POST TONSILLECTOMY HAEMORRHAGE, RESULTS OF 3 MONTHS FOLLOW-UP

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ABSTRACT

Objective: To ascertain the number of episodes of post operative haemorrhage that required surgical treatment under general anaesthesia.

Material and Methods: This study was conducted at the Department of Otorhinolaryngology, Head and Neck Surgery of Postgraduate Medical Institute from January 2002 to March 2003 over a period of 14 months. Five hundred patients, age 6 years to 60 years (mean 16 years) who had undergone as inpatient tonsillectomy and who had been hospitalized for at least 3 days.

Results: In all, 14(2.8%) patients had experienced post tonsillectomy bleeding that required surgically achieved hemostasis under general anaesthesia. Nine (64.2%) patients had experienced reactionary haemorrhage and were treated under general anaesthesia. Five (35.8%) patients experienced secondary haemorrahge – one patient in this later group had excessive bleeding on 25th days postoperatively which we believed is the latest episode of secondary bleeding reported to-date.

Conclusion: We conclude that a follow up period of 10 days appears to provide sufficient time to evaluate the incidence of post tonsillectomy haemorrhage.

Key words: Post tonsillectomy haemorrhage; Follow-up, Second anaesthesia.

INTRODUCTION

Postoperative haemorrhage remains the most serious complication of tonsillectomy, and its incidence approaches 10%[1]. Post tonsillectomy bleeding events are generally classified as either reactionary (<24hr) or secondary (>24hrs). Unfortunately, there is no uniform system of classifying the intensity of post-tonsillectomy haemorrhage. Some

authors consider all bleeding events, while others include only those events that require subsequent treatment under general anaesthesia. For this study, we included in our results only those patients who met the later criterion.

Among children, other common short-term complications of tonsillectomy are nausea, vomiting, fever, and an inability to eat or drink. These complications can become serious if they lead to dehydration, which can require postoperative infusion. Even so, some authors consider these complications to be controllable and therefore not a contraindications even to outpatient tonsillectomy [2, 3]. Nevertheless, post tonsillectomy haemorrhage remains an important concern. For example, between 1995 and 1998, we treated 30 patients with delayed postoperative haemorrhage in our ENT department after they had undergone tonsillectomy elsewhere[4]. Most of these patients had experienced their haemorrhage more than 1 week following their tonsillectomy.

In this article, we describe our study of the incidence of post tonsillectomy haemorrhage, with particular attention on delayed haemorrhage. Our goal was to determine the appropriate length of postoperative follow-up, which should help in the postoperative monitoring of patients who undergo tonsillectomy as an inpatient procedure.

MATERIAL AND METHODS

Our study population was made up of 500 patients, aged 6 years to 60 years (mean 16 yrs, 60% female) who had undergone inpatient tonsillectomy at Department of Otorhinology, Head and Neck Surgery of Postgraduate Medical Institute from January 2002 to March 2003 over a period of 14 months (Fig-1). The indication of tonsillectomy, with or without adenoidectomy, included chronic or recurrent tonsillitis, peritonsillar abscess, removal of tonsil rests or malignant tumours, and upper airway obstruction caused by hyperplasia of the tonsils and/or neck (Fig- 2).

All 500 patients underwent surgery under general anaesthesia and with oral intubation. A Boyl Davis mouth gag with a blade was installed, and the tonsils were exposed. The tonsils were grasped with a forceps, the anterior pillar and superior poles were incised with scissors, and the surrounding mucosa was carefully dissected. The plane lateral to the tosils was dissected, and the forceps were reapplied to grasp the medial and lateral surfaces of the tonsils. The tonsils were bluntly dissected, and the inferior poles were snared.

Any bleeding that occurred after pressure had been applied with gauze was controlled by suture ligation. No electrosurgical means of achieving haemostatis was required. Patients were instructed to refrain from eating and drinking for four hours following surgery. Antibiotics were administered to prevent endocarditis in accordance with the current guidelines of the Germany.

In according with international recommendation, all of these tonsillectomy were performed on inpatient basis and all patients remained hospiltalized for at least 3 days postoperatively. Patients who experienced postoperative haemorrhage were discharged only after their general condition, haemoglobin concentration, and state of wound healing had stabilized.

Three months following surgery each patient was interviewed in ENT Department to a certain whether any new bleeding had occurred following discharge if so what kind of haemostasis had been necessary to control it.

