

SECONDARY HAEMORRHAGE IN POST TONSILLECTOMY PATIENTS

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ABSTRACT

Objectives: To determine the frequency of secondary haemorrhage in patients undergoing tonsillectomy.

Material and Methods: This descriptive study including 177 patients was performed in the department of ENT, Head and Neck Surgery, Khyber Teaching Hospital, Peshawar from October 2014 to October 2015. Patients with chronic tonsillitis undergoing tonsillectomy of both gender and age above 4 years were included. The patient's demographic data, age and gender were recorded in a preformed proforma.

Results: In this study mean age was 20 years \pm 0.24 SD. Sixty two percent patients were male while 38% patients were female. Twelve percent patients had secondary haemorrhage while 88% patients have not secondary haemorrhage.

Conclusion: The commonest cause of secondary haemorrhage in post tonsillectomy patients is infection proper antibiotic cover should be given in all tonsillectomy patients at least for 10 days.

Key Words: Tonsillectomy, Post-tonsillectomy, vomiting, Secondary haemorrhage.

This article may be cited as: Din IU, Ullah S, Khan AR, Hafeez M, Muhammad G, Ullah N. Secondary haemorrhage in post tonsillectomy patients. *J Med Sci* 2016; 24: (3) 114-118.

INTRODUCTION

Tonsillectomy is defined as the surgical excision of the palatine tonsils and is a procedure routinely done in the ENT specialty, it is one of the most frequently undertaken procedure in otolaryngology¹. Patients are offered surgery primarily to reduce the frequency and severity of recurrent sore throats. The main early complication is haemorrhage. This is defined as primary (within first 24 hours post operatively) or secondary, i.e. occurring after 24 hours and during the phase of healing of the tonsil bed. Secondary haemorrhage can occur any time until the tonsil bed has healed, which may take as long as two weeks².

Intraoperative bleeding can be a consideration in the choice of technique, especially in small children with limited blood volume and patients with bleeding disorders. Postoperative haemorrhage after tonsillectomy is a potentially catastrophic occurrence because

of the risk of aspiration of blood, both while awake and during anesthesia³. Despite the surgeon's most sophisticated efforts to prevent it, haemorrhage remains the most significant complication after tonsillectomy. Haemorrhage remains the most significant risk. Despite the strongest efforts to prevent it, post tonsillectomy haemorrhage remains the most significant complication with the potential of becoming life-threatening, requiring revision surgery under general anesthesia and intensive care⁶. Tonsillar disease can be divided into a continuous spectrum starting from acute tonsillitis, recurrent acute tonsillitis, chronic tonsillitis and leading to obstructive tonsillar hyperplasia⁷. In about half of patients referred to an otolaryngologist, the actual number of infections does not correlate with the history given by patient or family. Therefore, in evaluating a patient with normal appearing tonsils and a subjective history supporting recurrent tonsillitis, serial examinations of the patient by the otolaryngologist to document the frequency and severity of infection are appropriate. Recurrent acute tonsillitis is documented as 4-7 episodes of acute tonsillitis in one year, five episodes per year for 2 consecutive years, or three episodes per year in 3 consecutive years. This criterion alone does not require proceeding with surgery; however the severity of infections and associated complications as well as days lost at work place or school must be considered^{8,9}. Tonsillectomy with or without adenoidectomy is a commonly performed

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Date Received: February 12, 2016

Date Revised: April 15, 2016

Date Accepted: August 5, 2016

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procedure in Pakistan. The most common indication being recurrent tonsillitis, other indications include peritonsillar abscess, obstructive sleep apnoea and for biopsy in suspected cases of tonsillar malignancy^{10,11}. The rationale behind doing this study is to determine the current modes of frequency of secondary haemorrhage among patients undergoing tonsillectomy.

MATERIAL AND METHODS

This study was conducted in Ear, Nose and Throat Department of Khyber Teaching Hospital, Peshawar from October 2014 to October 2015. It was a cross sectional study in which non probability purposive sampling was used. Sample size was 177, using 13.2% frequency of secondary haemorrhage 95% confidence interval and 5% margin of error, under WHO software for sample size determination. All Patients with chronic tonsillitis undergoing tonsillectomy, patients above 4 years age and either gender were included. Patients with bleeding diathesis, detected by history of bleeding and investigations FBC, BT, CT, PT, Platelet count, primary haemorrhage detected by history, bleeding which occur within 24 hours after surgery and clinical examination and acute tonsillitis detected by history, enlarged inflamed tonsils on clinical examination were excluded from the study the Patients were admitted through ENT OPD and emergency department fulfilling the inclusion criteria, approved of ethical committee was take the demographic features i.e. age, gender was considered. Informed written consent was taken from the patients by explaining the patient's use of data for review and publication for educational and information purposes. Complete history was taken and complete set of routine investigations was done. The cases were followed up at weekly interal for 04 weeks All the information was recorded in proforma for each patient. All confounding variables and bias was controlled by strictly following the exclusion criteria.

