Safety of day-stay tonsillectomy

Zahoor Ahmad · Nalaka de Silva · Randall P. Morton · Andrew Wood B. A.

Abstract

Summary The appropriateness of tonsillectomy as a day case procedure is not universally accepted, however, the procedure has been performed in our institution since 1996. Our policy has been to continue this practice.

To assess the appropriateness of this practice in our institution, a retrospective study of 802 tonsillectomies performed over 16 months was conducted. A telephone based questionnaire was formed to assess safety of the procedure and to evaluate the experiences and attitude of the served community towards our practice.

Four hundred and thirty-three (61.3%) patients/ parents were contactable to answer the questionnaire. Fifty-eight percent felt that a same day discharge was favorable with 6% considering that an overnight stay would have been preferable, others had no preference. Regarding the problems at home, 76% reported no problems on the first night, with 3% needing medical assistance that night, half of which were admitted in the hospital. We conclude that with the practices in place in this center, our policy of aiming for same day discharge is appropriate, being safe and agreeable to both patients and health care providers.

Keywords Day case surgery · Tonsillectomy · Postoperative complications

Introduction

Tonsillectomy as a day-case procedure is an accepted norm in many parts of the world with trials concluding that it is appropriate and safe, particularly in children, as well as offering benefit to health care providers [1, 2, 3]. Whilst the first postoperative night has been shown to be largely free of major complications [3, 4], concerns still exist in some parts of the world about issues such as parental anxiety [5, 6], postoperative vomiting [5, 7] and the need of emergency services after discharge [8]. Our policy since 1996 has been that in the absence of clear contra-indication, tonsillectomies have been performed as a day case procedures. There has however not as yet been validation of this policy in our population. In evaluating the service the following issues were identified:

1. Are patients experiencing significant problems at home?
2. Is the service offered one that is acceptable to the population that is served?
3. Is there any way to better identify patients who are likely to experience difficulties or need to seek further medical help after discharge?
4. Is it truly the most attractive option economically or is the financial burden merely being shifted away from the wards and onto local emergency services?

This paper reports the results of a survey that was designed to address the first two points.

Materials and methods

Our Unit is situated in south Auckland and is part of a university hospital having a catchment area of about 500,000 population [9]. In this unit, candidates for tonsillectomy are seen preoperatively and suitable patients are selected for a day case procedure. Contra-indications to day-case surgery are:

1. Combined procedure with tonsillectomy e. g. Uvulopalatopharyngoplasty

Z. Ahmad¹ · N. de Silva¹ · R. P. Morton¹ · A. B. A. Wood²

¹Department of Otolaryngology, Head and Neck Surgery, Counties Manukau Health, Auckland, New Zealand

²Department of Surgery, John Radcliffe Hospital, Oxford, England

Z. Ahmad (✉)

E-mail: zahmad@middlemore.co.nz

2. Syndromic patients e.g. down's syndrome, Velocardiofacial syndrome, children with cleft palate, etc.
3. Age below 3 years
4. Associated co-morbidities e.g. patients on continuous positive airway pressure, cardiac problems, bleeding disorders (asthma is not a contraindication)
5. Living in an area where medical care is not freely available i.e. taking more than approximately 45 minutes to get to a medical center (flexible)
6. Lack of support/care at home

Over the period of this study, tonsillectomies with or without adenoidectomies were performed by five consultants and two registrars (under supervision). All the surgeons used either cold dissection technique with bipolar diathermy for hemostasis or Bipolar dissection tonsillectomy. Intra-operatively, patients were given a single dose of Dexamethasone (4–8 mg). Patients were assessed postoperatively and in the absence of complications were sent home the same day after 4 hours of observation in the recovery. Patients were discharged with antibiotics and analgesia for a week and given clear verbal instructions and leaflets detailing what to expect in the subsequent days and how to respond to both normal and abnormal sequelae. Clear contact details were provided as a part of these for use in an emergency.

A retrospective study of patients who underwent tonsillectomy/adenotonsillectomy as a day case procedure at the Manukau Surgery Centre during the 16 months period between 1st October 2001 and 1st March 2003 was done. Patients who were admitted overnight, planned or unplanned were excluded from the study. Patients were identified, with their age, sex, and the procedures performed from the hospital operations record book.

Data was generated by means of telephone contact with the patient or in the case of children under the age of 16, a parent, with a standardised questionnaire (reproduced as an appendix). Those patients with incorrect phone numbers were not pursued further. If there was no reply or the line was engaged a second attempt was made. All phone calls were made by two individuals in January - February 2003.