IN THE STUDY OF 500 PATIENTS, AGES RANGE FROM 6 TO 60 YEARS

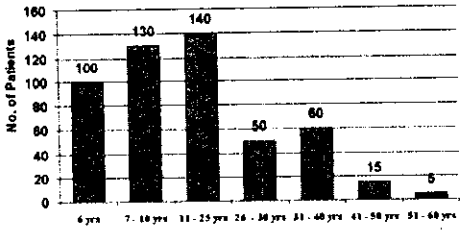

Fig. 1

RESULTS

In all, 14 patients (2.8%), aged 12 to 24 years (mean age 18yrs female to male ratio 75:25) experienced postoperative haemorrhage that required surgical treatment under general anaesthesia. The episode between one and 25 days postoperatively. Another patient aged 22 years old man had a coagulum removed 24 hours after surgery, had experienced no subsequent bleeding. None of the 14 patients required a repeat intervention to achieve haemostasis. Eleven (9/11) 78.5% patients received their suture on the day of operation (reactionary haemorrhage) and one each patient on postoperative day on 4th, 6th and 9th. The patient who experienced bleeding on postoperative day 6 had undergone an abscess tonsillectomy and had been readmitted 4 day earlier. The patient who haemorrhaged on 9 day had undergone a tumour tonsillectomy and a radical neck dissection. The other patients had experienced haemorrhage on postoperative day 5, this patient had experienced significant amount of bleeding during surgery and had required an unusually large number of sutures to control it. Three months after each operation, we attempted to interview each patient (or parent) in ENT and we were successful in 490 of the 500 cases (98%). Using a standard questionnaire, we asked about any incidence of delayed bleeding that we were unaware of, regardless of its intensity. Only 1 patient reported a new episode of postoperative haemorrhage, which was minor. A 28 years old women had noted blood-tinged sputum on postoperative days 6 and 8 and a 10 years old boy had experienced some minor bleeding from his nose 10 days after his adenotonsillectomy, but neither required any further treatment.

TYPE OF PROCEDURES THAT WAS PERFORMED IN THE STUDY OF THE 500 PATIENTS

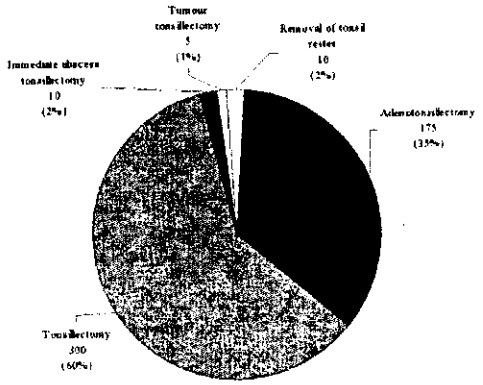

Fig. 2

DISCUSSION

The reported incidence of post tonsillectomy haemorrhage ranges from 0.38 to 6%[5,6]. Hemostasis is generally achieved via enoral ligation or electroautery, but the appropriate management strategy is still controversial. Confounding this issue is the variance in published reports regarding specific definitions of postoperative haemorrhage and the process of patient selection. Even though a classification of reactionary (<24 hrs) and secondary (>24 hrs) bleeding has been widely established in the literature, there is still no uniform method of quantifying its seriousness. As a result, some authors count all incidents of bleeding and therefore report higher rates of haemorrhage than other authors who include only haemorrhages that require surgical intervention.

Several other limitations in published reports contribute to the lack of a consensus on this issue:

- The incidence of post-tonsillectomy haemorrhage is usually determined in retrospective studies of large numbers of patients. However, some these published reports did not include adequate information about the study's design, materials, and methods, and therefore, they should not be considered for evaluation [7]. In other reports, the authors did not specify the age distribution of the study population, and some operations were performed with general anaesthesia with either, which has an influence on vascular tonus and which is no longer used.

- At some clinics, surgeons and/or adult patients prefer that tonsillectomy be performed with local anaesthesia[8]. The results of these procedures are not comparable with those reported by paediatric otolarngologists.

- An impressively low rate of postoperative haemorrhage following the use of bismuth subgallate to achieve hemostasis was reported by Maniglia et al[9]. However, the use of bismuth subgallate in daily practice is not common.

- Many studies were published by experienced surgeons, who are likely to have lower than average complication rates. Accordingly, some authors recognized the relationship between surgical experience and the rate of postoperative bleeding, while others ignored any such influence.

- An increasing number of reports is being published by paediatric otolaryngologists, and the limited range of their patients' ages means that their results cannot be extrapolated to all patients.

