Volume 20 Issue 48
Originally issued as J7



Global Journal of Medical Research: J
Dentistry & Otolaryngology
Volume 20 Issue 7 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Spongstan with Nasopharyngeal Pack: New Ordinary Procedure Manage the Adenoidectomy Bleeding

By Dr. A H M Delwar
Comilla Medical College

Abstract- *Objective:* To find out the frequency, prevalence, and epidemiological aspects of the adenoidectomy bleeding and share the new ordinary procedure to manage it by spongstan with the nasopharyngeal pack.

Study Design: Cohort retrospective study.

Setting: Academic tertiary care hospitals.

Subject and Methods: A total of 23 adenoidectomy children's demographic data collection and analyzed who suffered from complications of bleeding in the department of Otolaryngology and Head-Neck Surgery, Comilla Medical College Hospital, and Comilla Medical Centre, concerned Clinic of Central Medical College from 01 July 2016 to 31 June 2019.

Results: Incidence of adenoidectomy bleeding among total operative patients was 0.32%, adenoidectomy-Tonsillectomy patients 2.66%, and the yearly prevalence of 33.35%. Off them, the male was 09 (39.17%), and the female 14 (60.87%), 11-15 years children have highest bleeding complications was 17 (73.91%), commonest presenting features was nasal obstruction (91.30%), mouth breathing (82.61%), and hearing loss (78.26%).

Keywords: *adenoidectomy, bleeding, children, spongstan, nasopharyngeal pack.*

GJMR-J Classification: *NLMC Code: WV 300*



SPONGSTANWITHNASOPHARYNGEALPACKNEWORDINARYPROCEDUREMANAGETHEADENOIDECTOMYBLEEDI

Strictly as per the compliance and regulations of:



© 2020. Dr. A H M Delwar. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Spongstan with Nasopharyngeal Pack: New Ordinary Procedure Manage the Adenoidectomy Bleeding

Dr. A H M Delwar

Abstract- Objective: To find out the frequency, prevalence, and epidemiological aspects of the adenoidectomy bleeding and share the new ordinary procedure to manage it by spongstan with the nasopharyngeal pack.

Study Design: Cohort retrospective study.

Setting: Academic tertiary care hospitals.

Subject and Methods: A total of 23 adenoidectomy children's demographic data collection and analyzed who suffered from complications of bleeding in the department of Otolaryngology and Head-Neck Surgery, Comilla Medical College Hospital, and Comilla Medical Centre, concerned Clinic of Central Medical College from 01 July 2016 to 31 June 2019.

Results: Incidence of adenoidectomy bleeding among total operative patients was 0.32%, adenoidectomy-Tonsillectomy patients 2.66%, and the yearly prevalence of 33.35%. Off them, the male was 09 (39.17%), and the female 14 (60.87%), 11-15 years children have highest bleeding complications was 17 (73.91%), commonest presenting features was nasal obstruction (91.30%), mouth breathing (82.61%), and hearing loss (78.26%). Maximum patient came from the village was 14 (60.82%). Laboratory investigations included complete blood count (CBC), Bleeding time (BT), Clotting time (CT), Prothrombin time (PT), and Activated partial thromboplastin time (APTT) for all children. Radiological investigations exhibited according to Cohen et al. grade-4 was highest presentation 12 (52.18%). I used St. Clair Thompson's adenoid curette to remove the adenoid tissue following the conventional method. The type of bleeding, Primary was 04 (17.39%), reactionary 18 (78.26%), and Secondary 01(4.35%). The primary and reactionary 22 (95.65%) patients treated by Spongstan and usual wet ribbon gauze pack, and secondary 01 (4.35%) patient managed by an only nasopharyngeal pack and changed the antibiotic.

Conclusion: Every surgical procedure has a common complication of bleeding. Adenoidectomy is one of the commonest surgery for the pediatric age group in which we blindly curette the adenoid-many options implicated to save the children's life from this risky complication. I introduced the simple process spongstan with a wet ribbon gauze pack placed at nasopharynx for 18 to 24 hours, which is enough to stop the bleeding.

Keywords: adenoidectomy, bleeding, children, spongstan, nasopharyngeal pack.

