

## Frequency of Post Tonsillectomy Hemorrhage at Dhulikhel Hospital- Kathmandu University Hospital

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### ABSTRACT

**Background:** Tonsillectomy is one of the most common operations performed worldwide. Recent American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) clinical indicators specify that the patients with three or more infections of the tonsils per year may be considered candidates for tonsillectomy. Chronic tonsillitis and recurrent tonsillitis are the most common indications for tonsillectomy. Hemorrhage is the most common and serious complication following tonsillectomy.

**Objective:** To find out the frequency of post tonsillectomy hemorrhage at Dhulikhel Hospital- Kathmandu University Hospital.

**Materials and method:** This is a retrospective review of data retrieved from the record on tonsillectomy performed by cold dissection with hemostasis maintained by bipolar cautery performed between 1<sup>st</sup> January, 2016-30<sup>th</sup> June, 2017 and number of post tonsillectomy hemorrhage that took place in that period.

**Results:** Out of 119 tonsillectomies, 15 patients (12.6%) developed post tonsillectomy hemorrhage between 5<sup>th</sup> to 12<sup>th</sup> postoperative days. Out of 15 patients, 8 were male and 7 were female. The mean age of the patients reporting with secondary hemorrhage was 24.4 years. The mean number of days post-operatively after which the bleeding started was 6.7 days (range: 5<sup>th</sup> -12<sup>th</sup> post-operative day). Out of 15 patients, 12 developed hemorrhage during their stay at hospital.

**Conclusion:** Our study shows that prevalence of secondary hemorrhage at our hospital is 12.6%. Most of post-tonsillectomy hemorrhage is not life threatening and can be managed conservatively.

**Key words:** Cold dissection, Hemorrhage, Tonsillectomy, Tonsillitis

### INTRODUCTION

Tonsillectomy is one of the commonest procedures performed in otolaryngology. [1] Chronic tonsillitis is defined as persistent tonsillitis for 3 months and recurrent tonsillitis is occurrence of 3 or more than 3 period of tonsillitis in a year. [2] Recent American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) clinical indicators specify that the patients with three or more infections of the tonsils and or adenoids may be considered candidates for tonsillectomy. [3] The most common indication being recurrent and chronic tonsillitis, other indications include peritonsillar abscess, obstructive sleep apnea syndrome (OSAS) and for biopsy in suspected cases of tonsillar malignancy. [4,5] The main complications of tonsillectomy are post-operative hemorrhage, infection and pain. The most frequent and urgent complications are intraoperative and postoperative hemorrhage that can be primary or secondary. Hemorrhage may be divided into two broad categories; primary, occurring 24 hour post operation and secondary occurring 5- 10 days after the operation. [6,7] Secondary hemorrhage has been reported up to 21 days after surgery. [8] Despite improvements in surgical and anesthetic techniques, postoperative morbidity, mainly in the form of pain and hemorrhage, remains a significant clinical problem. [9] Occurrence of post-tonsillectomy hemorrhage is unpredictable and may become potentially life threatening. [10]

Our study represents profile of post-tonsillectomy hemorrhage at our hospital.

## MATERIALS AND METHODS

This is a retrospective study, of data retrieved from the record, on tonsillectomy performed by cold dissection with hemostasis by bipolar cautery which took place between 1<sup>st</sup> January, 2016-30<sup>th</sup> June, 2017 and number of post tonsillectomy hemorrhage that took place in this period. Total 119 patients underwent tonsillectomy with or without adenoidectomy for recurrent and chronic tonsillitis, as a part of surgeries like styloid process excision and Uvulopalatopharyngoplasty (UVPP). Data were entered in MS-EXCEL, tabulated, analyzed and expressed in percentage wherever required.

## RESULTS

Out of total 119 patients who underwent tonsillectomy, 68 were female and 51 were male. Maximum number of patients belong to age group of 21-30 years accounting for 40.3% (Table 1). Mean age was 20.6 years. Out of 119 patients, 92 patients (77.3%) underwent tonsillectomy for recurrent and chronic tonsillitis, 20 tonsillectomies (16.8%) were performed along with adenoidectomy, 6 tonsillectomies (5%) were part of styloid excision of Eagle's syndrome and 1 case (0.9%) was performed as a part of UVPP (Table 2). Out of 119 tonsillectomies, 15 post tonsillectomy hemorrhages (12.6%) occurred between 5<sup>th</sup> to 12<sup>th</sup> postoperative period during this period. Out of 15 post tonsillectomy hemorrhages, 12 patients (80%) developed post-operative hemorrhage during their stay at hospital whereas 3 (20%) patients presented with bleeding after being discharged. One patient was taken to operation theatre. Clots were removed and bleeding was controlled with bipolar electro cautery under general anesthesia. Two pints of whole blood was transfused. All other patients were managed with intravenous antibiotics and did not require other active intervention. Among 15 patients who

developed secondary hemorrhage, 8 were male and 7 were female (Fig 1). The mean age of the patients reporting with secondary hemorrhage was 24.4 years (range: 19-37 years), highest number of bleeding was seen in age group of 20-30 years (Table 3). The mean number of days post-operatively after which the bleeding started was 6.7 days (range: 5<sup>th</sup> -12<sup>th</sup> post-operative day).

