ISSN (Print): 2663-9491 ISSN (Online): 2789-6897

Original Article

Association between Enlarged Adenoid and Otitis Media with Effusion in Children in Sylhet Women Medical College

DOI: dx.doi.org

Md. Azadur Rahman[1], MST. Tamanna Begum[2], Md. Mofakkarul Islam[3], Md. Ziauddin Abbasi[4], Shah Md. Ismail Hossain[5]

Received: 06 APR 2022
Accepted: 19 APR 2022
Published: 20 APR 2022

Published by:
Sheikh Sayera Khatun Medical College Gopalganj, Bangladesh

ABSTRACT

Objectives:*To evaluate the relationship between extended adenoid and otitis media with examination in kids.* ***Methods:*** *This cross sectional near examination was done in Sylhet Women's Medical College, from July 2020 to June 2021. Thirty youngsters with broadened adenoids (case) and 30 kids without developed adenoids (control) were included for this examination. All patients oppressed for history, neighborhood actual assessment and assessment of adenoid size by horizontal X-beam of post nasal space. Tympanometry and unadulterated tone audiometry are likewise done. Data's recorded on an uncommonly planned information sheet.* ***Result:****Among 30 case and 30 control, 12 (40.0%) and 2 (6.7%) patient had OME in the event that what's more, control bunch individually, mean age was 9.5 (2.76%) a long time and 9.96 (2.95%) on the off chance that what's more, control bunch individually. Male were transcendent (70%) than female (30.0%) in cases. Among cases, Grade-I was 20.0%, grade II-was 33.3% and grade-III was 46.7%. Hearing misfortune was found in 14 (46.7%) kids. As per tympanometry, type A bend was in 17 (56.7%) kids, type B in 9 (30.0%) and type C in 4 (13.3%) cases.* ***Conclusion:****Expanded adenoids can be important in the pathogenesis of otitis media with radiation which this research shows.*

Keywords:*Otitis media with effusion, adenoid augmentation, tympanometric.*

1. *Assistant Professor, ENT, Sylhet Women's Medical College, Sylhet*
2. *Medical Officer, TB Hospital, Sylhet, Bangladesh*
3. *Assistant Professor, ENT, Jalalabad Ragib-Rabeya Medical College, Sylhet*
4. *Assistant Professor, Sylhet Women's Medical College, Sylhet*
5. *Assistant Professor, Department of Skin and Venereology, M Abdur Rahim Medical College, Dinajpur 5200, Bangladesh.*

(The Insight 2021; 4(2): 148-153)

INTRODUCTION

The adenoid (pharyngeal tonsil) is a three-sided mass of lymphoid tissue found on the back part of the nasopharynx. Along with the lingual tonsils anteriorly, the palatine tonsils along the side, all together structure a ring of lymphoid tissue known as

Waldeyer's tonsillar ring. [1] .The adenoid seems, by all accounts, to be at biggest in size at 7 years old. Notwithstanding, clinical manifestations are more normal in the more youthful age bunch, because of the overall little volume of the nasopharynx and the expanded recurrence of the upper respiratory lot infections [2]. Nasal deterrent, rhinorrhoea, and hyponasal voice are the standard thing introducing side effects of adenoid hypertrophy [3].The adenoid might be involved in the upper respiratory infection because of fractional or on the other hand total hindrance of the nasal choanae or on the other hand because of sepsis. Obsessive appearances incorporate rhinitis, rhinosinusitits, otitis media with radiation.Otitis media with emission is described by a gathering of liquid in the center ear parted behind a flawless tympanic layer, without signs and indications of intense infection [4,5]. Due to the physical contrast in the Eustachian tube, youngsters are more victim of OME. In kids Eustachian tube are more flat and more limited [6]. Adenoid hypertrophy can add to the rate of OME through direct block of Eustachian tube, optional to persistent contamination in the adenoidal tissue and, unfavorably susceptible response in the mucosa of adenoid and nasopharynx [7]. OME is exceptionally normal in kids, particularly between the ages of 1 and 3 years, with a pervasiveness of 10% to 30% and a combined rate of 80% at the 4 years of age. Its rate diminishes with age, so it is phenomenal in youngsters (1% at 11 years). It is likewise more normal in chilly climate and in young men more than young ladies, youngsters with split sense of taste, down condition, and hypersensitive rhinitis [8]. OME is the most well-known reason for hearing misfortune in kids. It causes to a conductive hearing misfortune (HL) of variable seriousness. Hearing debilitation normally found at routine screening or saw by the guardians also, instructors. More than 80% of OME results in conductive HL, averaging 30 dB HL, going from 5 to 50 dB HL. HL is huge, particularly in two-sided cases. It keeps going longer than 90 days, with discourse delay and learning challenges in 20%. Most instances of OME present between 1 to 6 years of age [9]. Expanded adenoids is the most well-known reason for OME in youngsters which along these lines causes hearing misfortune, postponed discourse and language securing, changed conduct and contrarily sway personal satisfaction. Augmented adenoids related with OME are one of the significant parts of otolaryngological practice. Kids might be missed from finding since they may not say anything negative about it. This examination will serve to mindful otolaryngologist about broadened adenoids and OME and to understand the significance of tympanometric assessment alongside PTA in early discovery of OME.

