

Original Article

Is there any role of post operative antibiotics in reducing secondary haemorrhage after tonsillectomy

**Mohammad Shah Kamal¹, Rubina Farzana², Ahmed Tariq³,
Abu Hena Mohammad Parvez Humayun⁴**

Abstract:

Objective: To compare with and without the antibiotic therapy in reducing post-tonsillectomy secondary haemorrhage.

Method: A prospective study was conducted at Shaheed Shamsuddin Ahmed Hospital, Sylhet from April 2010 to April 2012. 170 patients who underwent tonsillectomy divided into two groups randomly each consisting of 85 patients. In group A (intervention group) - antibiotic was given post-operatively, while in group B (control group) - no antibiotic was given. Postoperative follow-up was done till the tonsillar fossa healed.

Results: Among 170 patients 61.18% were female and 38.82% were male, mean age was 21.58 years. One patient from antibiotic group had secondary haemorrhage (1.18%), while no haemorrhage was observed in non- antibiotic group. Secondary haemorrhage rate was 0.59% in total study population.

Conclusion: The study showed that antibiotic did not have any significant role in reducing the post-tonsillectomy secondary haemorrhage.

Key words: Tonsillectomy; antibiotic; secondary haemorrhage

1. Junior Consultant (ENT), Shaheed Shamsuddin Ahmed Hospital (Sadar hospital), Sylhet, Bangladesh.
2. Indoor Medical Officer, Paediatrics, MAG Osmani Medical College Hospital, Sylhet, Bangladesh.
3. Medical Officer, Deputed to Department of Otolaryngology and Head-Neck surgery, BSMMU, Dhaka, Bangladesh.
4. Medical Officer Against Junior Consultant, ENT, 100 bedded District Hospital, Narsingdi, Bangladesh.

Address of Correspondence: Mohammad Shah Kamal. Junior Consultant (ENT), Shaheed Shamsuddin Ahmed Hospital (Sadar hospital), Sylhet. Mobile: 01817570359, E mail: dr.shahkamal@gmail.com

Introduction:

Tonsillectomy is one of the most frequently performed surgical procedures in the field of otolaryngology, representing approximately 20-40% of the total procedures^{1,2}. Approximately 2,50,000 tonsillectomies with or without adenoidectomy are performed in the United States each year³. The traditional methods for removing the tonsils are the 'cold steel' techniques using conventional metallic instruments. Cold steel dissection may be combined with diathermy to aid haemostasis; many surgeons prefer ties or swabs. In the NPTA (National Prospective Tonsillectomy

Audit, UK) the use of 'cold steel' dissection without diathermy was associated with the lowest haemorrhage rate⁴.

The main complications of tonsillectomy are pain, infection and haemorrhage¹. Haemorrhage is defined as reactionary, occurring within 24 hours of operation, secondary, occurring after 24 hours and during the phase of healing of the tonsillar bed, commonly 5-10 days after operation^{1, 5}. Secondary haemorrhage after tonsillectomy has been reported 1 to 7.1% in different literatures leading to re-admission in hospital^{6,7}.

After tonsillectomy the tonsillar fossa heals by secondary intention. It is contaminated by bacterial commensals naturally present in the oropharyngeal mucosa⁸. Several authors stated that, this predisposes an inflammatory reaction and infection, increasing postoperative morbidity. Therefore, they recommended prophylactic post operative antibiotics to reduce the morbidity⁹.

It has traditionally been assumed that post tonsillectomy secondary haemorrhage is caused by infection, despite a lack of evidence to support this¹⁰. Ahsan et al found no evidence of infection in patients with post tonsillectomy secondary haemorrhage. In fact, a number of studies have demonstrated that the use of prophylactic antibiotics has no significant effect on the subsequent complication rates^{1, 7, 10, 11}.

Therefore, there are considerable variations in practice worldwide: a recent study from the UK showed that only 12% of otolaryngologists routinely prescribe post operative antibiotics¹² while another study showed a figure of 79% among American otolaryngologists¹³.

To investigate the role of antibiotics in reducing secondary haemorrhage after tonsillectomy

we selected 170 patients who underwent tonsillectomy. Tonsillectomy was done by Cold steel dissection technique and bipolar diathermy. Post operatively the patients were randomly selected into two groups each comprising 85 patients. Group A (case group) was given antibiotics (amoxicillin and cloxacillin) with analgesic (diclofenac sodium and paracetamol), and hydrogen peroxide mouthwash. Group B (control group) - treated with only analgesic (diclofenac sodium and paracetamol), and hydrogen peroxide mouthwash without antibiotics. Postoperative follow-up was done till healing of the tonsillar fossa.