Table-1 Age distribution of patients who underwent tonsillectomy

Age Group(in years)	Number	Percentage
0-10	26	21.9%
11-20	33	27.7%
21-30	48	40.3%
31-40	11	9.2%
41-50	1	0.9%
>51	0	0
<b>Total</b>	<b>119</b>	<b>100%</b>

Table-2 Indications of tonsillectomy

Indications of Tonsillectomy	Number	Percentage
Chronic and recurrent tonsillitis	92	77.3%
Along with adenoidectomy for OSAS	20	16.8%
As a part of Styloid Excision of Eagle's Syndrome	6	5%
As a part of UVPP for OSAS	1	0.9%
<b>Total</b>	<b>119</b>	<b>100%</b>

Table-3 Post-tonsillectomy hemorrhage in different age group

Age group(years)	Number	Percentage
10-20	2	13.3%
21-30	10	66.6%
31-40	3	20.4%
<b>Total</b>	<b>15</b>	<b>100%</b>

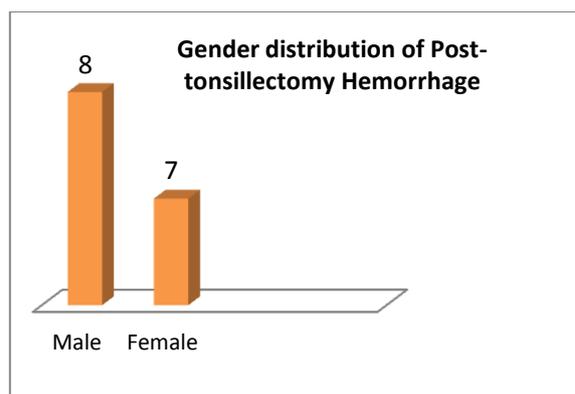


Figure-1

## DISCUSSIONS

The use of antibiotics post tonsillectomy has been advocated to quantitatively reduce the bacterial counts in the tonsillar fossa which is thought to be associated with reduction of post-

tonsillectomy bleeding as well as pain. [11] After tonsillectomy, oral flora colonize in a tonsillar fossa and may induce severe local inflammatory reaction through the action of chemical mediators such as lactic acid, leukotrienes and prostaglandins resulting in post-operative pain and possibly hemorrhage. [12]

In our study, post-operative hemorrhage rate is 12.6%. Benson R [13] found that 16% of patients had experienced some bleeding when contacted at 2 weeks post-operatively. In a recent study by Lowe D et al [14] out of 3306 patients undergoing elective adenotonsillectomy by five senior surgeons with different surgical techniques, they found late post-operative hemorrhage rate was as low as 1.78%. Another study found that postoperative hemorrhage after tonsillectomy with bipolar methods or coblation is three times higher compared to cold steel tonsillectomy alone. [15] In our study, male patient had slightly higher incidence of bleeding which is comparable with study by Windfuhr JP et al. [16]

The differences among papers with respect to bleeding rates after tonsillectomy are perhaps associated with different techniques of tonsillectomy. Post tonsillectomy hemorrhage risks may vary between 1.5% and 40.0%. [13] In a study, 430 tonsillectomy performed by cold dissection and suction cautery for hemostasis found postoperative bleeding to be 4% and proposed that excessive use of bipolar cautery causing deeper along with more extensive tissue necrosis leading to exposure of underlying large vessels when sloughing of eschar, could be cause of secondary hemorrhage. [17] The reason behind slightly high frequency of hemorrhage in our study may be because of use of bipolar cautery for hemostasis.

In another study conducted by Wieland BA et al [18] cold dissection was found to be safe method of tonsillectomy and risk of post-tonsillectomy bleeding was only 2.2%.

High frequency of bleeding in age group of 20-30 years in our study is

probably due to higher number of tonsillectomy performed in this age group.

## CONCLUSION

Our study shows that prevalence of secondary hemorrhage following tonsillectomy at our hospital is 12.6%. Although post tonsillectomy secondary hemorrhage is unpredictable, most of post-tonsillectomy hemorrhage are not life threatening and can be managed conservatively. The main limitation of our study is being a retrospective study and results will be better if we compare outcome of different methods of tonsillectomy in terms of post tonsillectomy hemorrhage.

**Conflicts of Interest:** There are no conflicts of interest.

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