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Original article:

Study of different modalities of management of Otitis Media with Effusion

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Abstract:

Introduction: Otitis Media with Effusion (OME) is defined as the presence of effusion behind an intact eardrum without symptoms of acute inflammation. It is a common problem of children between 1 to 5 years old. Most of the cases of OME are asymptomatic

Material and methods: This study was carried out in the Department of ENT, kakatiya medical college, Warangal. It was Prospective study was conducted during two years period. They are the patients attending the E.N.T. Department of Mahatma Gandhi Memorial Hospital and also patients referred from other departments in the same hospital. A total of 50 cases were studied.

Results and conclusion: Otitis media with effusion (OME) is the commonest cause of hearing difficulty encountered by the Otologists. It is characterized by accumulation of effusion in the middle ear cavity due to altered mucociliary system within ME and ET. Otologists all over the world have attempted to solve the problems encountered in OME.

Introduction:

Otitis Media with Effusion (OME) is defined as the presence of effusion behind an intact eardrum without symptoms of acute inflammation. It is a common problem of children between 1 to 5 years old. Most of the cases of OME are asymptomatic.[1,2]

Any condition which affects the proper function of the mucociliary system of the upper respiratory tract may predispose to development of MEE. There is a relationship between the presence of ME fluid and hearing impairment, though in younger children the HL is not always obvious. When covert it may present as speech, language or learning delay and sometimes as behavioural and educational problems. HL may be first detected on routine screening examination at 7-9 months, 3 years age or later at pre-school testing.[3]

The diagnosis is otoscopic and confirmed by tympanometry. A proportion of OME resolves spontaneously or with the treatment of URTI. The failures require the surgical solution of ventilating tube and adenoidectomy[2.]

Material and methods:

This study was carried out in the Department of ENT, kakatiya medical college, Warangal. It was Prospective study was conducted during two years period. They are the patients attending the E.N.T. Department of Mahatma Gandhi Memorial Hospital and also patients referred from other departments in the same hospital. A total of 50 cases were studied.

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InclusionCriteria:

The patients who were diagnosed as otitis media with effusion and less than or equal to 12 years of age, included in the study.

Exclusion Criteria:

The patients who were diagnosed as other than otitis media with effusion and more than 12 years of age were excluded from the study.

Methods of Data Collection:

The Proforma was designed based on the objectives of the study. It was pretested and used after modification (enclosed in annexure). As per the enclosed Proforma, detailed history was taken followed by thorough ENT and systemic examination, and clinical diagnosis was made in support with the relevant investigations. Once the diagnosis was confirmed as OME the fluid aspiration was done and sent for culture.

The data thus obtained was analysed with the aid of calculator and presented in the form of tables, figures, graphs and diagrams wherever necessary. The findings are discussed in the light of findings in other similar studies conducted elsewhere based on the objectives of the study in the foregoing chapters.

Results:

Table 1. Symptoms of Adenoid hypertrophy at presentation*

Symptoms Suggestive of Adenoid hypertrophy	No of Pt.'s	Percentage (%)
Mouth breathing	35	70
Snoring	35	70
Speech hypo nasality	30	60

* Not mutually exclusive.

The symptom of adenoid hypertrophy was observed in 35(70%) patients. Fifteen patients did not have any symptom suggestive of adenoid hypertrophy at presentation.

Table 2. Appearance of the X-ray Nasopharynx

Investigation	No of cases showing Adenoid hypertrophy	No of cases showing no Adenoid hypertrophy
X-ray Nasopharynx lateral view For Adenoids	35	15

Adenoid hypertrophy was assessed by X-ray Nasopharynx lateral view. 35 patients had Adenoid hypertrophy and 15 patients had no hypertrophy at the time of presentation.