Over the 16 months, 802 tonsillectomies were performed. Simultaneous adenoidectomy was performed in 125 (29.4%) patients.

The data that was generated was analyzed in a systematic fashion, attempting to address the questions outlined in the introduction, using a chi-squared test to look for statistically significant differences.

Results

Of the 802 tonsillectomies performed 706 (88%) patients were discharged the same day of operation. There were 49 unplanned admissions and 47 planned admissions.

Twenty-seven unplanned admissions were due to insufficient time in recovery as the recovery closes at 6 pm and they had to be admitted. They had no other indications for their admission and could have gone home if they had stayed a statutory 4 hours in recovery.

Twelve patients had medical and social concerns and should have been planned for admission but were missed in preoperative clinics. Ten patients had either poor pain control, breathing difficulties, blood pressure problems or some bleeding problems in the recovery and were admitted Table 1.

Table 1 Showing causes for un-planned admissions from recovery

Un-planned admissions	No medical cause	Definite medical cause	Should have been planned
0–15 yrs (#40)	25	9	6
16 + yrs (#9)	2	1	6

This left 706 day stay cases out of which 433 (61%) could be contacted and answered the questionnaire. The contacted group was representative of the over all study population with regard to age and gender Table 2.

Table 2 Study sample vs entire population

	Study population (%)		Entire population (%)	
	Males	Females	Males	Females
0–15 yrs	172 (39.7)	182 (42)	276 (39.1)	295 (41.8)
16 + yrs	31 (7.2)	48 (11.1)	45 (6.4)	90 (12.7)

The age range in the pediatric group was 2–15 years (mean 7.5 years) and in the adult group was 16–49 years (mean 23.8 years).

Most of the patients (76%) had no problems at home after discharge.

Amongst the problems pain was found to be the major concern in 14% and difficulty in swallowing in 11% patients. The incidence of vomiting in children (4.5%) was higher than in adults (1.3%). This however was not found statistically significant ($p > 0.05$) bleeding (any blood in the sputum) was noted in 2.5% children and 3.8% adults Table 3.

Thirteen patients (nine children and four adults) needed medical assistance during the first night. Seven children were successfully managed at emergency clinics and were sent home while two children and all four adults were admitted to the hospital. One child had swallowing difficulties and needed intravenous fluids and the other had bleeding and needed to go to theatre for control of his bleeding.

Table 3 Showing patients with different problems at home

Age	Bleeding	Nausea/vomit	Pain	Swallow prob
0–15 yrs (# 354)	9 (2.5%)	16 (4.5%)	45 (12.7%)	38 (10.7%)
16 + yrs (#79)	3 (3.8%)	1 (1.3%)	11 (14%)	9 (11.4%)

Three of the four adults admitted had bleeding problems and the other one had uncontrolled pain at home. One of the three adults with bleeding was taken to theatre for control of his bleeding, others settled in the ward with observation.

Parents and adult patients were questioned about how they, in retrospect, viewed day-case tonsillectomy. The majority of parents (60%) felt that it was preferable to nurse their child at home themselves whilst (24%) had no preference as to whether children should be admitted or not, with (16%) thinking that an overnight stay would be better Table 4.

Table 4 Showing the retrospective response for preference if the procedure has to be done again on another child/ or a relative or a friend

Age	Go home same day	No preference	Stay-hospital overnight
0–15 yrs (#354)	214 (60%)	82 (24%)	58 (16%)
16 + yrs (#79)	36 (45.6%)	28 (35.4%)	15 (19%)

The adult group was less strongly in favor of going home on the same day with 46% favoring that option. However, only 19% felt that it was preferable to stay overnight; 35% declared no preference. Overall, 58% of the population support the provision of tonsillectomies as a day-case procedure with only (17%) being in opposition Table 4.

When asked about their level of concern at discharge, 71% declared themselves to have been unconcerned with 24 % reporting slight concern and only 5% saying that they were very concerned Table 5.

Table 5 Showing level of concern at discharge from

Age	Unconcerned	Slightly concerned	Very concerned
0–15 yrs (#354)	238 (67.2%)	92 (26%)	24 (6.8%)
16 + yrs (#79)	62 (78.5)	15 (19%)	2 (2.5%)

Problems and emergency presentations on the first night were compared against possible determinants of post-operative progress, namely age (adult vs pediatric), sex, procedure (tonsillectomy vs adeno-tonsillectomy) and level

of concern at discharge. Of the 133 patients (30%) who declared a degree of concern at the time of discharge, six went on to have “significant” problems on the first night. When compared to those that were unconcerned at discharge this represents no significant difference ($p > 0.05$).

