One-day otolaryngologic surgery: a one-year evaluation in an oriental community

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Abstract

Aim: To evaluate the newly introduced one-day surgery unit for potentially ambulatory otolaryngologic cases in King Fahd University Hospital, Al-Khobar, KSA.

Methods: A prospective study of patients undergoing one-day otolaryngologic surgery from December 2006 to December 2007.

Results: The overall evaluation results of 70 patients undergoing one-day otolaryngologic surgery as regards safety and patient satisfaction justify one-day surgery as a new treatment policy.

Conclusion: This study emphasizes that one-day surgery is not an operation but rather a "system" that calls for the staff, both doctors and nurses, to learn and accept the advantages and limitations of this new surgical policy and understand the importance of adequate patient information.

Keywords: Tonsillectomy; One-day surgery; Bleeding; ENT procedures; Safety.

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Introduction

World wide reports have documented not only the safety of common otolaryngologic procedures such as adenotonsillectomy done as a one-day procedure but also have recorded a high percentage of patient satisfaction [1–5]. Most of these reports are Western and relate to foreign communities with different customs and habits. This limits how far we can generalise from the results of these reports in communities with diverse geographical, social and cultural characteristics without being critically evaluated. Therefore, we set out to evaluate our one-year experience with the one-day otolaryngologic surgery unit in the King Fahd hospital of the university, Al-Khobar, Kingdom of Saudi Arabia exploring the recommendations for safety and satisfaction pertinent to our part of the world.

Materials and Methods

his is a prospective study involving patients undergoing one-day otolaryngologic surgery during the period December 2006 to December 2007 in the King Fahd University hospital, Al-Khobar, Kingdom of Saudi Arabia.

One-day otolaryngologic surgery included adenoidectomy, tonsillectomy, adenotonsillectomy and myringotomy either alone or with adenoidectomy. There was no age limit for the population undergoing one-day surgery in this study. The study included indigenous patients and expatriates. The only patients excluded were those with a history of a medical illness needing a post-operative stay of longer than 24 hours and those with a potential bleeding tendency.

All patients were seen by the surgeon on the day of the surgical booking and they and their families were given the choice between the one-day surgery procedure and the regular ward admission after adequate information about both.

If one-day surgery was preferred by the patients or their families, they were given an appointment for the anaesthesia pre-evaluation clinic and then referred to the one-day surgery unit which lies in the main hospital building occupying a separate suite but utilizing the main operation room which is used also by the inpatient surgical wards. The one-day surgery nurse adequately informed the patients and/or their families about the expectations and the instructions before and after the one-day surgery. Patients scheduled for one-day surgery were listed first on the operating list to gain the maximum time for post-operative observation.

All surgery was performed under general anaesthesia. All patients had a standard anaesthetic protocol; nothing by mouth for at least 6 hours before surgery, no premedication, induction with fentanyl 1μg/kg and propofol 2–3 mg/kg, muscle relaxation with rocuronium 0.5mg/kg, endotracheal intubation and maintenance on 1–2% sevoflurane in oxygen, lung ventilation to maintain $ETCO_2$ at 32–35mmHg, reversal of muscle relaxation using neostigmine and atropine. After extubation all patients undergoing one-day surgery were kept in a post anesthesia care unit adjacent to the operating room till fully conscious and alert after which they were transferred to the oneday surgical unit. Immediate post-operative analgesia for cases of tonsillectomy with or without adenoidectomy was given in the post anesthesia care unit in the form of Voltarol suppositories for children and intramuscular injections in adults with dose adjustments according to the body weight.

All patients were kept in the hospital for an average period of 6–7 hours and discharged after being examined by the otolaryngology resident in charge.

The parameters for the analysis of the outcomes of the one-day surgery in this study were:

- post-operative haemorrhage
- post-operative rise in temperature
- post-operative vomiting
- post-operative pain and dizziness, and
- the incidence of hospital readmission.

Patient and/or family satisfaction as regards their experience with one-day surgery was also recorded by means of a questionnaire carried out by the one-day surgery nurse on duty.

Results

During a one-year period, 70 cases underwent one-day otolaryngologic surgery as detailed in Table 1. There were 61(87%) indigenous and 9 (13%) expatriates (Fig1). On the other hand, there were 199 patients admitted for the same surgical procedures during the same time period (Table 2).

