rate in patients undergoing nasal surgery at the same time as tonsillectomy compared to those undergoing tonsillectomy alone ($p < 0.01$). The average hospital stay was three days, ranging from two to six and there was no statistically significant inter-group difference.

Discussion

The post-tonsillectomy haemorrhage rates reported in the national and international literature is not usually age specific.¹⁻³ In a study seeking to determine the rate of post-tonsillectomy haemorrhage in adults undergoing synchronous nasal surgery, a control group of patients of the same age, drawn from the same area and undergoing surgery in the same unit had inherent test advantages. The lack of complete congruence of the time period over which the two groups were studied is a study design flaw but reflects the disparity in the number of patients undergoing synchronous nasal surgery and tonsillectomy as opposed to tonsillect-

omy alone. The published figures for post-tonsillectomy haemorrhage in fact fell well within the Confidence interval (2.4–6.2) for post-operative haemorrhage in the tonsillectomy alone patients calculated in our study. This confirms that the post-operative haemorrhage rate in patients undergoing tonsillectomy in our unit was not dissimilar to the published norms and that the group could be used for comparison with the synchronous nasal surgery and tonsillectomy group.

The synchronous nasal group did not suffer any immediate or early nasal complications. The published rate of post-operative haemorrhage after turbinate reduction, the commonest nasal procedure in the patients studied, varies between 0.9 and nine per cent.^{4,6} It is likely that the nasal complication rate in our patients is in the lower end of this range and thus would not be apparent in a sample of this size (71).

Our secondary haemorrhage figures only included those requiring admission to our hospital and did not include cases managed by the GP or by another hospital. All cases in both groups were treated conservatively with antibiotics and hydrogen peroxide gargles. The post-tonsillectomy haemorrhage rate of 12.7 per cent in patients undergoing synchronous nasal surgery was significantly higher than that seen in patients undergoing tonsillectomy alone (four per cent). The reason for this is uncertain and a number of factors may be involved. Patients who have synchronous procedures may experience more pain than those undergoing a single procedure resulting in reduced oral intake and pharyngeal muscle contraction so increasing the risk of secondary bleeding. Patients having nasal surgical procedures will have post-operative nasal congestion (+/- nasal dressing) which will result in mouth breathing and may pre-dispose to an increased risk of tonsillar haemorrhage. The tonsillar beds may also become infected by blood or secretions from the nasal surgical site.

The first part of the audit cycle has identified a link between synchronous nasal surgery and tonsillectomy haemorrhage. A change of practice is being introduced whereby nasal and tonsil operations are staged. The post-tonsillectomy haemorrhage rate continues to be audited prospectively to determine the impact of this change in practice.

- **Simultaneous surgery to the throat and nose are often avoided by Otolaryngologists as it is felt that the morbidity of a dual procedure is unacceptable**
- **This is a retrospective study of 71 patients who underwent both tonsil and nasal surgery under one anaesthetic**
- **The group having tonsil and nasal surgery were compared to a cohort from the same hospital who had tonsil surgery alone**
- **The main outcome measure was the incidence of post-tonsillectomy haemorrhage**
- **The group having nasal surgery had a varied range of procedures and the method of tonsillectomy may have varied over time – and is not specified**
- **With these reservations it does seem that post-tonsillectomy haemorrhage is likely to be increased in those patients who have simultaneous nasal surgery**

References

- 1 Kristensen S, Tveteras K. Post-tonsillectomy haemorrhage. A retrospective study of 1150 operations. *Clin Otolaryngol* 1984;**9**:347–50
- 2 Blair RL, McKerrow WS, Carter NW, Fenton A. The Scottish tonsillectomy audit. Audit Sub-committee for the Scottish Otological Society. *J Laryngol Otol* 1996;**110**(Suppl 20):1–25
- 3 Carmody D, Vamadevan, Cooper SM. Post-tonsillectomy haemorrhage. *J Laryngol Otol* 1982;**96**:635–8
- 4 White A, Murray JA. Intranasal adhesion formation following surgery for chronic nasal obstruction. *Clin Otolaryngol* 1988;**13**:139–43
- 5 Garth RJ, Cox HJ, Thomas MR. Haemorrhage as a complication of inferior turbinectomy: a comparison of anterior and radical trimming. *Clin Otolaryngol* 1995;**20**:236–8
- 6 Dawes PJ. The early complications of inferior turbinectomy. *J Laryngol Otol* 1987;**101**:1136–9

Address for correspondence:

D. P. Murray,
Department of Otolaryngology, Head and Neck Surgery,
Aberdeen Royal Infirmary,
Aberdeen AB25 2ZN, UK.

Mr D. Murray takes responsibility for the integrity of the content of the paper.

Competing interests: None declared
