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## PREVALENCE OF POST TONSILLECTOMY BLEEDING

### Aims and Objective:

The aim of this study was to find the incidence of post tonsillectomy hemorrhage by cold dissection method at Shree Birendra Hospital.

### Material and Methods:

This was a prospective study conducted between May 2012 to December 2012 in tertiary referral center, Shree Birendra Hospital. Hundred patients were included. Detail history and examination was done for patients undergoing tonsillectomy. Patients were counseled about post tonsillectomy pain and the advantage of early oral intake. Special emphasis was given about the post surgery hemorrhage and its treatment.

### Results:

Hundred patients were enrolled. Six had hemorrhage between third to seventh post operative day (POD). Four had hemorrhage during their hospital stay and 2 were readmitted. All the patients were started with intravenous antibiotics. One was taken to operation theater (OT) to remove clot in the tonsillar fossa but no active intervention was needed.

### Conclusion:

Our study had 6% secondary hemorrhage and none were significant to take active intervention.

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

## INTRODUCTION:

Tonsillectomy is a common surgical procedure for Otolaryngologist. Post tonsillectomy hemorrhage is the most serious complication which can be fatal at times. Its knowledge is of paramount importance to identify the cause and intervene timely and correctly. When it occurs within the first 24 hours after surgery it is called primary hemorrhage. It is generally related to surgical technique and the cause is opening of the vessel lumen. Secondary hemorrhage occurs after the first 24 hours and is common between fifth to tenth POD, which may last up to 28 days. It is due to environmental factors which influence oropharyngeal healing<sup>1</sup>. The cause could be due to falling off slough and infection. Primary hemorrhage ranges from 0.2-2.2%, whereas secondary hemorrhage is 0.1-3%<sup>2</sup>. Occurrence of post-tonsillectomy hemorrhage is unpredictable and potentially life threatening<sup>3</sup>.

This study will highlight post tonsillectomy hemorrhage profile of our hospital. With better understanding about the hemorrhage pattern and cause, it will help to minimize post tonsillectomy hemorrhage in future.

## MATERIALS AND METHODS:

Patients visiting Otolaryngology department of Shree Birendra Hospital for recurrent tonsillitis were evaluated and dated for tonsillectomy. When they visited a day before surgery, they were admitted and detailed history and examination was done. Performa was filled. They were counseled in detail regarding post tonsillectomy hemorrhage and its management. They were encouraged to chew and take normal food as early as possible normally from the same day post-surgery. The importance of which in recovery was well emphasized. Surgery was done by cold dissection tonsillectomy. Tonsil was held with tonsil holding forceps and dissected out from peritonsillar area with tonsillar dissector. Hemostasis was achieved by bipolar cautery. Per operative intravenous (IV) antibiotic was given which was continued on the day of surgery. Parenteral analgesics were generally not needed from first POD. Those who had pain received either IV ketorolac or intramuscular diclofenac. From first POD onwards oral medications were used: antibiotics, analgesics, hydrogen peroxide gargle and ranitidine. Depending on pain threshold and oral intake, patients were discharged from first POD onwards, mostly on third POD. Few who were not eating orally and complaining pain stayed till seventh POD. They were requested to come on weekly visit till a month or visit immediately if hemorrhage occurs.

## RESULTS:

Out of 100 patients, 2 underwent adenotonsillectomy and the rest had tonsillectomy. Age ranged from 4 to 65 with the mean age of 25.53 years. Fifteen patients were children, under the age of 14 and 85 were adults. Male female ratio was 60:40.