Author: MBBS, DLO, MCPS (ENT), MRCPS (Glasgow) UK, FMRC (USA), Associate Professor of Otolaryngology, Comilla Medical College, Comilla, Postcode-3500, Bangladesh.
e-mail: mamun.delwar196@gmail.com

I. Introduction

Adenoid is a nasopharyngeal lymphoid aggregation of tissue which described by the Santorini and Wilhem Meyer in 17th and 18th century. The adenoid receives a rich arterial supply from branches of the facial and maxillary arteries and the thyrocervical trunk; venous drainage is to the internal jugular and facial veins [1]. From five months, it increases rapidly, most enlargements are seen in 07 years and after 15 years, it regresses [2]. As a part of Waldeyer's ring, adenoid has an important role in the development of antibodies and immunological memory [3]. Adenoidectomy between the ages of 04-10 years doesn't show any immunological deficiency [4]. Enlarged adenoids develop chronic nasal obstruction and obligate mouth breathing, causing the pathological manifestation of obstructive sleep apnea, rhinitis, rhinosinusitis, otitis media, otitis media with effusion and acute and chronic upper and lower respiratory tract infection [5]. A full pediatric ENT clinical history and excluding the family history of unusual bleeding or bruising, routine clotting screening may not confirm the mild Von willebrand disease [6]. Naso-endoscopy is the best process to assess the adenoid size, if not for the uncooperative children's adenoid size may be estimate by lateral x-ray of nasopharynx [7]. During surgery, mirror examination or palpation is a poor measurement of adenoid hypertrophy [8]. In the UK, 79.2% of surgeons use digital palpation and blind curettage, while only 8.1% use suction coagulation under direct vision [9]. Except for blind curettage and suction diathermy, other methods of adenoidectomy include coblation, microdebrider, and laser adenoidectomy, which has a high unit of cost [10] [11] [12]. The reactionary bleeding is rare, which occurs within 24 hours after adenoidectomy, showed less than 0.7% [13]. The management of reactionary bleeding is immediate transfer of the patient to operation theatre and post-nasal packing, which left for 24 hours [14]. Due to aberrant ascending pharyngeal artery, secondary bleeding may occur, which is rare [15].

II. Methods and Materials

During the three years period, 149968 patients attended in the out-patient department of

© 2020 Global Journals

Otolaryngology and Head-Neck Surgery of the two tertiary care hospitals. Of them, 7099 patients got admitted to the hospitals for different types of operations, and adenoidectomy-tonsillectomy was 864. I did adenoidectomy-tonsillectomy of all patients. We followed the traditional method of adenoidectomy, digital palpation of the adenoid, and medialisation of the adenoid by finger dissection from both lateral sides. I used the proper size of St. Clair Thompson's curette for adenoidectomy in a neutral position without sand bag under the shoulder. After curette, I examined by finger palpation to see any residual tissue present in the nasopharynx; if present, I curette again and again up to tissue removal. I placed wet ribbon gauze in the nasopharynx and placed a sand bag under the shoulder to extend the neck. I removed the gauze and see the bleeding point by retraction of the soft palate and uvula with anterior pillar retractor. I used the diathermy sucker nozzle to cauterize the bleeding point. When bleeding stops, I again placed ribbon gauze in the nasopharynx and tonsillectomy completed by unipolar diathermy. After complete tonsillectomy, I remove the gauze from adenoid and again recheck the nasopharynx for bleeding. I got 23 patients bleeding from adenoid in which primary bleeding was 04, reactionary bleeding 18, and secondary 01. 22 primary and reactionary bleeding managed by spongstan which trade name is cutanplast made in Italy, with usual ribbon gauze pack, 01 secondary bleeding manged by ribbon gauze pack only.

