

Original Article

Post-Operative Complications of Tonsillectomy and Adenotonsillectomy at a Tertiary Care Hospital in Bangladesh

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Abstract

Background: Tonsillectomy & adenotonsillectomy are most frequently undertaken procedures in otolaryngology, represents approximately 20.0% to 40.0% of surgical procedures performed in this field. Episodes of post tonsillectomy and adenotonsillectomy haemorrhage are unpredictable and sometimes life threatening. **Objective:** The aim of this study was to find out the various post-operative complications in tonsillectomy, adenotonsillectomy; duration of operation and relation of post-operative haemorrhage with sex. **Methodology:** This prospective study was conducted department of otolaryngology-Head and Neck Surgery, Monno Medical College Hospital, Manikganj; from October 2024 to March 2025. We selected 130 patients undergoing tonsillectomy & adenotonsillectomy. **Results:** Maximum age group 59 (37.7%) were from 11-20 yrs. Maximum patients were male 71(54.61%) and sex ratio of male: female 1.2:1. In this study commonest indication was recurrent tonsillitis 67 (51.5%). Out of 130 patients only 15 patents developed complications. Complications that encountered after operation were haemorrhages both primary and secondary, 1(0.8%) and 6(4.6%) respectively. most of the patients 11(73.33%) were treated conservatively while 4(26.7%) patients were treated with interventional techniques. **Conclusion:** It is concluded from our study that postoperative bleeding was the commonest complication of tonsillectomy which was controlled mainly conservatively.

Keywords: Tonsillectomy; adenotonsillectomy; complications

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Introduction:

Tonsillectomy and adenotonsillectomy are commonly performed ENT operations in this country. In comparison to the frequency in which these operations are done in developed countries U.K and USA, it is much less frequently done in Bangladesh. The exact number of these operations done in this country is not yet available. Tonsillectomy and adenotonsillectomy are a widely performed surgical

procedure worldwide, particularly in the pediatric population¹. It is commonly indicated for conditions such as recurrent or chronic tonsillitis and obstructive sleep apnea that significantly impact the quality of life². The surgery involves complete removal of the tonsils and is typically conducted under general anesthesia³.

Extensive literature exists on the rates of complications associated with tonsillectomy & Adenotonsillectomy in

pediatric patients. A comprehensive meta-analysis predominantly focusing on this population reported a post-tonsillectomy hemorrhage rate of 3.3% cases⁴. Postoperative complications following tonsillectomy can vary in severity, ranging from minor issues to potentially life-threatening events. Common complications include bleeding, infection, prolonged pain, delayed healing, and adverse reactions to anesthesia⁵. Bleeding is a significant concern as it can lead to the formation of hematoma and compromise the airway, requiring urgent medical intervention⁶.

Effective management of postoperative complications is vital to ensure optimal patient outcomes. Treatment approaches depend on the nature and severity of the complication. For instance, cases of bleeding may require immediate surgical intervention or cauterization to control the bleeding source. Antibiotics are often prescribed to manage infections, while analgesics and anti-inflammatory medications help alleviate postoperative pain and discomfort⁷⁻⁸. Comprehensive preoperative assessments, including detailed medical histories, physical examinations, and laboratory investigations, are essential for identifying any risk factors^{9,10}. The purpose of this present study was to find out the various post-operative complications in tonsillectomy, adenotonsillectomy; duration of operation and relation of post-operative haemorrhage with gender.

Methodology

Study Settings and Population: This prospective study was conducted on the department of Otolaryngology & Head –Neck surgery, Monno Medical College, Manikganj, Bangladesh for a period of six (06) months from September 2024 to February 2025. In these six months duration 130 tonsillectomies and adenotonsillectomies were performed but only 15 patients developed complications and were included in the study.