**Tab:1. Patient description of post tonsillectomy hemorrhage and management**

Case	Sex	Age	Hemorrhage POD	Management	IV antibiotics	Transfusion	Ligation of vessels
1	M	28	3,4	Evacuation of clot under IVA	+	-	-
2	M	31	5	-	+	-	-
3	F	31	7	-	+	-	-
4	M	33	4	-	+	-	-
5	M	26	7	-	+	-	-
6	M	23	4	-	+	-	-

*Note: '+' denotes provided, '-' denotes not provided*

Six out of 100 (6%) patients had post tonsillectomy hemorrhage between third to seventh POD. One patient had two episodes of hemorrhage, on third and fourth POD. He was still in hospital and was taken to Operation Theatre (OT). Under intravenous anesthesia, clot was removed from right tonsillar fossa and no bleeding point or vessels were seen. So no further intervention was done. Patient was kept on IV antibiotics. No further hemorrhage occurred. All other patients were started with IV antibiotics and became alright. None had significantly low hemoglobin to need further treatment, in fact they had minimal hemorrhage. Out of six, two had hemorrhage after they were discharged from hospital and rest four bled during their hospital stay.

## DISCUSSION:

The table 2 highlights the prevalence of secondary hemorrhage (Sec Hge) following tonsillectomy and its management. The initial two studies have similar prevalence as ours. Some data were not available and notified as NA. Bhattacharya N in a retrospective study of 685 patients undergoing tonsillectomy found (5.1%) 35 patients had hemorrhage. Five had primary and 30 secondary hemorrhage, 20 out of 35 required a procedure to control bleeding but none required transfusion. The study concluded that secondary hemorrhage post tonsillectomy occurs in 1 out of 20 adult undergoing tonsillectomy

Tab:2. Comparison of prevalence of post tonsillectomy hemorrhage and management

Author	Study type	Tonsillectomy Method	Primary Hemorrhage	Secondary Hemorrhage	Bleeding day	Cause	Intervention	Conservative
Al-Shehri AMS	Prospective	Traditional (Cold dissection + Diathermy)	NA	6.2% (9/97)	NA	NA	NA	NA
Moral SD, Barlin AKC, Acuin JM	Retrospective	Cold Knife	NA	7.4% (11/148)	4-12(8)	Heavy Physical Activity, Cough, No identifiable cause	NA	NA
Faramarzi A, Heydari ST	Prospective randomised clinical study	Cold dissection + Ligation + Bipolar Electrocautery	NA	2.33% (7/300)	NA		3 ligation under GA	4

Note: NA= No data

and more than half would require a procedure to control it<sup>6</sup>. However, our study did not require active intervention to control hemorrhage. In a retrospective study of 430 tonsillectomy by cold dissection, 0.23% and 3.7% of primary and secondary hemorrhage was noted and the highest incidence was on 8<sup>th</sup> POD. Excessive hemostasis by bipolar diathermy causing deeper and more extensive zone of necrosis and exposure of larger vessels when sloughing of the eschar could be the cause of secondary hemorrhage<sup>7</sup>. However, our study had minimal hemorrhage. Ali RB Smyth in a retrospective study using 220 patients claimed the lowest hemorrhage of 3.14% with cold steel and tie technique. They concluded that overall risk of hemorrhage is related to surgical technique<sup>8</sup>. Like our study, in a study with 13554 patients with tonsillectomy, cold dissection was found to be safe and relative risk for hemorrhage was 2.2% (1.3-3.7, P=0.0002)<sup>1,9</sup>. In contrast to our study in a prospective non randomized cohort study of 3087 cold dissection tonsillectomy, 57(1.85%) patients had reactionary hemorrhage, 1.85%. Hemorrhage was more than 500 ml in 16% of these cases<sup>10</sup>. 430 tonsillectomy by cold dissection and snare plus suction cautery for hemostasis found post-operative hemorrhage to be 4%<sup>7</sup>. In another study of 602 patients who under tonsillectomy with scissors and snare, and hemostasis with suture ligation and gauze pressure, 2.7% hemorrhage was reported<sup>11</sup>.

#### CONCLUSION:

Our study had six percent prevalence of post tonsillectomy secondary hemorrhage. However it was insignificant as all were managed conservatively with IV antibiotics. Only one was taken to OT and the blood clot was removed from tonsillar fossa. Though post tonsillectomy hemorrhage is unpredictable and life threatening, cold dissection tonsillectomy with bipolar diathermy hemostasis is safe. Hemorrhage may not be severe enough to intervene surgically. Minimal hemorrhage can be kept on observation and manage conservatively.

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