The primary bleeding occurs in the operation table may be under anesthesia after complete the operation or reversal from anesthesia, noticed by the anesthetist. I again placed the Boyle-Davis mouth gag with a tongue blade and retracted the uvula and soft plate to see the bleeding point and trying to cauterize the bleeding point with diathermy sucker nozzle. If failed placed the spogstan in the nasopharynx, then wet ribbon gauze from choanae to every side of nasopharynx up to the soft palate, which creates pressure on nasopharynx to stop bleeding and cutting the rest of gauze piece. So externally, nothing is available to see. I counseled the parents that the child is breathing through the mouth, and they awake the whole night to see the child breathing normally or feeling any difficulties through the mouth or any bleeding coming through the angle of mouth or nose. If it occurs, they promptly notice it to the Nurse or Doctors. It didn't occur during the period of study. The patient stayed the whole night in the postoperative room. I removed the nasopharyngeal pack with spongstan after 18 to 24 hours without any bleeding.

The reactionary bleeding occurs up to 24 hours after the patient transfer from operation theatre usually occurs half an hour or one hour after the operation. The child instantly transfers to the operation theatre and again placed Boyle –Davis mouth gag as before and the management like the primary bleeding without anesthesia. The secondary bleeding is after 24 hours of operation up to the healing of the wound. In the secondary bleeding, the patient came at the 10th postoperative day. I suction, and clean the patient's nose, nasopharynx and mouth to establish the bleeding point from tonsil or adenoid. After confirmation, I placed a ribbon gauze pack in the nasopharynx and removed after 24 hours. At the same time started the parental antibiotic, test the hemoglobin which showed 06 gm/dl and transfused one unit of blood. The following information collected about the patient: Gender, age, types of bleeding, presenting features, personal history, laboratory investigation, radiological grading of adenoid size, and treatment. Descriptive statistics used to calculate the data. Figures and tables cited by Microsoft office 2007.

III. Results

Incidence of adenoidectomy bleeding among total operative patients was 0.32%, adenoidectomy-Tonsillectomy patients 2.66%, and the yearly prevalence of 33.35%. Off 23, the male was 09 (39.13%), and the female 14 (60.87%), 0-5 years were 01 (4.35%), 06-10 years 05 (21.74%), 11-15 years 17 (73.91%), lowest age 05 years, highest age 15, mean age 11.04, and the standard deviation 2.061. The type of bleeding showed primary bleeding was 04 (17.39%), reactionary bleeding 18 (78.26%), and secondary bleeding 01 (4.35%). The presenting features revealed nasal obstruction was 21 (91.30%), mouth breathing 19 (82.61%), hearing loss 18 (78.26%), snoring 15 (65.22%), frequent cold attack 13 (56.52%), and infrequent earache 06 (26.09%). Personal history exhibited villagers was 14 (60.87%), slum dweller was 07 (30.43%), and urban 02 (8.70%). Laboratory investigations included: 1. Complete Blood Count, 2. Bleeding Time, 3. Clotting Time, 4. Prothrombin Time, 5. Activated Partial Thromboplastin Time. Radiological investigation exhibited according to Cohen et al. grade-2 was 03 (13.04%), grade -3 08 (34.78%) and grade-4 12 (52.18%). The primary and reactionary 22 (95.65%) patients treated by Spongstan and wet ribbon gauze pack, and secondary 01(4.35%) patient managed by only ribbon gauze pack, changed the antibiotic to parental route and one unit blood transfused the patient due to low hemoglobin 6mg/dl.