Table 1 One-day otolaryngologic surgery inventory (n=70). M = male, F = female

Procedure	Number	M	F	Mean age in years
Adenoidectomy	23	12	11	7.6
Tonsillectomy	5	0	5	12.8
Adenotonsillectomy	12	9	3	6.8
Adenoidectomy plus myringotomy	17	11	6	6.5
Myringotomy	13	8	5	11.0

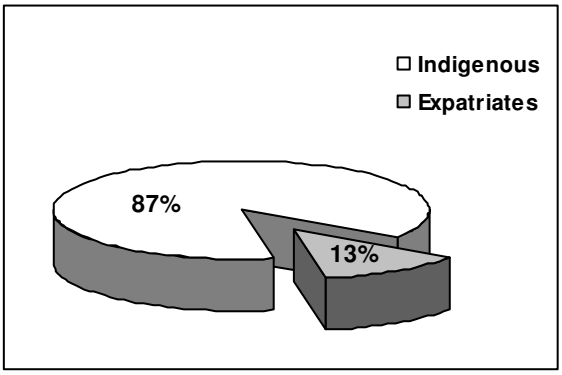

Figure 1 Indigenous to expatriate group of patients.

Table 2 Regular surgery inventory (n=199). M = male, F = female

Procedure	Number	M	F	Mean age in years
Adenoidectomy	30	13	17	10.0
Tonsillectomy	32	15	17	18.3
Adenotonsillectomy	81	42	39	7.0
Adenoidectomy plus myringotomy	16	11	5	6.9
Myringotomy	40	21	19	10.0

In the group undergoing one-day surgery, the youngest patient was a 20 month old undergoing an adenoidectomy. The oldest was a 25 year old undergoing myringotomy with ventilation tube insertion (Table 3).

In the patients undergoing one-day surgery, the incidence of post-operative nausea was 30 per cent. All patients were encouraged to resume a normal diet before discharge. Only four cases (5.7%) experienced vomiting of blood tinged mucous and gastric secretions shortly after having their first snack meal. This stopped without the need for medication.

Body temperature was recorded upon patient transfer to the one-day surgical unit and on discharge. The maximum temperature recorded in the group of patients undergoing oneday surgery was 37.4°C

Table 3 One-day otolaryngologic surgery. Age and number of patients (n=70).

Age	Number (%)
<2 years	1 (1.4%)
2-6 years	33 (47%)
>6–13 years	28 (40%)
>13–18 years	5 (7%)
>18 years	3 (4.3%)

(1.4%) in an adenotonsillectomy patient. All patients were afebrile on discharge.

Pain was generally tolerated by the patients undergoing one-day surgery. Only six (8.6%) patients needed an extra dose of an analgesic other than that given in the post anesthesia care unit. Dizziness was observed in four (5.7%) patients undergoing one-day surgery. Dizziness was judged by the sway of a child as he walked in the room needing assistance. Dizzy patients were not given medications but were encouraged to early ambulation. By the time of discharge, dizziness had all disappeared.

Weakness on the other hand was a more common observation. It was seen in 40 per cent of the patients and was more obvious in children than in adults. These patients felt sleepy and week rather than dizzy. Their gait was normal and they walked without the need of assistance.

No cases of post-operative bleeding were encountered in the one-day surgery group of patients. In the group undergoing regular admission surgery, two cases (1%) were readmitted for post-operative bleeding. A boy 6 years old and a girl 11 years old who both underwent adenotonsillectomy and bled on the 6th and 9th days respectively. Two cases (3%) of the one-day surgery group of patients were admitted to the surgical wards. The first case was a 6 year old girl with sickle cell disease undergoing an adenoidectomy who bled intra-operatively. The decision for admission was taken for observation and possible blood transfusion. The second case was a 3 year old boy undergoing tonsillectomy who went into laryngeal spasm after extubation and needed admission for observation.

The questionnaire conducted by the one-day surgery nurse on discharge revealed 100% satisfaction by the patients and/or their families. Both indigenous and expatriate patients and/or their families agreed that the detailed information given by the surgeon prior to surgery as well as the one-day surgery nurse helped to dismiss their worries as regards the expected post-operative morbidity and whether the time spent in the one-day surgery unit would be enough to control it. The only worry for all the patients undergoing one-day adenoidectomy, tonsillectomy or both was what to do in case of emergency while at home.

Discussion

In a busy tertiary referral institution, the growing number of operations performed by the different surgical subspecialties has brought about a simultaneous decrease in the number of beds available for the surgical departments in the surgical wards. This has led to an increase in the waiting lists of patients awaiting their operations. In an attempt to make more surgical beds available, a one-day surgical unit has emerged as a new treatment policy for potentially ambulatory surgical procedures not only as a solution for the problem of the congested surgical wards but to improve healthcare efficiency and

reduce healthcare costs as well. The evaluation of this new treatment policy can be judged by the outcomes of two main factors, safety and satisfaction.