OBJECTIVES

GENERAL OBJECTIVE

Perception of the relationship between augmented adenoids and otitis media with emission in youngsters.

SPECIFIC OBJECTIVE

To discover the recurrence of OME in augmented adenoids and non-expanded adenoids bunch.
To discover level of hearing misfortune in youngsters with expanded adenoids.
To decide the relationship between grade of augmented adenoids and hearing misfortune because of OME.

METHODS

Study design: Cross Sectional Comparative investigation

Study period: The complete time of study was a long time (from July 2020 to June 2021).
Study place: The investigation was done in the Sylhet Women's Medical College.
Study population: Children with or without augmented adenoid went to in the (Indoor and out persistent division) Sylhet women's Medical College.
Group I: 30 patients with augmented adenoid framing case.
Group II: 30 patients without augmented adenoid framing control.
Test size: 60 patients.
Examining strategy: The inspecting procedure was purposive non-randomized testing technique. This purposive examining was proceeded according to considerations and avoidance standards.
Information assortment strategy: Data were gathered recorded in preformed information assortment sheet. The pertinent sociodemographic information of these patients were gathered and recorded.
Statistical Analysis: All information was recorded deliberately in preformed information assortment structure (survey) and quantitative information were communicated as mean and standard deviation and subjective information were communicated as recurrence conveyance and rate. Measurable examination was performed by utilizing window based PC programming contrived with Statistical Packages for Social Sciences (SPSS-20). 95% certainty limit was taken. Chi-square test was done to see the relationship between absolute information and unpaired t test was done to see the relationship between mathematical information. All measurable tests were considered huge at a degree of $p < 0.05$. The summed up information was deciphered likewise and was then introduced as tables.

RESULT

Table 1: Distribution of patients according to age groups

Age	Group		p value
	Group 1 n (%)	Group 2 n (%)	
2 - 5	4 (13.3)	3 (10.0)	
6 - 10	17 (56.7)	16 (53.3)	
11 - 14	9 (30.0)	11 (36.7)	0.422
Total	30 (100.0)	30 (100.0)	
Mean ± SD	8.96 ± 2.73	9.56 ± 3.00	

Most of children in both groups was in the age range of 6-10 years.

Table 2: Gender distribution of patients in groups

Gender	Group		p value
	Group 1 n (%)	Group 2 n (%)	
Male	21 (70.0)	19 (63.3)	
Female	9 (30.0)	11 (36.7)	
Total	30 (100.0)	30 (100.0)	0.584

In our research young men was relatively more than young ladies which was not genuinely huge.

Table 3: Association between grade of adenoids and hearing loss in children with enlarged adenoid

Grade of enlarged adenoids	n (%)	Hearing loss

I	6 (20.0)	1 (16.7)
II	10 (33.3)	3 (30.0)
III	14 (46.7)	10 (71.4)

Result shows extent of hearing misfortune increment with the seriousness of nasopharyngeal obstacle by adenoid hypertrophy.

Table 4: Distribution of the children according to hearing loss in groups

Hearing loss	Group		p value
	Group 1 (%)	Group 2 (%)	0.005
Present	14 (46.7)	4 (13.3)	
Absent	16 (53.3)	26 (86.7)	
Total	30 (100.0)	30 (100.0)	

Hearing loss was significantly more in Group-I.