© 2020 Global Journals

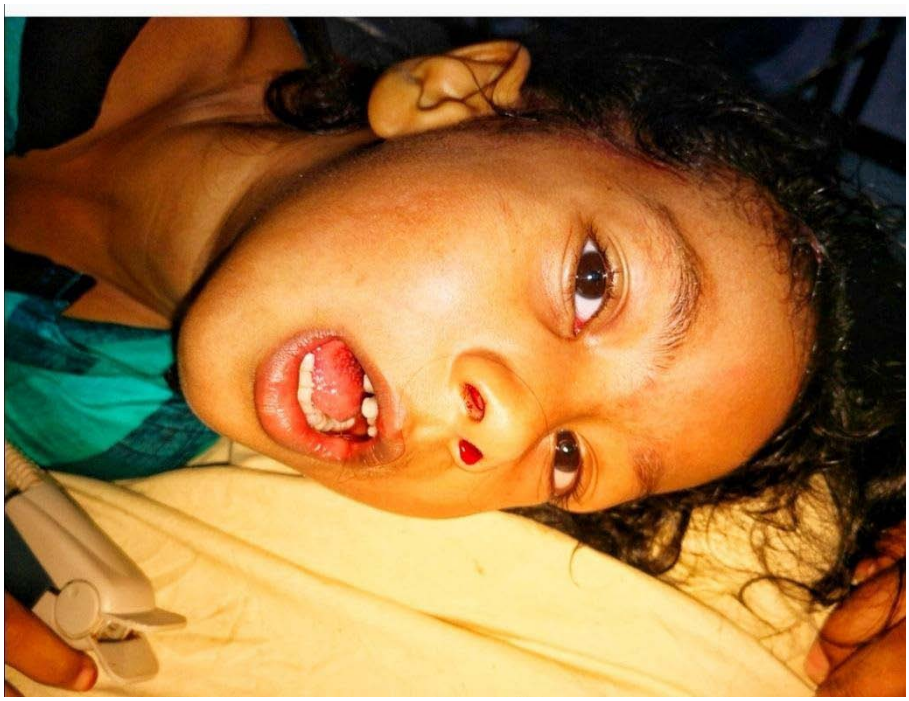


Figure-1: With Spongstan and Nasopharyngeal pack of an Adenoidectomy child after reactionary bleeding.



Figure-2: Usually used as a postnasal pack, twisted portion in nasopharynx and free portion anchored on cheek by micropore surgical tape.

© 2020 Global Journals



Figure-3: Cutanplast and wet ribbon gauze.

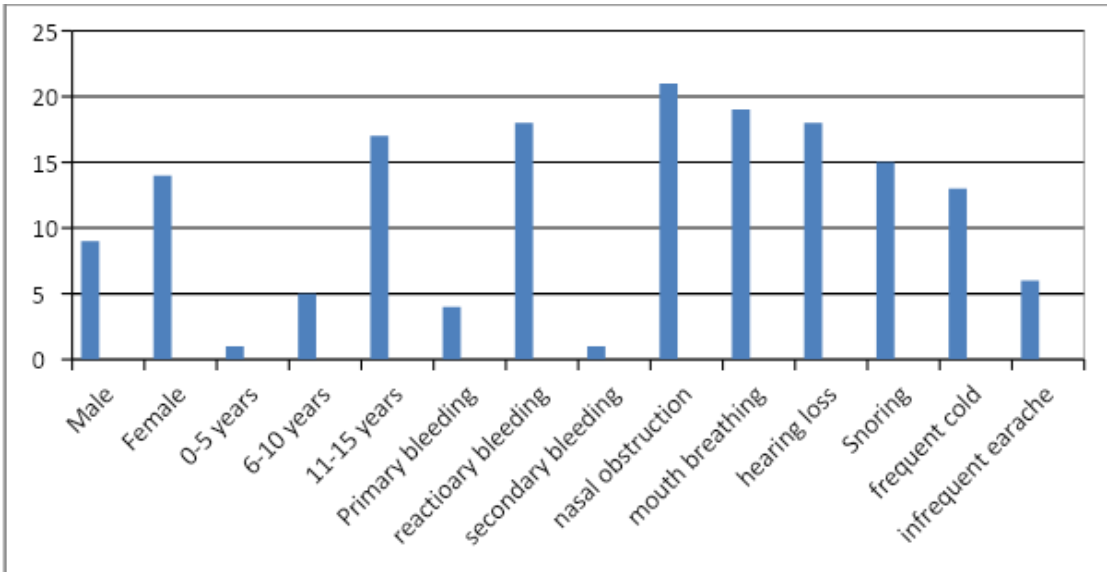


Figure-4: 1.Gender distribution. 2. Age. 3. Type of bleeding. 4. Presenting features.