Addressing the issue of safety, the results of this study proves the safety of one-day otolaryngologic surgery. Only two cases (3%) were admitted to the wards from the oneday surgical unit. The need for overnight careful observation was behind the decision for their admission. No cases of primary or secondary hemorrhage were seen in this study and therefore no cases were admitted for post-discharge bleeding.

This was compared to two cases (1%) undergoing regular admission surgery who were readmitted for post-operative bleeding some days after their hospital discharge.

We do not adopt a specific surgical technique in tonsillectomy. Haemostasis by bleeding vessel ligature, monopolar and bipolar cautery are all used according to the surgeon's preference. However, a much larger sample would be required to make the conclusions regarding post-operative bleeding more meaningful.

Post-operative laryngeal spasm has occurred once in this series of one-day surgery. Nevertheless, we do not use a laryngeal mask for fear of aspiration. Patients are strongly instructed not to have anything by mouth on the day of surgery. However, in practice we found that a small number of patients did not abide by the fasting instructions thinking that a snack shortly before being taken to surgery would not do much harm.

The low rate of post-operative pain, bleeding and vomiting in our study justifies the policy of one-day surgery. The use of post-operative non-steroidal anti-inflammatory drugs and the regular adequate dosing of paracetamol as well as the use of intravenous propofol for anaesthesia and the avoidance of opiates have reduced the incidence of pain and vomiting respectively.

However, safe surgery alone does not qualify it to be considered for one-day surgery.

While the competence of both surgical and anaesthetic endeavors is important, the role of the day-surgery nurse is crucial. The day-surgery nurse is trusted with patient education pre-operatively and post-operatively. We found that this task helped greatly in alleviating all fears about one-day surgery. Initially in the early days of one-day surgery, we had the impression that patients and/or their families were reluctant to accept the idea of one-day surgery for fear of inadequacy. Discussing the matter with the one-day surgery nurses, they agreed to spend more time on patient education which reflected positively on the general acceptance of one-day surgery among the patient population that showed clearly in the cases that followed.

The issue of patient satisfaction was investigated in this study for both indigenous and expatriate groups of patients. The availability of a hospital bed upon admission and the full attention of an undistracted devoted nurse were all common reasons for satisfaction mentioned in the questionnaire. Interesting were the additional reasons for satisfaction given by the indigenous group of patients versus the expatriate group. The expatriate group of patients added that the main reason for their satisfaction was their separation from the regular busy hospital wards favouring the idea of a rapid hospital discharge. On the other hand, most of the enrolled indigenous patients agreed that home was a better place to recuperate and were satisfied by not having disrupted their family life.

Although reasons might be somewhat different, the result was a general acceptance of and satisfaction in the service provided and the time of stay in the one-day surgery unit. In this study we followed the recommendations of Hellier and his colleagues [6] for a dedicated day surgery unit and pre-operative one-day surgery unit for all patients. In contrast to Asiri [3] and his colleagues we performed all our one-day procedures in the main operating room suite. This might have supported our gradual introduction and presentation of one-day surgery as an alternative to in-patient operations and took away the feeling of inadequacy which was in turn reflected by the unanimous achievement of patient satisfaction. What remains is the patients' worry about what to do in case of emergency while at home. In our study we have reassured all patients and/or their families of their immediate hospital admission through the resident on call. We recommend the availability of a dedicated hospital phone number to answer the patients' queries especially those who live away from the hospital. Perhaps a dedicated home care team as suggested by Shah et al. [7] would prove effective in this particular issue by providing an effective home support to patients undergoing one-day surgery.

Conclusion

The overall results of this study on one-day surgery seem promising. More time and more patients are needed for more reliable statistical data to be collected and to achieve more faith in the procedure. According to Moralee [8], the economic benefits of one-day surgery depend on how many patients accept same day discharge. But before that, the staff, both doctors and nurses, should realize the fact that one-day surgery is not an operation but rather a "system" that calls for all to learn and accept the advantages and limitations of this new surgical policy and understand the importance of adequate patient information. Acknowledgment The authors acknowledge the efforts of Mrs. Nada Al-Shaif, RN, for conducting the patient questionnaire and providing the one-day surgical records for patients enrolled in this study.

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