Five percent of adults and only 2.5% of children required an emergency consultation on first night after discharge and again this represents a no significant difference ($p > 0.05$).

Discussion

This study offers an accurate assessment of how well suited the local population is to day-case tonsillectomies and how well suited our service is to the population served as well as confirming a very low adverse event rate. Our all-cause first night need of medical assistance post-tonsillectomy of 3% is well below the published data from other day case centers. This is in addition to the planned admission rate of 5.9% and an unplanned admission rate of 6.1% (49 patients).

Out of 993 patients, Hellier et al. reported a planned admission rate of 6.5% and an unplanned admission rate of 3.1% [3]. Another study had an unplanned admission rate of 8.2% [8].

Some authors have been sceptical about the viability of a general policy of performing day-case tonsillectomies, citing the presence of medical and social contraindications meriting planned admission. In a study specifically focusing on this issue, Drake-Lee and Weiner concluded that in their local population, day case ENT procedures were contraindicated in 8% for medical reasons and 34% for social reasons [10]. Kishore et al. concluded that only 27% of their patients were suitable [11] whilst Kubba and Mesersmith reported that only 16% of their pediatric population fulfilled criteria for a day case procedure [12].

Observation for 3–6 hours postoperatively is probably sufficient to assess the risk of major primary/reactionary hemorrhage occurring at home on the first night after a tonsillectomy [7]. Despite this, first night morbidity is considered by many to be reason enough for admission. There can be no doubt that there are real issues with medically more minor complications: Panarese et al. reported 392 tonsillectomy/adenotonsillectomy patients of whom 73.7% had a fever and 41.0% vomited postoperatively [7]. In our study, 4.5% of parents and 1.3% adult patients reported significant problems with nausea and vomiting on the first night, comparable with the 5.9% that vomited beyond the 8th postoperative hour in the Panarese et al. study [7]. In a study by Bartley and Connew 12% of patients were reported as having problems managing pain on the first night [13], again comparable with the 12% of children and the 14% of adults in our study. Whilst 24% of our population considered themselves to have had problems on the first night, only 3% (13 patients) had need to consult a doctor for that problem,

of which half (6 patients) were subsequently admitted to the hospital.

The debate remains however, whether postoperative problems can be sufficiently well managed in the peri-operative period to facilitate same day discharge. Most studies support the practice of the particular unit producing the data [3, 4, 5, 6] and this study is no exception. This has led to suggestions that the local “culture” has an important effect on expectations and with our current practice well established there is no reason why this shouldn’t be relevant here. The majority of those questioned were positively in favor of same day discharge with a small, but admittedly significant minority wishing in retrospect to have had an overnight stay.

It is satisfying to note that about three-fourths considered themselves to have been unconcerned at the time of discharge with only 6% saying that they were very concerned. The conclusion of Benson-Mitchell and Maw was that “more time must be spent with the parents, if they are to be confident enough to accept day-case tonsillectomy” [6]. It would seem that this is being largely achieved in this unit and can be considered an attainable target for those considering a day-case based practice.

What however can be done about those who are experiencing problems at home? We have found that the adults do slightly less well than children but the concerns at the time of surgery were not correlated with subsequent problems at home, although adults seem to tolerate tonsillectomy less well than children.

While 6% of our patients were very concerned about leaving hospital at the time of discharge, the fact that they go on to do well after discharge leaves little room for improvement.

The issue of the burden being placed on general practitioners and emergency departments has been looked at by Benson Mitchell et al. [8]. They considered the usage of these services by adult and pediatric patients after a day case tonsillectomy and compared them to a similar cohort that was admitted overnight. Their data gave rise to some relevant conclusions: That usage of these services by tonsillectomy patients is high with more than 50% of each of the study groups requiring a consultation of some form; there was however no significant difference between those that were admitted overnight and those that weren’t.

Limitations of the study are that there was a significant period of delay between the procedure performed and questionnaire answered in some cases and recall bias is likely to be a factor. A prospective study would be required to address this issue, and is planned and in progress.

Conclusion

1. There is very low readmission rate (1.3%) and very low

need for medical help after performing tonsillectomy as day cases.

2. Complication rates are well below the studies published internationally.
3. The community in our series has shown high preference for day case tonsillectomy with minimal concerns for going home on the same day.
4. The practice is safe in our settings and we have no concerns at this stage to change it, however we are presently doing a prospective study of day case tonsillectomies to look at the safety of this practice and to overcome the limitation that were seen in retrospective study.

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