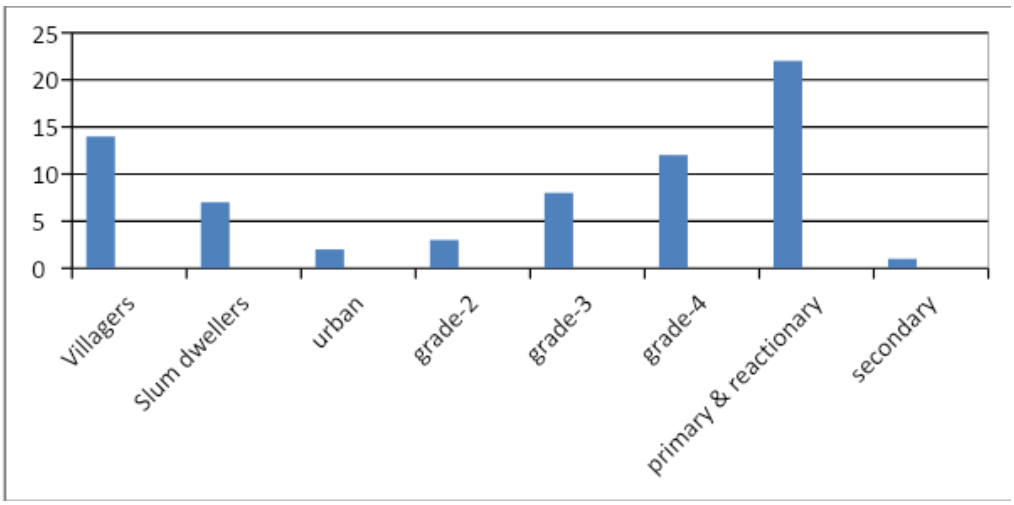


Figure-5: 1. Personal history. 2. Radiological grading. 3. Treatment procedure.

© 2020 Global Journals

IV. Discussion

Adenoidectomy is the most frequently performed surgical procedure. In the present study, the incidence of bleeding was o.32% and 2.66 % in a differents point of view supported by Maniglia, Zwack, and Windfuhr et al. series showed incidence accordingly 1989 0.28%, 1997 0.98%, and 2005 1.5% [16] [17] [18].

Considering gender epidemiology, the females (60.87%) were higher than the males (39.13%) in our work held up by Arnolder C, and Rycza T et al. study reported accordingly 58% and 56.1% was female [19] [20]. Silva BSRD et al. series exhibits the males were 52.3 % and the females 47.7% against our research, but Colclasure JB et al. revealed there is no males females preponderance [21] [22]. It may be due to the female children of Bangladesh engage in household work like cleaning and washing causing the frequent attacks of cold and developing recurrent adenoiditis-Tonsillitis.

Regarding age, the incidence of bleeding highest in older children 11-15 years was 73.91% in our series kept up by Voltonen HJ showed more bleeding over ten years older children and Arnolder et al. reported over15 years of age bleeding was 2.19 % [23] [19].

The types of reactionary bleeding occurred within half and one hour after the operation in our presentation kept up by Rycza T, McCormick ME, and Windfuhr JP et al. series interpreted postoperative bleeding mostly occurred within 24 hours [20] [24] [25]. McCormick showed complication rate was 2-10% and mortality rates about 1 in 16000. Windfuhr JP exhibited secondary bleeding occur 7-10 postoperative days, held up our study, the patient came with bleeding at 10th postoperative day. Our secondary bleeding rate was 4.35% carried out by McCormick's work.

The presenting feature of adenoid children was 80% to 95% of nasal obstruction and mouth breathing, 60% to 80% hearing loss and snoring present in our study kept up by Tos et al. work, showed nasal obstruction and hearing loss above 90 % and other symptoms above 70% [26].

The personal history revealed most of our patient came from village and slum dweller accordingly 60.87 % and 30.43% carried out by Ajayan PV et al. series reported the majority of patient was poor class [27].

The laboratory investigation included for all 23 (100%) the patients was CBC, BT, CT, PT and APTT kept up by Ryczer T, Randall DA and Brum MR et al. study [20] [28] [29].

The radiological investigation X-ray nasopharynx lateral view showed the adenoid size reported by Cohen et al. research, which presented in our paper, grade-2 was 13.04%, grade-3 34.78%, and grade-4 52.18% near to Wormald PJ et al. report [30] [31].

