

ORIGINAL RESEARCH

EVALUATION OF EFFECTS OF ADENOIDECTOMY IN PATIENTS OF SECRETORY OTITIS MEDIA IN CHILDREN

Dr. Rehana E¹, Dr. R C Krishna Kumar²

¹Assistant Professor, PK Das Institute of Medical Sciences, Vaniyamkulam, Ottapalam, Kerala, India.

²Medical Director, PK Das Institute of Medical Sciences, Vaniyamkulam, Ottapalam, Kerala, India.

Corresponding Author: Dr. Rehana E, Assistant Professor, PK Das Institute of Medical Sciences, Vaniyamkulam, Ottapalam, Kerala, India.

ABSTRACT

Background: To evaluate the effects of adenoideotomy in patients of secretory otitis media in children.

Methods: 65 children age ranged 4-12 years with history of SOM of both genders were assessed for Otoscopic findings. Pure tone audiometry (PTA) was performed for assessment of hearing threshold in both ears.

Results: Out of 65 patients, boys were 35 and girls were 30. Common symptoms were nasal discharge in 53, nasal obstruction in 58, sore throat in 32, fullness of ear in 26 and hard of hearing in 46. Tympanic membrane appearance was retraction in 5, air bubbles in 15, dull, lustreless, amber coloured in 45. Hearing loss (dB) was 16-25 (minimal) in 40, 26-40 (mild) in 25. Impedance audiometry showed peak in 10 and no peak in 55. Morbidity was sinusitis in 6 and tonsillitis in 12. The difference was significant ($P < 0.05$). The mean AG gap pre-operatively was 24.6 dB, at 1 month was 10.9, at 3 months was 10.4 and at 6 months was 11.7. The difference was significant ($P < 0.05$).

Conclusion: One of the most frequent causes of hearing loss in children is secretory otitis media. The tympanic membrane had an amber color, retraction, air bubbles, and a dull, lustreless look. Tonsillitis and sinusitis were morbidities.

Keywords: Children, Hearing loss, Secretory otitis media

INTRODUCTION

Children whose hearing loss exceeds 30 dB are placed below grade level in school and have severe vocabulary retardation.¹ Glue ear, also known as secretory otitis media, is the most prevalent cause of hearing loss in children. Inadequate treatment of acute otitis media with antibiotics has led to a rise in the occurrence of secretory otitis media (SOM) in recent years.² It is the most prevalent cause for children to have surgery and the reason that antibiotics are prescribed. The management of a youngster who is prone to otitis media presents numerous complications. Antimicrobial resistance is a new problem that has been linked to rising antibiotic intake.³

Adenoidectomy is being increasingly used for the treatment of SOM. The removal of adenoids in children with SOM is necessary due to enlargement causing nasal obstruction and mouth breathing.⁴ The enhancement of the ET function is the other traditional justification for removal. There are several ways to screen for secretory otitis media. The more popular pure tone audiometry is able to detect the conductive hearing loss in secretory otitis media with great ease, but it is utterly ineffective in identifying the underlying etiology of the condition.⁵ The present study was evaluated the effects of adenoidectomy in patients of secretory otitis media in children.

MATERIALS & METHOD

The present study comprised of 86 children age ranged 5-13 years suffering from secretory otitis media of both genders. Parents gave their written consent for the participation in the study. Data such as name, age, gender etc. was recorded. An extensive examination of the ears, nose, throat, and system was carried out. It was noted that symptoms included sore throat, hard of hearing, snoring, nasal discharge, and nasal blockage. Otoscope results were noted. The evaluation of both ears' hearing thresholds was done using pure tone audiometry (PTA). According to Clark's classification, hearing impairment was categorized. All patients were also subjected to tympanometry. Data thus obtained were subjected to statistical analysis using Mann-Whitney U test. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

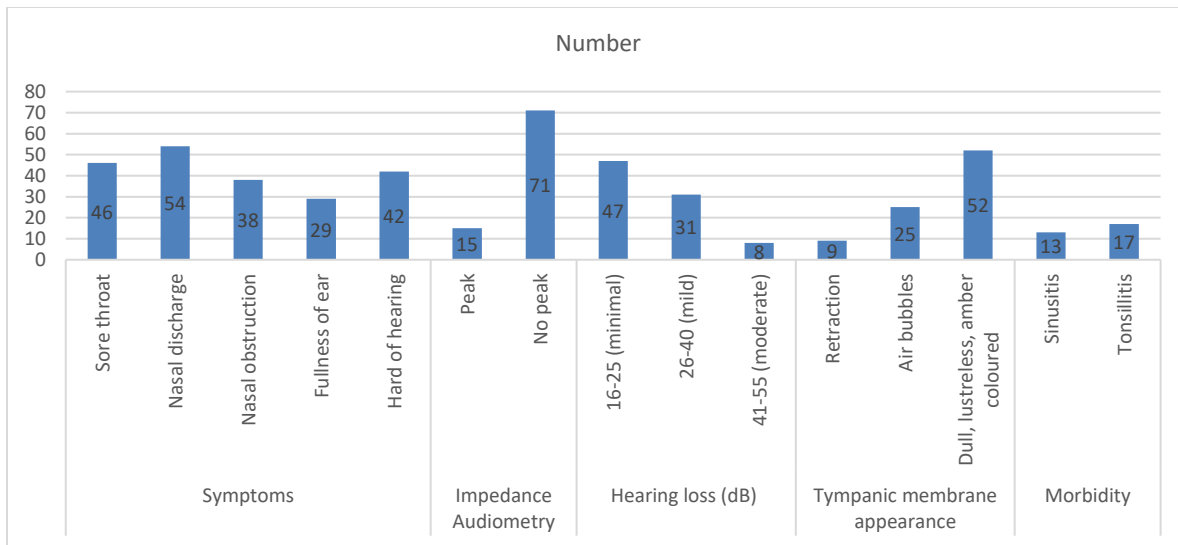
Total- 86		
Gender	Boys	Girls
Number	46	40