Study Procedure: Patients suspected of recurrent tonsillitis & adenotonsillitis were evaluated properly by detailed history taking, demographic data, full otolaryngological symptoms, clinical and otolaryngological examination, past and family history and relevant investigation (pre-operative CBC and coagulation profile). Tonsillectomy and adenotonsillectomy done by Cold steel dissection technique or Bipolar or unipolar diathermy method under general anesthesia. Every patient was treated with antibiotics (Ceftriaxone), pain killer, antihistamine, hydrogen-peroxide/ povidone iodine (1%) mouth wash postoperatively. All the patients were Follow up on the first,

second, seventh, 14th day and till the tonsillar fossa healed. The patients presented ENT ward with complications, but tonsillectomy was performed in other hospitals and those who were lost from follow up were excluded from the study. All those patients having post-tonsillectomy & adenotonsillectomy complications presented to ENT ward were admitted into ward and intravenous line was maintained. Most of the complications were controlled conservatively and in some of the cases surgical interventions were carried out. After resuscitating the patients' detailed history was taken and thorough examination was done. Routine investigations were performed in all cases while specific investigations were carried out in some of the patients to find out the cause of complications.

Statistical Analysis: Computer based statistical analysis was carried out with appropriate techniques and systems. All data were recorded systematically in performed data collection form (questionnaire) and quantitative data were expressed as mean and standard deviation and qualitative data were expressed as frequency distribution and percentage. Statistical analysis was performed by using window-based computer software devised with Statistical Packages for Social Sciences (SPSS-17). Probability value <0.05 was considered as the level of significance.

Ethical Consideration: Ethical approval for the study was obtained from Institutional Review Board (IBR) of Monno Medical College, Manikganj, Bangladesh (Ref. No: IBR/MoMC/2025/13) on 05.07.2025. All participants were informed about the purpose and procedures of the study, as well as the confidentiality of their information. Written informed consent was obtained from all participants prior to enrollment.

Results

The age range of 130 patients was 3-62 years, maximum 59 (37.69%) were from 11-20 years followed by 41(31.53%) from 0-10 years (Table 1).

Table 1: Age distribution of the cases (n=130)

Age Group	Frequency	Percent
0 to 10 Years	41	31.5
11 to 20 Years	49	37.7
21 to 30 Years	16	12.3
31to 40 Years	18	13.9
41 to 50 Years	4	3.7
51to 60 Years	1	0.8
>60 Years	1	0.8
Total	130	100

Out of 130 patients 71(54.61%) were male and 59 (45.4%) were female (Figure I).

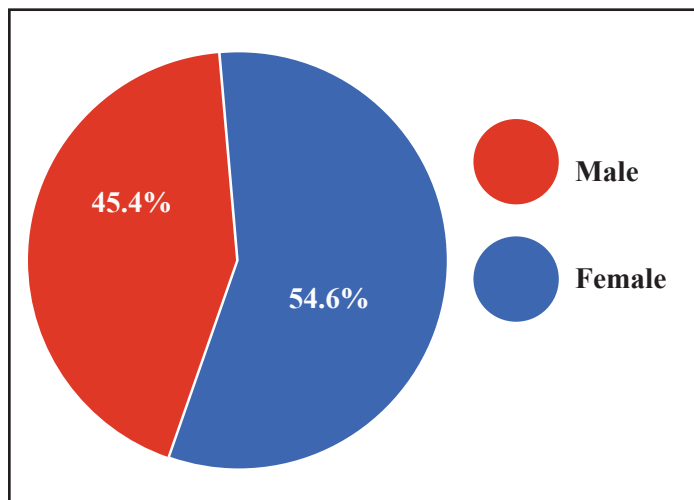


Figure I: Gender Distribution of the Study Sample (n=130)

Among the operations, only tonsillectomy was done in 81(62.30%) patients and adenotonsillectomy was done in 49(37.69%) patients (Table 2).

Table 2: Distribution of operations according to age (n=130)

Age Group	Tonsillectomy	Adenotonsillectomy	Total
0 to 10 Years	7	40	47
11 to 20Years	31	9	40
21 to 30Years	16	0	16
> 30 Years	27	0	27
Total	81	49	130

Among the indications of operation, Recurrent tonsillitis was highest 67 (51.53%), next to that was Enlarged adenoid & tonsils causing obstructive symptoms 48(36.92%), Eagles syndrome 8(6.15%) and others (Table 3).