All data collected was entered in SPSS version 11. Data comprises of Quantitative variables i.e. age and Qualitative variables i.e. gender. Descriptive statistics mean \pm standard deviation was calculated for quantitative variables like age of the patient. Frequencies and percentages were presented for qualitative variables like gender and post tonsillectomy hemorrhage. Post tonsillectomy hemorrhage was stratified among the age and sex to see the effect modifiers. Results were presented with help of tables and figures.

RESULTS

Age distribution among 177 patients was analyzed as 16(9%) patients were in age range of 4-10 years, 85(48%) patients were in age range of 10-20 years, 48(27%) patients were in age range 21-30 years,

Table 1: Gender Distribution (n=177)

Gender	Frequency	Percentage
Male	110	(62%)
Female	67	(38%)
Total	177	(100%)

21(12%) patients were in age range 31-40 years, 4(2%) patients were in age range 41-50 years and 2(1%) patients were in age range 51-60 years. Mean age was 20 years \pm 0.24. SD Gender distribution is shown Table 1. Twenty one (12%) patients had secondary haemorrhage while 156(88%) patients did not had secondary haemorrhage. Association of secondary haemorrhage in age distribution among 21 patients was analyzed as 10(47%) were found in age ranged 11-20 years followed by 7(33%) patients were in age ranged 21-30 years, 2(10%) patients were in age ranged 31-40 and 2(10%) patients were in age ranged 4-10 years. Association of secondary haemorrhage in gender distribution among 21 patients was analyzed as 13(62%) were found in male patients as compare to 8(38%) female patients.

DISCUSSION

In a study conducted at Peshawar a total of 180 cases under went tonsillectomy post-operative secondary hemorrhage was noticed in 13.2% cases. In our study most of the patients 48% patients were in age ranged 10-20 years follow by 27% patients were in age ranged 21-30 years and 12% patients were in age ranged 31-40 years. More over 62% patients were male and 38% patients were female. Similar results were observed in study done by Kain ZN et al¹².

In our study secondary post operative hemorrhage was found in 21(12%) cases in which most of the secondary haemorrhage cases 10(47%) were found in age ranged 11-20 years, 7(33%) patients were in age ranged 21-30 years, 2(10%) patients were in age ranged 31-40 and 2(10%) patients were in age ranged 4-10 years. More over the incidence of secondary haemorrhage was found more in male patients 13(62%) as compare to female patients 8(38%). In recent years several surgical techniques have been introduced to decrease the duration of surgery and post-operative hospital stay and also complications of tonsillectomy especially postoperative hemorrhage. The differences among papers with respect to bleeding rates after tonsillectomy with different techniques need to be studied. However, in a number of previous studies the secondary hemorrhage rate was much higher in comparison with ours^{13,15}. Benson et al¹⁶ found that 16% of patients had experienced some bleeding when contacted at 2 weeks post-operatively. Raut¹⁷ found 16.9% secondary

hemorrhage rate in 200 patients while assessing 15-17 days postoperatively. Blogmren¹⁸ found that 32.8% of a mixed adult and pediatric population had experienced some secondary hemorrhage following tonsillectomy. Blakley¹⁹ found a secondary rate of 26%. Some researchers showed post-tonsillectomy bleeding rates of 5.1% in adults and post tonsillectomy bleeding rates of 6.75% in pediatric patients. In a literature-based study by Blakley²⁹ he concluded that Post-tonsillectomy bleeding rates of about 5% are typical. In a recent study by Lowe D et al³⁰ on 3306 patients undergoing elective adenotonsillectomy by five senior surgeons with different surgical techniques, they found late post-operative hemorrhage rate of 1.78% which started all at home.