Table 5: Degree of hearing loss in children with enlarged adenoids (Pure tone audiometry)

Degree of hearing loss	Frequency	Percentage
Mild	4	13.3
Moderate	10	33.3

Rate of moderate hearing loss was more in group: I

Table 6: Type of the curve according to tympanometry in groups

Type of curve	Group				p value
	Group 1 (case)		Group 2 (control)		
	n (%)	No of ear	n (%)	No of ear	
A	17 (56.7)	34	28 (93.3)	56	0.004
B	9 (30.0)	18	2 (6.7)	4	
C	4 (13.3)	8	0 (0.0)	0	
Total	30 (100.0)	60	30 (100.0)	60	

Rate of B curve was very high in group I than group II

Table 7: Distribution of patients according to OME in groups

OME	Group		p value
	Group 1 (case) (%)	Group 2 (control) (%)	
Yes	12 (40.0)	2 (6.7)	0.002
No	18 (60.0)	28 (93.3)	
Total	30 (100.0)	30 (100.0)	

OME was significantly higher in children of group I than that of group II.

DISCUSSION

This Study was performed upon 60 youngsters separated into two gatherings (Group: I and Group:II) contingent upon presence or nonappearance of augmentation of adenoids. In bunch: II 30 age coordinated with youngsters without expanded adenoids were taken for better exactness.

In our examination, the greater part of the kids with augmented adenoids (56.7%) were in the age gathering of 6 to 10 years. Developed adenoids was found among 60% patients in 5 to 6 years of age bunch in an investigation which isn't concordance with us [10]. Another examination detailed that enormous adenoids were most every now and again saw between the ages of

68 years, this outcome is to some degree reliable with this study [11].

In our investigation, male (70%) were dominating than female (30%). In one investigation it was tracked down that 22 (64.7%) were guys and 12 (35.3%) were females [12]. which is like this. Male has more open air natural openness than female.

In our investigation as per size of adenoids, greatest youngsters study bunch (46.7%) had grade-III followed by grade-II (33,3%) and grade I (20.0%). It was found in an examination that greatest youngsters (54.2%) had grade-III followed by grade-II (16.7%), grade-IV (16.7%) and Grade-I (12.5%). Out of 6 Grade-I adenoids cases just one (16.7%) case had hearing misfortune, out of 10 grade-II adenoids 3 (30.0%) cases had hearing misfortune and out of 14 grade-III adenoids cases 10 (71.4%) cases had hearing misfortune.

Concerning loss of the kids, 14 (46.7%) kids in bunch I and 4 (13.3%) kids in bunch II had hearing misfortune. There was measurably huge contrast between these two gatherings (p=0.005). This figure upholds the destinations that OME was all the more oftentimes found in bunch I in comparative with bunch: II in an investigation it was tracked down that gentle

Hearing misfortune was 62.5% cases and moderate hearing misfortune was 25.0% cases in right ear yet gentle hearing misfortune was 58.3% cases and moderate hearing misfortune was 33.3% cases in left ear as per unadulterated tone audiometry.

Concerning of hearing misfortune, 10 (33.3%) kids had moderate and 4 (13.3%) kids had gentle hearing misfortune. The consultation misfortune was slight in 36.8%, gentle in 50.5% and moderate in 12.7% youngsters in the study [13]. our outcome isn't predictable with this outcome. For all intents and purposes there is no evaluating program for hearing misfortune in our country. In this reference community numerous youngsters came from country region and gatekeeper of those kids are for the most part ignorant. So they couldn't understand about their kid's hearing misfortune, other than these other significant reason is that watchman are hesitant to take treatment.

In our research, greater part of tympanometry bend was type A (56.7%) trailed by type B (30.0%) and type C (13.3%) in broadened adenoids youngsters however in charge bunch, most extreme (93.3%) patients had type A bend and 6.7% patients had type B bend. There was measurably huge distinction between these two gatherings ($p<0.05$). Our outcome is reliable with the aftereffect of another study [14].