Table 3: Indication of Operations (n=130)

Indication	Frequency	Percent
Recurrent tonsillitis	67	5.5
Enlarged adenoid & tonsils	48	36.9
Causing obstructive symptoms		
Eagle's syndrome	8	6.2
H/O Quinsy	4	3.1
Obstructive Sleep Aponia	3	2.3
Persistence of CSOM, OME	1	0.8
Total	130	100.0

Regarding duration of operation, maximum 68(52.30%) patients were operated on within 30 to 39 minutes, followed by 29(22.30%) patients within 20 to 29 minutes, 20(15.38%) and 17% patients within 40 to 49 minutes & others (Table 4).

Table 4: Duration of operation (including anesthetic time) (n=130)

Duration of Operation	Frequency	Percent
20 to 29 Minutes	29	22.3
30 to 39 Minutes	68	52.3
40 to 49 Minutes	20	15.4
50 to 59 Minutes	8	6.2
More than 60 Minutes	5	3.8
Total	130	100.0

Out of 130 patients only 15 patients developed complications. Maximum patient developed Secondary haemorrhage 6(4.61%); followed by Injury to lip, tongue, gum, post pillar of tonsils 3(2.30%); Edema of uvula & soft palate 2(1.53%), Nasal regurgitation 2(1.53%) and Primary hemorrhage 1(0.76%) (Table 5).

Table 5: Incidence of Post-Operative Complications of Tonsillectomy (n=130)

Complications	Frequency	Percent
Secondary haemorrhage	6	4.6
Injury to lip, tongue, gum, post pillar of tonsils	3	2.0
Edema of uvula & soft palate	2	1.5
Nasal regurgitation	2	1.5
Primary hemorrhage	1	0.8
Clot formation in tonsillar fossa	1	0.8

Out of 7 cases of haemorrhage, male patients were 2(28.6%) and female patients were 5(71.4%) (Figure II)

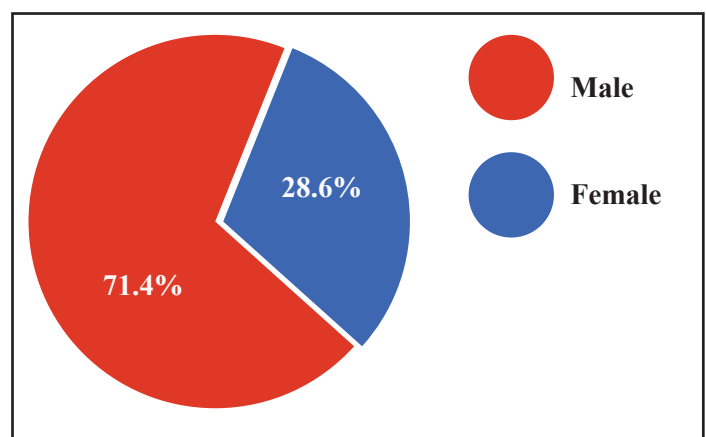


Figure II: Sex distribution of patient with haemorrhage (n=7)

Out of 7 cases of haemorrhage, bleeding occurred from right fossa were 4(57.14%), left fossa were 2(28.60%) & both fossa 1(14.3%) (Figure III).

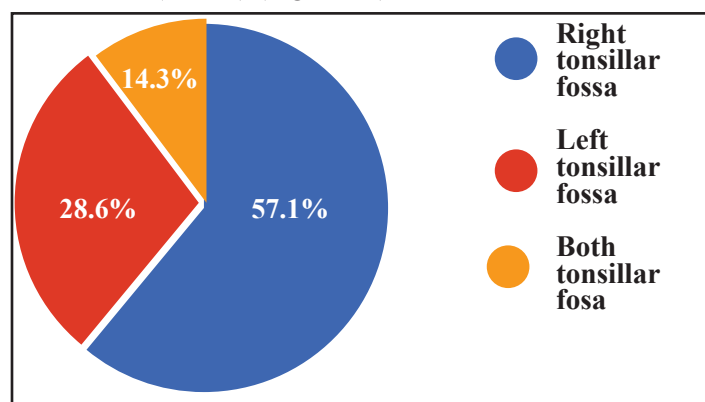


Figure III: Side distribution of haemorrhage

Most of the patients 5(33.3%) having complications presented to ENT ward between 2 to 10days after discharging from ward, followed by 1st day 3 (20.0%) on 1st day, 1-2 days 2 (13.3%) on 1 to 2 days (Table 6).