About the postoperative bleeding, cauterization, and postnasal pack was recommended by various research works like Milosevic DN, Lowe D, and Tonkinson A et al. study, which showed the effective treatment to stop bleeding carried out by our study [32] [33] [34]. I added Spongstan or Cutanplast, which is absorbable gelatin sponge hemostatic with nasopharyngeal pack strengthening the work of pack. I used normal wet ribbon gauze, placing layer by layer in nasopharynx over the Spongstan from choanae to soft palate, which created sufficient pressure to stop the bleeding. Tzifa et al. study showed 87% surgeon of UK managed primary and reactionary bleeding by postnasal pack [14]. The postnasal pack sometimes made the children's parents and attendants feared and furious in our country. The nasopharyngeal pack and spongstan in adenoidectomy bleeding are safe for the surgeon, patient, and also patient's attendant.

The other procedure of adenoidectomy like coblation, microdebrider, and laser has a high cost, but less complication isn't cost-effective like our outlying tertiary care hospital [10] [11] [12]. The patient in Government Comilla Medical College Hospital may spend a maximum of 50 USD and in Private Clinic 150-300 USD for their operation.

V. Conclusion

The adenoidectomy operation is an ordinary procedure for surgeons. Complications are rare, but bleeding is hazardous both for surgeons, patient, and parents. Demographic data reproduced females and delayed adenoidectomy after ten years was risky for bleeding. Maximum surgeons of the world practiced the adenoidectomy by blind curettage method and management of bleeding by the postnasal pack which is also our practice. Except postnasal pack, I used nasopharyngeal pack and Spongstan in two tertiary care hospitals showed safe and authentic procedures both for surgeons and patients.

Funding: Nothing any source.

Conflict of interest: There is no any conflict of interest.

Ethical Approval: The study was approved by Institutional Ethical Committee.

References Références Referencias

1. University of Texas Medical Section Grand Rounds. Tonsillitis, Tonsillectomy and Adenoidectomy. December 1999. Available Via: https://www.utmb.edu/.
2. Voglar RC, Ii FJ, Pilgram TK. Age-specific size of the normal adenoid pad on magnetic resonance imaging. Clin Otol Alied Sci 2000; 25: 392-5.
3. Wysocka J, Hassmann E, Linska A. Musiato Wicz M. Naïve and memory T-cells in hypertrophid adenoid in children according to age. Int J Pediator Otorhinolaryngol 2003; 67: 237-41.