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Table 3. Appearance of the Tympanic membrane on otoscopy

Appearance	Left ear No of Pt.'s (%)	Right ear No of Pt.'s (%)
Normal	4(8)	3(6)
Dull & Retracted	35(70)	34(68)
Thin & retracted	4(8)	4(8)
Air bubbles present	4(8)	5(10)
Bulged	3(6)	4(8)

The evidence of OME on otoscopic examination was observed in at least one ear of every patient in the study. Tympanic membrane abnormality suggestive of OME was bilateral in 43 (86%) patients.

Table 4. Mobility of Tympanic membrane on Pneumatic Otoscopy

Mobility	Left ear No of Pt.'s (%)	Right ear No of Pt.'s (%)
Normal	6(12)	5(10)
Absent	21(42)	22(44)
Restricted	23(46)	23(46)

Abnormality of tympanic membrane mobility (absent or restricted) was documented in at least one ear in all fifty patients. Forty-four (88%) patients had decreased mobility in left ear and 45(90%) had decreased mobility in right ear. There was a good correlation between patients presenting with unilateral hearing impairment and otoscopic abnormalities on the same side. However there was no relationship between laterality of presentation and otoscopic findings with adenoid hypertrophy.

Table 5. Tuning Fork tests

Tuning Fork test	Left ear No of Pt.'s (%)	Right ear No of Pt.'s (%)
Normal	3(6)	1(2)
Conductive hearing loss	33(66)	35(70)
Inconclusive	14(28)	14(28)

Tuning Fork test (TFT): Thirty-three patients (66%) had conductive hearing loss on left side and 35(70%) had conductive hearing loss on right side. However in 14 patients below 7 years TFT was inconclusive as these children were not co-operative.

Table 6. Tympanometry

Pattern	Left ear No of Pt.'s (%)	Right ear No of Pt.'s (%)
Type A	3(6)	4(8)
Type B	47(94)	43(86)
Type C	-	3(6)

Type B pattern on tympanometry suggestive of little or no change in compliance of tympanic membrane and characteristic of OME was observed in 47 (94%) patients in left ear and 43(96%) in right ear. A Type C pattern on tympanometry suggestive of negative middle ear pressure and characteristic of early OME was seen in 3 (6%) patients in right ear.

Discussion:

A total of 50 cases of otitis media with effusion were studied during the study period. Our study is a prospective study. In our study patients aged 5-12 years were considered. Haggard and Hughes[3](1991) in their study showed that 10-30% of Patients were in the age group of 2-7 years. While, Brooks[4] (1976) in his study showed 50% of the patients were in the age group of 5-7 years. As compared to other studies, the high age incidence in our study indicates the late presentation to the hospital due to poverty, ignorance and low socioeconomic conditions of the patients in this area. There is also lack of regular screening in school children as they do in western countries.

In our study, no apparent gender based difference in the incidence of OME. Tos and Stangerul[5](1985) have shown that male children have more incidence of SOM than female due to male preponderance of childhood infection. Paradise et al[6] (1997) reported no apparent gender based difference in the incidence of SOM. The socioeconomic status was based on modified Kuppuswamy scale. Here the education level, occupation of head of household and per capita family income were taken into account.[123] In the present study, most of the cases i.e., 35 (70%) belonged to lower class and least were in the upper class i.e., 6 cases (12%). 9 cases (18%) were in the middle class.

Paradise et al[7](1997) followed 2253 infants for 2 years and found an inverse relationship between the cumulative proportion of days with middle ear effusion and socioeconomic status. Otitis media with effusion (OME) is the commonest cause of hearing difficulty encountered by the Otologists. It is characterized by accumulation of effusion in the middle ear cavity due to altered mucociliary system within ME and ET. Otologists all over the world have attempted to solve the problems encountered in OME.[8]

Conclusion:

Otitis media with effusion (OME) is the commonest cause of hearing difficulty encountered by the Otologists. It is characterized by accumulation of effusion in the middle ear cavity due to altered mucociliary system within ME and ET. Otologists all over the world have attempted to solve the problems encountered in OME.

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Was informed consent obtained from the subjects involved in the study? YES
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