In our study, in all the cases suffering from secondary post-tonsillectomy hemorrhage, the rates of revision surgery to stop bleeding were 1 out of 3 (33%). There was no indication for blood transfusion in any of them. When diathermy was introduced, many reports claimed a significant reduction of operative time and blood loss. However, pain increased with this method. Lowe D et al³⁰ detected post-tonsillectomy secondary hemorrhage rate of 9.5%. The rate of post-tonsillectomy secondary hemorrhage observed in their study was higher than the published rate of 3-5%. The role of disposable instruments and 'hot' techniques as possible factors in raised secondary hemorrhage rates has been the subject of recent UK-wide audits²⁵.

Some studies showed that the rate of hemorrhage was three times higher with use of diathermy throughout an operation when compared to the traditional approach of "cold" dissection. The National Institute for Health and Clinical Excellence (NICE), together with the British Association of Otorhinolaryngologists-Head and Neck Surgeons (BAO-HNS), recommended surgeons to use as little diathermy as possible especially when it was used for both dissection and hemostasis.

Stephen O'Leary et al³¹ showed that the difference in the risk of bleeding after dissection and diathermy tonsillectomy did not reach statistical significance, but the temporal pattern of hemorrhage differed. Secondary hemorrhage was more frequent after diathermy tonsillectomy. One explanation for higher post-tonsillectomy bleeding rates after diathermy techniques may be related to greater thermal damage as the result of excessively high power settings or excessively frequent or prolonged application of diathermy.

In a prospective study of 120 cases of tonsillectomy conducted at ENT Department, Liqueate University of Medical & Health Sciences, Jamshoro, bipolar diathermy and silk suture was used for hemostasis in different cases. In contrast to our study, it was concluded that

although less time is consumed when using bipolar diathermy to achieve hemostasis during tonsillectomy, the ligation of bleeding point using silk sutures was more effective for less post operative hemorrhage^{32,32}. In the study of Raut et al²⁷ the overall reactionary hemorrhage was 4% while the overall secondary hemorrhage rate was 14% that seemed higher than the most figures quoted in our study. Also it is much higher in comparison to our study. Their study showed that bipolar scissors tonsillectomy was a relatively safe technique in children aged 10-16 years with a similar morbidity to the cold dissection method. O'Leary et al, Granell J et al^{31,33} concluded in their series that there was no difference in the rate of postoperative hemorrhage for the two methods.

In our study the rate of reactionary hemorrhage was 0. This shows that in a correct situation tonsillectomy can be performed safely as a day case surgery. Blakley BW et al²⁹ confirmed that the incidence of postoperative complications following adeno-tonsillectomy was very low (0-4.4%) and hence it was not the main factor that should dictate the length of stay. In the studies of the lose Granell et al³³ primary and secondary bleeding rates were 6.27% and 0.48% respectively. They concluded that an overnight stay does not necessarily improve the management of bleeding complications.

According to their review of current literature, the overall rate of post-tonsillectomy hemorrhage in children varied from 0.3% to 7.6%. Siddiqui et al³² based on the extremely unlikely event of a primary hemorrhage between 8-24 hours (0.1%), concluded that there was little benefit conferred overnight admission from the point of view of monitoring for primary hemorrhage. Paul Aylin et al³⁴ reported that the British NHS plan has predicted that 75% of all elective operations would be carried out as day cases. Also the American Academy of Head and Neck Surgery considers tonsillectomy to be safely performed on an outpatient basis with selected cases carefully.

In other study it has also been showed that the rate of primary hemorrhage was too low to dictate the length of stay. The wide variation of hemorrhage rates among different studies was probably due to different criteria used in the definitions³⁵. However all of these studies as well as ours considered adeno tonsillectomy safe as a day case procedure in patients that had inclusion criteria for day case tonsillectomy.

CONCLUSION

Proper post-operative care is needed with full anti-biotic coverage for at least 10 days to prevent secondary haemorrhage.

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CONFLICT OF INTEREST: Authors declare no conflict of interest

GRANT SUPPORT AND FINANCIAL DISCLOSURE NIL

AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Din IU:	Concept and design, data collection, manuscript writing.
Ullah S:	Data analysis and result interpretation.
Khan AR:	Critical review of the whole article.
Hafeez M:	Literature review, statistical analysis.
Muhammad G:	Reference collection.
Ullah N:	Bibliography, statistics.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

The Journal of Medical Sciences, Peshawar is indexed with WHO IMEMR (World Health Organisation Index Medicus for Eastern Mediterranean Region) and can be accessed at the following URL.

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