In our examination OME were found in 12 (40.0%) youngsters with broadened adenoids and 2 (6.7%) kids with non-augmented adenoids. The distinction between these two gatherings was genuinely critical ($p<0.05$). The occurrence of OME was fundamentally higher in the youngsters with augmented adenoids (35.0%) than the typical control (7.0%) ($p<0.001$) and the danger of OME was more than 7.5 occasions as more among adenoidal gathering than among the non-adenoidal control [15]. our outcome was concordance with this outcome. The reasons for improvement of OME other than expanded adenoids are avoided however much as could be expected. We attempted to coordinate with the benchmark group with the investigation bunch in regard old enough, financial condition and home. Thus, the distinction of the pace of OME between these two gatherings is because of augmentation of adenoids.

CONCLUSION

Broadened adenoid is related with otitis media with radiation (OME) in kids. Pace of OME was higher in kids with broadened adenoids and lower in charge bunch. Increment seriousness of nasopharyngeal hindrance is straightforwardly connected with expanded pace of OME. Basically tympanometric assessment ought to be accomplished for early determination of the OME and to decrease its drawn out impacts.

REFERENCES

1. *Wiatrak BJ and Wooly AL. Pharyngitis and Ade-notonsillar disease'. Cummings CW ED. Otolaryn-gologyHead and Neck.Surgery', 4th ed. Missouri, USA: El-Sevier Mosby, pp. 4135-51.2005.*
2. *Browning G. Otitis media with effusion. In: Gleeson M, Browning GG, Burton MJ, Clarke R, Hibbert J, Jones N, Lund, V, Luxon L, Watkinson J. (eds.). ScottBrown's Otolaryngology, Head and Neck Surgery, 7th edition'. Hodder Arnold, New York: pp. 877-900, 2008.*
3. *Suurna MV. Management of Adenotonsillar Disease. In: Lalwani A. eds 'Current Diagnosis& Treatment in Otolaryngology-Head & neck Surgery', 2nd ed. USA: McGraw Hill LANGE, pp. 355-9, 2008.*
4. *Stool SE, Berg AO, Berman S. Otitis Media with Effusion in Young Children'. Clinical Practice Guideline, Number 12. AH- CPR Publication No. 94-0622. Rockville: Agency for Health Care*
1. *Policy and Research, Public Health Service, U.S. Department of Health and Human Services. 1994*
5. *Bluestone CD, Gates GA, Klein JO. Recent advances in otitis media. Definitions, terminology, and classification of otitis media', Annals of Otology, Rhinology & Laryngology 2002; Supplemen, 188: 8–18.*
6. *Nery C.deG, Buranello FS, Pereira C, Di Francesco RC. Otitis media with effusion and dental occlusion: is there any relationship? European Journal of Paediatric Dentistry 2010; 11(3): 132-6.*
7. *Khayat FJ. and Shareef LAT. Association Between Size of Adenoid and Otitis Media with Effusion Among a Sample of Primary School Age Children in Erbil City. Diyala Journal of Medicine 2013; 5(2), pp. 1-10.*
8. *Burton MJ, Rosenfeld RM. Grommets (ventilation tubes) for hearing loss associated with otitis media with effusion in children', Cochrane corner. Otolaryngology- Head and Neck Surger 2006;45; 507-10.*
9. *Robb PJ and Williamson I. Otitis media with effusion in children: current management. Paediatrics and Child Health 2012; 22(1): 9-12.*
10. *Yaseen ET, Khammas AH, Ralih A. Adenoid enlargement assessment by plain X-ray &Nasoendoscopy, Iraqi Journal of Community Medicine 2012; 1: 88-91.*
11. *Pruzansky S. Roentgen Cephalometric studies of Tonsil and Adenoid in normal and pathological states. The Annals of Otology, Rhinology & Laryngology 2012; 84(2) Suppl 19: 55-62.*
12. *Kolo ES, Ahmed AO, Kazeem MJ, Nwaorgu OGB. Plain radiographic evaluation of children with obstructive adenoids. European Journal of Radiology 2010; 79(2): 38-41.*
13. *Khayat FJ and Dabbagh LS. Incidence of otitis media with effusion in children*
2. *with adenoid hypertrophy. Zanco Journal of Medical Science 2011; 15(2): 57-63.*
14. *Orji FT, Okolugbo NE, Ezeanolue, BC. The role of adenoidal obstruction in the pathogenesis of otitis media with effusion in Nigerian children. 2011 19(1): 62-8.*