Table I shows that out of 86 patients, boys were 46 and girls were 40.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Symptoms	Sore throat	46	0.05
	Nasal discharge	54	
	Nasal obstruction	38	
	Fullness of ear	29	
	Hard of hearing	42	
Impedance Audiometry	Peak	15	0.01
	No peak	71	
Hearing loss (dB)	16-25 (minimal)	47	0.05
	26-40 (mild)	31	
	41-55 (moderate)	8	
Tympanic membrane appearance	Retraction	9	0.02
	Air bubbles	25	
	Dull, lustreless, amber coloured	52	
Morbidity	Sinusitis	13	0.05
	Tonsillitis	17	

Table II, graph I shows that common symptoms were sore throat in 46, nasal discharge in 54, nasal obstruction in 38, fullness of ear in 29 and hard of hearing in 42 patients. Impedance audiometry showed peak in 15 and no peak in 71. Hearing loss was 16-25 dB (minimal) in 47, 26-40 dB (mild) in 31 and 41-55 dB in 8 cases. Tympanic membrane appearance was retraction in 9, air bubbles in 25, dull, lustreless, amber coloured in 52 patients. Morbidity was sinusitis seen in 13 and tonsillitis in 17 cases. The difference was significant ($P < 0.05$).



Graph I Assessment of parameters

Table III Measurement of AG gap

Time period	Mean (dB)	P value
Pre- operative	23.5	0.01
1 month	11.3	
3 months	10.2	
6 months	11.4	

Table III shows that mean AG gap pre- operatively was 23.5 dB, at 1 month was 11.3, at 3 months was 10.2 and at 6 months was 11.4. The difference was significant ($P < 0.05$)

DISCUSSION

For a person to be healthy, their hearing must be intact. It is commonly known that children's cognitive, linguistic, and emotional development is negatively impacted by hearing loss.⁶ Infants and early children may experience speech and language acquisition difficulties due to even mild hearing loss, measured in the range of 10 to 15 dB, which could result in generalized educational impairment.⁷ The youngster may not always complain of their hearing loss, which could be latent or overt. Childhood complaints of secretory otitis media (SOM) are among the most prevalent.⁸ The present study evaluated the effects of adenoidectomy in patients of secretory otitis media in school going children.

We found that out of 86 patients, boys were 46 and girls were 40. 103 children with bilateral OME, ages 2 to 12, were randomly assigned by Maw et al⁹ to one of three groups: adenotonsillectomy (n

= 34), adenoidectomy (n = 36), or neither (n = 33). During the surgical procedure, a tympanostomy tube was randomized to be placed in one ear. The clearing of the effusion in the unoperated ear was noted at 3, 6, 9, and 12 months. In certain investigations, myringotomy and fluid aspiration have demonstrated a dry tap rate of up to 34%. There are connections between the size of the nasopharynx and the existence of otitis media with effusion.

We observed that common symptoms were sore throat in 46, nasal discharge in 54, nasal obstruction in 38, fullness of ear in 29 and hard of hearing in 42 patients. Impedance audiometry showed peak in 15 and no peak in 71. Hearing loss was 16-25 dB (minimal) in 47, 26-40 dB (mild) in 31 and 41-55 dB in 8 cases. Tympanic membrane appearance was retraction in 9, air bubbles in 25, dull, lustreless, amber coloured in 52 patients. Morbidity was sinusitis seen in 13 and tonsillitis in 17 cases. Nath et al¹⁰ evaluated the results of adenoidectomy in 40 patients with secretory otitis media who were between the ages of 5 and 12. The age group of 5-7 years accounted for the highest number of cases (50%) with a little male preponderance (55%) compared to girls (45%). 82.5% of the patients had nasal discharge, and all of them had nasal blockage and snoring. In 67.5% of patients, hard of hearing was a common ear symptom, while fullness was observed in 25% of instances. There were 17.5% and 37.5% cases of sinusitis and tonsillitis, respectively. During otoscopy, 75% of patients had dull, lustreless, amber-colored TM, 50% had retraction, and 12.5% had air bubbles. In pure tone audiometry, the average hearing loss was 23.95 dB, with 60% having 16–25 dB and 30% having 26–40 dB. Just 10% on impedance Just 10% of impedance had peaked before to surgery. Following surgery, 41.25 percent of cases showed no peak/peak conversion, and the mean A-B gap improvement at one, three, and six months was 12 dB, 12.2 dB, and 11.7 dB, respectively.

We observed that mean AG gap pre- operatively was 23.5 dB, at 1 month was 11.3, at 3 months was 10.2 and at 6 months was 11.4. Yadav et al¹¹ assessed the prevalence of secretory otitis media in 200 students in the 5-7 years old age range. One hundred students were removed from two distinct educational institutions serving the upper and middle classes of society. It was found that 20.75% of people had secretory otitis media overall. In the lower socioeconomic category, it was 28.5%, while in the other group, it was 13%. Because of its great frequency, secretory otitis media should be routinely screened for. According to Renvall et al¹² stapedial reflex is considered too sensitive to be used as a screening test in the diagnosis of SOM.

CONCLUSION

One of the most frequent causes of hearing loss in children is secretory otitis media. The tympanic membrane had an amber color, retraction, air bubbles, and a dull, lustreless look. Tonsillitis and sinusitis were morbidities.

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