Table 6: Duration between operations and complications (n=15)

Duration after surgery	Frequency	Percent
Per operative complication	4	26.7
Post operative complications		
1st day	3	20.0
1-2 days	2	13.3
2-10 days	5	33.3
> 10 days	1	6.7
Total	15	100.0

After admitting the patients most of the patients 11(73.3%) were treated conservatively while 4(26.7%) patients were treated with interventional techniques. About 4(26.7%) patients received blood transfusion because they were in shock. One patient (25.0%) received one bag of blood, and 3 patients (75.0%) received multiple blood transfusions (Table 7).

Table 7: Treatments Modalities Applied in This Study (n=15)

Treatment Applied	Frequency	Percent
Conservative treatments		
Observation	7	46.7
Blood transfusion	4	26.7
Interventional treatments		
Cauterization of bleeders	2	13.3
Ligation of bleeders	1	6.7
Stitching pack in tonsillar fossa	1	6.7
Total	15	100

Discussion

Tonsillectomy is probably the most common operation performed by an otolaryngologist. One of the most significant complications is haemorrhage. In this study, we tried to find out the incidence of primary, reactionary, secondary haemorrhage after tonsillectomy. In our study maximum age group 59 (37.7%) were from 11 to 20 years. Study done by Arif et al¹¹ showed maximum age group within 4 to 15 years (44.6%) which is higher than our study. Sex distribution of the study sample showed 71(54.6%) were male and 59 (45.4%) were female. A study done by Han et al¹² showed male 53% and female 47% which is nearer to our study.

In our study most common indication was recurrent tonsillitis 67(51.53%), next to that was enlarged adenoid & tonsils causing obstructive symptoms 48(36.92%) A study done by Patel et al¹³ showed indication of tonsillectomy was recurrent tonsillitis 62.2% which is nearer to our study. In this Series the duration of surgery was 68(52.30%) patients were operated within 30 to 39 minutes, followed by 29(22.30%) patients within 20 to 29 minutes. Hoque et al¹⁴ showed within 20 to 40 minutes 77.14 % of patients operated which is higher to our study.

In our study, post operative haemorrhage was 5.4% cases; among them, primary haemorrhage was 0.76% and secondary haemorrhage was 4.6% cases. There was no reactionary haemorrhage. A study done by Rao et al¹⁵ showed post operative haemorrhage was 5.1%, which is nearer to our study. Another study done by Arif et al¹¹ showed secondary haemorrhage was 5.9%, which is higher than our study. In relation to sex, out of 7 cases of haemorrhage, male patients were 2(28.6%) and female patients were 5(71.4%). Dhaduk et al¹⁶ showed Females were found to have higher rates of hemorrhage when compared to males.

Out of 7 cases of haemorrhage, bleeding occurred from right fossa were 4(57.14%) cases, left fossa were 2(28.60%) cases and both fossa 1(14.3%) cases. A study done by Xu et al¹⁷ showed out of 61 cases of haemorrhage, bleeding occurred from right fossa were 29(47.544%), left fossa was 25(40.9%) and both fossa 7(11.4% which is nearer to our study.

In our study most of the complications (60.0%) were reported at 2 to 10 days of surgery which simulates the study of Cheung et al¹⁸ having 70.0% patients presented after 4 days of surgery which is nearer to our study. In this study 62.0% of complications were controlled with conservative treatment which is supported by study of Qureshi et al¹⁹ and Abdel-Rahman²⁰ who also controlled 7

6.0% cases and 68.0% cases of complications with conservative treatment respectively. In this study 13(37.0%) cases were treated with different surgical techniques to overcome the complications. Cheung et al¹⁸ showed Surgical intervention for cessation of hemorrhage was required in 88 (30%) patient which was nearly similar to our study.

Conclusion

From this study we can conclude that hemorrhage after tonsillectomy may occur on few occasions and it is more common in female patients. The other complications like tonsillar bed infection & Trauma to lip, tongue, palate and posterior pharyngeal wall may occur in a significant number of cases. However, the results of the present study may not be representative of overall situation as it was carried out with a limited number of patients in a limited span of time.

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Conflict of Interest: There was no conflict of interest to any of the authors.

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