- Because most authors today set out to prove that outpatient tonsillectomy is safe, their patient selection criteria are very specific and their study populations are not always reflective of the general patient population [10].

- Finally, data on follow up are frequently missing. As a result, these reports do not reveal whether patients might have undergone surgical treatment for post tonsillectomy haemorrhage elsewhere.

Our study was undertaken to assess the incidence of postoperative haemorrhage in selected patients who underwent tonsillectomy (performed with only a scissors and snare) under general anaesthesia and who were operated on by surgeons with various degrees of experience. When it occurred, post tonsillectomy haemorrhage was treated exclusively by suture ligation of the bleeding vessels. Only those patients whose postoperative bleeding required surgical treatment under general anaesthesia were included in our results. As such, our data seem to be more applicable to the standard practice of general otolaryngology.

Another aim of our study was to analyze the incidence of secondary bleeding, which has not received as much attention in the literature as reactionary bleeding. The reason for the increased emphasis on reactionary bleeding is attributable to the belief that is more common and more serious. We agree only partly with this opinion, other studies have shown that episodes of delayed bleeding – some as long as 3 weeks following surgery – have also required surgical treatment under general anaesthesia.

Irani and Berkowitz reported that most cases of secondary haemorrhage they studied occurred within10 days [11]. Camody et al reported that 80% of the secondary bleeds they found occurred with 7 days [12]. For our study, we lengthened the duration of follow up to 3 months. In our opinion, such a long follow up would certainly reveal all incidents of postoperative haemorrhage. We decided against mailing questionnaire because, re-

sponse rates are frequently poor. For example, Pratt and Gallagher attempted to ascertain post-tonsillectomy mortality and morbidity rates by mail, but only 40% of their questionnaire were returned by selected hospitals[13]. Other reports of response rates ranges from 31 to 86%. Pringle et al had to mail repeat questionnaires in order to achieve an 80% response[14]. Rosbe et al recently conducted a prospective study of the efficacy of follow up telephone calls place 3 to 4 weeks postoperatively and concluded that this method of monitoring is cost effective.

In our study, the rate of post tonsillectomy haemorrhage that required treatment under general anaesthesia was 2.8% (14 out of 500). Of these patients, 75% were female and 75% were older than 20 years of age. These findings are dissimilar to those reported by Roverts et al and by Kristensen and Tveteras [15] but they are similar to those reported by Carmody et al who found a significant predominance of post tonsillectomy haemorrhage among females aged to 10 to 19 years.

The rate of reactionary bleeding in our study – 64.2% (9/14) - was considered with several other reports.

On the other hand, Carmody et al found no difference in reactionary and secondary bleeding rates; other have even reported that their rates of secondary bleeding were actually higher than the rates of reactionary bleeding. It should be noted that the latter studies included all episodes of bleeding, including those that did not required surgical treatment under general anaesthesia. Moreover, they also included rare episodes of bleeding from the nasopharynx following adenoidectomy or adenotonsillectomy. Five patients in our study underwent tonsillectomy to remove a malignant tumour, and two of them experienced secondary bleeding after surgery.

The onset of reactionary bleeding in our study usually occurred within 6 hours (mean 5 hours, 46 min). This finding is consistent with those of other studies [16]. Some authors suggest that a duration of postoperative observation of 6 to 8 hours should be safe, and other recommend an even shorter duration.

In our study, the onset of secondary bleeding in some patients was both abrupt and excessive, and in one patient it required ligatoin of the external carotid artery. There were no episodes of recurrent postoperative haemorrhage in our study.

The patient in our original study who experienced haemorrhage 25 days postoperatively is unique. Before now, the latest recorded occurrence of postoperative haemorrhage in the literature was 21 days[17].

Because most cases of postoperative bleeding occur within 6 hours of surgery, tonsillectomies should be performed in the early morning. Such a schedule allows the surgeon to observe and treat most cases of post tonsillectomy haemorrhage during the day, when the full complement of hospital staff is on duty. Coagulation therapy must be administered with great care. Field cauterization creates deep and extensive zones of necrosis and exposes more and larger vessels to bleeding when sloughing of the eschar occurs.

CONCLUSION

We conclude that a follow up period of 10 days appears to provide sufficient time to evaluate the incidence of post tonsillectomy haemorrhage. Bleeding episodes that occur beyond days are rare. If delayed bleeding should occur with many regularity at all, an analysis of surgeon specific practices and characteristics is indicated.

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