



## A PREVALENCE OF OTITIS MEDIA WITH EFFUSION IN CHILDREN WITH OBSTRUCTIVE ADENOID DISEASE

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### INTRODUCTION

Adenoid enlargement has traditionally been considered a factor in otitis media with effusion (OME). OME is an important and common condition in pediatric age group. Other terms commonly used to refer to the same process include secretory otitis media, non suppurative otitis media, serous otitis media and glue ear. Following a discussion at an international symposium the terms OME and middle ear effusion (MEE) were adopted by consensus (1). OME was previously considered to be bacteriologically sterile. However positive bacterial cultures have been demonstrated in 40 percent of middle ear fluid. Streptococcus pneumonia and haemophilus influenza account for the majority of cases (2). It is a common practice among ENT surgeons to do adenoidectomy as part of the treatment of medically resistant OME. Although some literature associates enlarged adenoid with OME, there are some studies questioning this relationship. Although there are a large number of prevalence studies of OME in general population of children, there has been less research on its prevalence in children having adenoidal obstruction.

### MATERIAL AND METHODS

**Study design-** This was a Case control study carried out in children aged 1-8 years of total 104 children and divided into two equal groups i.e 52 children in each group conducted in the ENT department of MIMS medical college, nellimarla, vzm dist, AP,INDIA. During the period of December 2016 to December 2017 for one year period.

The study group of 52 patients had clinical and radiological features of chronic obstructive adenoid disease and the control group of 52 patients had no history suggestive of obstructive adenoid disease. Eligible patients were consecutively recruited into the study.

The patients were evaluated for symptoms, otoscopic findings and tympanometry. Lateral neck radiograph measurements was done for children in the study group.

**Study setting-** This study was carried out within the ENT department of MIMS medical college, nellimarla, vzm dist, AP,India.

**Study population-** The children were divided into two groups;

1. Study group.
2. Control group.

### Study group

#### Inclusion criteria:

Children aged between 1 and 8 years with clinical and radiological features of chronic obstructive adenoid disease as the only cause of upper airway obstruction and scheduled for adenoidectomy.

#### Exclusion criteria:

- History of previous adenoidectomy.
- Nasopharyngeal tumor/mass other than AH.
- Genetic syndromes with craniofacial abnormalities. (E.g. Down syndrome)
- Other causes of airway obstruction (deviated septum, nasal polyposis, gross turbinate hypertrophy)
- Active ear discharge. Cleft palate
- Parent/Guardian's refusal to consent

### Control group

#### Inclusion criteria:

This comprised children aged between 1 and 8 years with no history suggestive OAD. The children were matched for age and sex. Parents/legal guardians of potential participants were approached and requested to participate in the study. A written informed consent was obtained. Exclusion criteria were validated during history taking and physical exam.

Case control study carried out in children aged 1-8 years in the ENT department. The study group had clinical and radiological features of chronic obstructive adenoid disease and the control group had no history suggestive of obstructive adenoid disease. Eligible patients were consecutively recruited into the study between may and august 2017. The patients were evaluated for symptoms, otoscopic findings and tympanometry. Lateral neck radiograph measurements was done for children in the study group.

### RESULTS

The prevalence of OME in children with adenoid hypertrophy at ENT DEPT is 67.3% in the study group and in the control group is 15.4 % (95% CI 4.4 to 29.3).

Variable	Study group	Controls	OR (95% CI)	P value
OME				
Present	35 (67.3%)	8 (15.4%)	11.3 (4.4-29.3)	<0.001
Absent	17 (32.7%)	44 (84.6%)	1.0	

### DISCUSSION

The adenoids are the uppermost part of Waldeyer's ring in pharynx consisting other lymphoid tissues located at superior posterior wall of nasopharynx adjacent to Eustachian Tube opening and choana. Adenoid hypertrophy is commonest disorder in children,[3] which plays significant role in the pathogenesis of otitis media with effusion,[4] predisposing delayed speech, language development and poor academic.[5,6]. OME is defined as fluid in the middle ear without signs or symptoms of acute ear infection. OME is one of the commonest chronic otological conditions of childhood. Two third of children have had at least one episode of OME by the age of 3 years and in one third of them it is asymptomatic (7). Clinically the patient may present with mild to moderate hearing loss. Although the hearing loss is initially temporary and disease may resolve by itself in a significant percentage of patients, the disease may continue to cause problems in 5 to 15% of children with persistent or progressive hearing loss, tinnitus, otalgia, and chronic suppurative otitis media (CSOM) (8). The four main causes are Eustachian tube dysfunction, middle ear gas composition, nasopharyngeal disproportion and altered mucociliary system. It is believed that with an increase in the vascularity of the middle ear cleft due to inflammation, there is an increase in gas diffusion into the blood, resulting in a decreased pressure in the middle ear cleft. Negative pressure in the middle ear cavity in turn results in serous fluid accumulation in the middle ear and retraction of the tympanic membrane (9). Nasopharyngeal disproportion is also an important factor in the pathogenesis of OME. Children with adenoid hypertrophy and craniofacial disproportions have been shown to have increased risk of OME (10).

### CONCLUSION

Otitis media with effusion is more prevalent in patients with adenoid

hypertrophy when compared with patients without adenoid hypertrophy. Clinical screening, tympanometry evaluation and follow up is vital in preventing sequel associated with OME.

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