Methods:

Aim and Objective: To see the role of antibiotics in reducing secondary haemorrhage after tonsillectomy operation.

Type of Study: Prospective study

Study Place: Inpatient department of Shaheed Shamsuddin Ahmed (Sadar) Hospital, Sylhet.

Study Period: April 2010 to April 2012.

Sample population: 170 patients of tonsillectomy.

Methods of sampling: Cases were selected randomly from the patients who underwent tonsillectomy with chronic/ recurrent acute tonsillitis.

Technique of tonsillectomy: Cold steel dissection technique and bipolar diathermy haemostasis under general anaesthesia.

Data collection: Relevant data were collected in a pre-formed data collection sheet for each of the patient who underwent tonsillectomy.

Post operative management: In post operative period we randomly selected the patients into two equal groups each comprising of 85 patients. Group A (case group) was given antibiotics (amoxicillin and cloxacillin) with analgesic (diclofenac sodium and

paracetamol), and hydrogen peroxide mouthwash. Group B (control group) - treated with only analgesic (diclofenac sodium and paracetamol), and hydrogen peroxide mouthwash without antibiotics. Postoperative follow-up was done till the tonsillar fossa healed. Ethical approval was obtained from the hospital authority, while informed written consent was taken from the patients before the study.

Postoperative follow-up: Post-operative follows up was done till healing of the tonsillar fossa.

Results:

Table-I
Mean age of the cases (n=170)

Group	Mean age (years)
Group A	22.21
Group B	20.95
Total	21.58

Table-I shows the mean age of the patients in group A was 22.21 years and in group B 20.95 years.

Table-II
Sex distribution of the cases (n=170)

Group	Sex	Number	Percentage
Group A	Female	51	60%
	Male	34	40%
Group B	Female	53	63.35%
	Male	32	37.64%
Total	Female	104	61.18%
	Male	66	38.82%

Table-II shows 61.18% patients were female, 38.82% patients were male.

Table-III
Incidence of secondary Haemorrhage in patients (n=170)

Groups	Total Cases	No haem-orrhage	Haemo-orrhage	Percentage
Group A	85	84	01	1.18
Group B	85	85	0	0
Total	170	169	01	0.59

Table-III shows secondary haemorrhage was seen in 1 case from the group A (antibiotic group), no incidence of haemorrhage in group B (non-antibiotic) group. Incidence of secondary haemorrhage was 0.59 % in total study population.

Discussion:

As tonsillectomy is one of the most commonly performed operation by an Otolaryngologist, post-operative haemorrhage is a major concern. Episode of post tonsillectomy haemorrhage is unpredictable and often potentially life threatening. Based on severity of haemorrhage, it can be classified as mild (no active surgical management), moderate (requiring surgical intervention), or severe (requiring surgical intervention and blood transfusion).

In our study, among 170 patients 61.18% were female and 38.82% were male, the age of the patients in the study ranged from 6 years to 55 years with a mean age was 21.58 years. One patient from antibiotic group had secondary haemorrhage (1.18%), while no haemorrhage was observed in non- antibiotic group. Secondary haemorrhage rate was 0.59% in total study population. Patients had mild bleeding from mouth on 5th post operative day and no active treatment was needed except gargle with ice and hydrogen peroxide.

In comparison to clinical results demonstrated from this study we see Qureshi et al¹⁴ found

incidence of secondary haemorrhage in 3.4% cases. He didn't mention the use of antibiotic in post operative period. Baloch MA et al¹⁵ showed, incidence of secondary haemorrhage was 5% and antibiotics did not have any significant impact in reducing the post-tonsillectomy morbidities. Ranajit et al⁷ found incidence of secondary haemorrhage 7.1%, and again use of post-operative antibiotics did not affect the incidence of haemorrhage.

It has traditionally been assumed that post tonsillectomy secondary haemorrhage is a result of secondary infection, antibiotics are routinely prescribed; despite a lack of evidence to support this¹⁰. Ahsan et al¹ found no evidence of infection in patients with post tonsillectomy secondary haemorrhage. Kumar found that of 24 patients with secondary post-tonsillectomy haemorrhage who were not on antibiotics, only four had a positive culture on throat swab¹¹. Therefore bacterial infection as an aetiology is questionable.

A more plausible explanation is that sloughing of the primary eschar, which usually occurs between day 5 and day 10 in the post-operative period, manifests as a secondary haemorrhage¹⁶. Further support of this theory comes from the large prospective audit of tonsillectomies conducted in UK, in which diathermy dissection was found to increase the risk of secondary haemorrhage. The authors concluded that compared to traditional cold steel, diathermy dissection causes more tissue damage and hence a larger eschar formation, thus conferring a higher risk of secondary haemorrhage¹⁷.