© 2020 Global Journals

4. Modrzynski M, Zawisza E, Ropiejko P. Serum Immunoglobulin E levels in relation to Waldeyer's ring surgery. Przegi-Lekarsk 2003; 60: 325-8.
5. Richardson MA. Sore throat, tonsillitis and adenoiditis. Med Clin North Am 1999; 83: 75-83.
6. Peter J. Rob. The Adenoid and Adenoidectomy. Scott-Brown's Otorhinolaryngology Head & Neck Surgery. Chapter-26, Volume-1, Endocrine Surgery. 2019; 8th edition: p-287.
7. Cavlakli F, Hizal F, Yilmaz I, Yilmazer C. Correlation between adenoid-nasopharynx ratio and endoscopic examination of adenoid hypertrophy: a blind, prospective clinical study. Int J Pediatr Otolaryngol 2009; 73: 1532-5.
8. Chisholm EJ, Lew-Gor S, Hajioff D, Caulfield H. Adenoid Size: a comparison of palpation, nasoendoscopy and mirror examination. Clin Otolaryngol 2005; 30: 39-41.
9. Dhanasekar G, Liapi A, Turnar N. Adenoidectomy technique: UK survey. J Laryngol Otol 2010; 124: 199-203.
10. Ida JB, Worley NK, Amedee RG. Gold laser adenoidectomy: Long term safety and efficacy results. Int. J. Pediator Otorhinolaryngol 2009; 73: 829-31.
11. Walker P. Pediatric adenoidectomy under vision using suction diathermy ablation. Laryngoscope 2001; 111: 2173-7.
12. Havas T, Lowinger D. Obstructive adenoid tissue: an indication of powered-shaver adenoidectomy. Arch Otolaryngol Head Neck Surgery 2002; 128: 749-91.
13. Pan HG, Li L, Zang DL, et al. Analysis of the cause of immediate bleeding after pediatric adenoidectomy. Clin J Otolaryngol Head Neck Surgery 2011; 46: 491-4.
14. Tzifa KT, Skinner DW. A survey on the management of reactionary hemorrhage following adenoidectomy in the UK and our practice. Clin Otolaryngol Allied Sci 2004; 29: 153-6.
15. Windfuhr JP. An aberrant artery as a cause of massive bleeding following adenoidectomy. J Laryngol Otol 2002; 116: 299-300.
16. Manigilia AJ. Adenotonsillectomy-A safe outpatient procedure. Arch Otolaryngol Head Neck Surgery. 1989; 115: 92-94.
17. Zwack GC, Derkay CS. The utility of preoperative haemostatic assessment in adenotonsillectomy. Int J Pediatr Otorhinolarynolaryngol 1997; 39(1): 67-76.
18. Windfuhr JP, Chen YS. Post-tonsillectomy and adenoidectomy hemorrhage in non-selected patients. Ann Otol Rhinol Laryngol 2003; 112(1): 63-70.
19. Arnolder C, Grasl MCH, Thunder D. Surgical revision of hemorrhage in 8388 patients after cold-steel adenotonsillectomies. Wien Klin Wochenschr 2004; 120(11-12): 336-342.
20. Ryczer T, Gios LZ, Czarnecka P, Sobezyk K. Bleeding as the main complication after adenoidectomy and adenotonsillectomy. New Med 2015; 19(4): 125-129.
21. Silva BSRd, Gracia LB, Ortiz LDR, Monteiro LES, Maeda NA. Hemorrhage in the Adenoidectomy and/or Tonsillectomy immediate postoperative. Int Arch Otolaryngol, Sao Paulo 2009; 13(2): 155-160.
22. Colclasure JB, Graham SS. Complications of Outpatient tonsillectomy and adenoidectomy: A review of 3340 cases. Ear Nose Throat J 1990; 69: 155-160.
23. Valtonen HJ, Blomgren K, Quamberg YH. Consequences of adenoidectomy in conjunction with tonsillectomy in children. Int J of Pediatric Otorhinolaryngology 2000; 53: 105-109.
24. McCormick ME, Sheyn A, Haupert M. Predicting complications after adenotonsillectomy in children 3 years old and younger. In J of Pediatric Otorhinolaryngology 1998; 118:61-68.
25. Windfuhr JP. Hemorrhage following tonsillectomy and adenoidectomy in 14579 patients. Otolaryngology, Head and Neck Surgery 2003; 129(2): 01-05.
26. Tos M, Larsen PL, Strangerup SE, Hvid G, Anderson UK. Sequele following secretory otitis media and their progression. Acta Oto-laryngologica 1988; 105(449): 37-38.
27. Ajayan PV, Divya RML, Anju MJ. A study on the effect of adenoidectomy with tonsillectomy in otitis media with effusion in children. Int J Res Med Sci May 2017; 5(5): 1796-1801.
28. Randall DA, Hoffer ME. Complication of tonsillectomy and adenoidectomy. Otolaryngol Head Neck Surg. 1998; 118: 61-68.
29. Brum MR, Mira MS, Castro SF. Tranexamic acid in adenotonsillectomy in children: A double blind clinical trial. Int J Pediatr Otorhinolaryngol oct 2012; 76(10): 1401-1405.
30. Cohen D, Konak S. The evaluation of radiograph of the nasopharynx. Clin Otolaryngol Allied Sci 1985; 10(2): 73-8.
31. Wormald PJ, Prescott CA. Adenoids: comparision of radiological assessment methods with clinical and endoscopic findings. J Laryngol Otol 1992; 106(04): 342-4.
32. Milosevic DN. Post-adenoidectomy hemorrhage: a two year prospective study. Vojnosaint Pregi 2012; 69: 1052-4.
33. Lowe D, Brown P, Young M. Adenoidectomy technique in the United Kingdom and postoperative hemorrhage. Otolaryngol Head Neck Surgery 2011; 145: 314-8.
34. Tomkinsonson A, Harrison W, Owens D, Fishpool S, Temple M. Postoperative hemorrhage following adenoidectomy. Laryngoscope 2012; 122: 1246-53.

© 2020 Global Journals