Due to high potential for contamination by commensals, culture results of the tonsillar bed are difficult to interpret. Hence the definition and incidence of post-tonsillectomy infection are unclear. Clinically worsening pain, continuing inability to resume to normal diet

and raised temperature are considered features of infection and these patients are typically administered antibiotics¹⁸. Any putative benefit of antibiotics also need to be carefully weighed against the risk of adverse events and other negative consequences that are more difficult to evaluate and quantify, such as the possible emergence of resistant bacteria and fungal colonization and infection.

Conclusion:

In this study, secondary haemorrhage rate was 0.59%. Use of antibiotics after tonsillectomy operation did not have any role in reducing the incidence of secondary haemorrhage. Therefore antibiotics should be prescribed in a few selected cases where indicated.

References:

1. Ahsan F, Rashid H, Eng C, et al .Is secondary haemorrhage after tonsillectomy in adults an infective condition? Objective measure of infection in a prospective cohort. Clin Otolaryngol 2007; 32 (1): 24-7.
2. Evans AS, Khan AM, Young D, et al. Assessment of secondary haemorrhage rates following adult tonsillectomy-a telephone survey and literature review. Clin Otolaryngol Allied Sci 2003; 28 (6): 489-91.
3. Schamidt R, Herzog A, Cook S, et al. Complications of tonsillectomy. Arch Otolaryngol. Head Neck Sur 2007; 133: 925-928.
4. National Prospective Tonsillectomy Audit (NPTA), UK, available on the Royal College of Surgeons of England website (www.rcseng.ac.uk).
5. McKerrow WS, Clarke R. Tonsillectomy In: Gleeson M.(editor).Scott-Brown's Otorhinolaryngology, Head and Neck

- Surgery, seventh edition, vol.1, London; Hodder Arnold 2008; 5/4/26.
6. Cowan DL, Hibbert J. Acute and chronic infection of the pharynx and tonsils. In: Kerr AG (editor). Scott-Brown's Otolaryngology, sixth edition, vol.5, London; Butterworth & Co. Ltd 1997; 5/4/21.
 7. Ranjit S, Brett RH, Lu PKS, Aw CY. The Incidence and Management of Post-Tonsillectomy Haemorrhage: A Singaporean Experience. Singapore Med J 1999; 40(10): 622-6.
 8. Telian SA, Handler GR, Baranak CC, Wetmore RF, Potsic WP. The effect of antibiotic therapy on recovery after tonsillectomy in children. A controlled study. Archives of Otolaryngology-Head and Neck Surgery 1986; 112(6): 610-5.
 9. Dhiwakar M, Clement WA, Supriya M, McKerrow W. Antibiotics to reduce post-tonsillectomy morbidity. Cochrane Database of Systemic Reviews 2010, Issue7. Art. No: CD005607. DOI: 10.1002/1465188.CD00607.pub3
 10. Blair RL, McKerrow WS, Carter NW et al. The scottish Tonsillectomy Audit: Audit Subcommitte of the Scottish Otolaryngological Society. J Laryngol Otol 1996; 110: 1-25.
 11. Kumer R. Secondary haemorrhage following tonsillectomy/adenoidectomy. J Laryngol Otol 1984; 98: 997-998.
 12. Dhiwakar M, Brown PM. Are adjuvant therapies of tonsillectomy evidence based? J Laryngol Otol 2005; 119(8): 614-9.
 13. Krishna P, LaPage MJ, Hughes LF, Lin SY. Current practice patterns in tonsillectomy and perioperative care. International Journal of Pediatric Otorhinolaryngology 2004; 68(6): 779-84.
 14. Qureshi S, Tirmizi S, Sulehri A. Occurrence of post-tonsillectomy haemorrhage in pediatric age group. Pakistan Journal of Otolaryngology 2010; 26: 56-57.
 15. Baloch MA, Akhter S, Ikram M, Humayun HN. The rationality of prescribing antibiotics after tonsillectomy. J Pak Med Assoc 2012; 62(5): 445-47.
 16. Krishna P, Lee D. Post- tonsillectomy bleeding a meta-analysis. Laryngoscope 2001; 111: 1358-61.
 17. Lowe D, van der Meulen J. National Prospective Tonsillectomy Audit. Tonsillectomy technique as a risk factor for postoperative haemorrhage. Lancet 2004; 364(9435): 697-8.
 18. Murthy P, Laing MR. Dissection tonsillectomy: pattern of post-operative pain, medication and resumption of normal activity. J Laryngol Otol 1998; 112(1): 41-4.