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Hearing Assessment in CSOM Patients Undergoing Medical Management

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Abstract
1.1 Objective
Comparative analysis of hearing in patients undergoing medical management in patients having chronic otitis media during active and inactive period
1.2 Materials And Methods
25 patients aged 15-50 years with chronic otits media with conductive hearing loss who undergoes medical management.
1.3 Results
Audiological improvement of around 10-15dB is seen in the study group .
Keywords : *Active mucosal disease,chronic otitis media, hearing, medical management, pure tone audiometry,*

I. Introduction

Chronic suppurative otitis media (CSOM) is a chronic inflammation of the middle ear and mastoid cavity. Clinical features are recurrent otorrhoea through a tympanic membrane perforation, with conductive hearing loss of varying severity. Patients with chronic suppurative otitis media (CSOM) respond more frequently to topical therapy than to systemic therapy. Successful topical therapy consists of 3 important components: selection of an appropriate antibiotic drop, regular aggressive aural toilet, and control of granulation tissue

II. Materials And Method

1.1 Source Of Data
25 patients aged 15-50 years with chronic otits media with conductive hearing loss who undergoes medical management in Coimbatore medical College and Government hospital will be included in the study, after obtaining the ethical committee clearance

1.2 Study Period:
January 2016 – January 2017

1.3 Study Design:
Retrospective study.

1.4 Study Subjects:
Patients
- 15-50 years
- chronic otitis media safe type
- patients with intact ossicular chain
- no sensory neural component

1.5 Sample Size **: 25 Patients**
1.6 Inclusion Criteria
Patients of age 15-50 yrs with chronic otitis media with active disease who underwent medical management for a period of 1-2 months at Government Medical College Hospital , Coimbatore

1.7 Exclusion Criteria
- 1. Pregnant and lactating woman

- 2. Children <15 years
- Sensory neural hearing loss

1.8 Defining Criteria:

Chronic inflammation of mucoperiosteal lining of middle ear cleft including mucosa ,tympanic membrane and ossicles characterized by persistent or intermittent ear discharge through tympanic membrane perforation..Ossicular erosion involves erosion of middle ear ossicles resulting in ossicular discontinuity.

III. Methodology

The study will be undertaken on patients having chronic otitis media active disease who underwent medical management for a period of 1-3 months at Coimbatore medical college hospital during the study period of one year (January 2016 to January 2017). A total of 25 patients who undergoes medical management for chronic otitis media at Coimbatore medical college hospital were studied. The study is proposed to be conducted after obtaining informed signed consent from the guardians of the patients. The duration of the study is one year from January 2016 to January 2017. The principal investigator, after obtaining informed signed consent from the patient or parents/guardians of the patients to participate in the study.Hearing is assessed using Pure Tone Audiometry before medical treatment. Treatment were performed by the same surgeon. Pure tone audiometry done for each and every patient 1-3 months following medical treatment. Air bone gap evaluated.

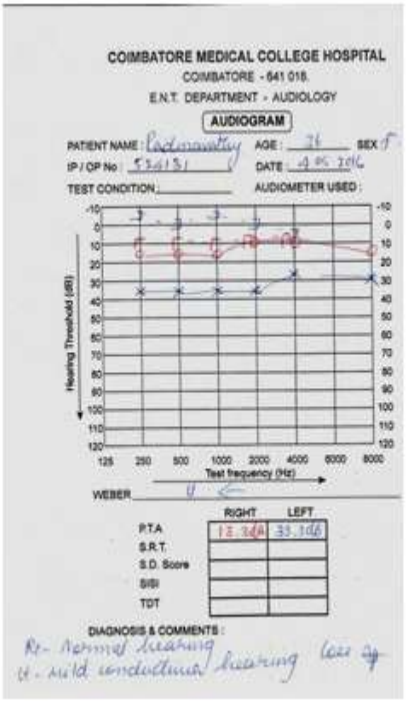

Fig 1.pretreatment PTA

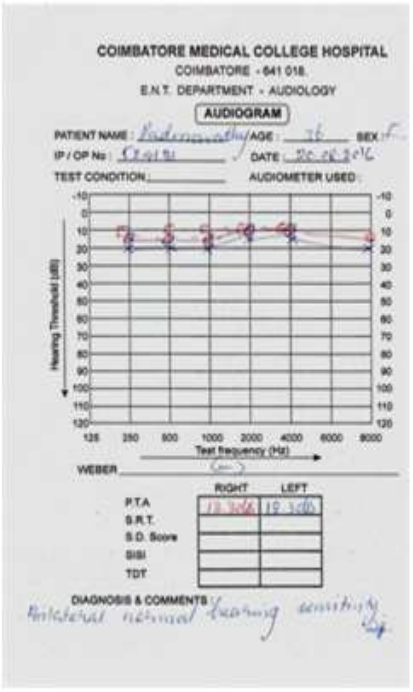

Fig 2. Posttreatment PTA

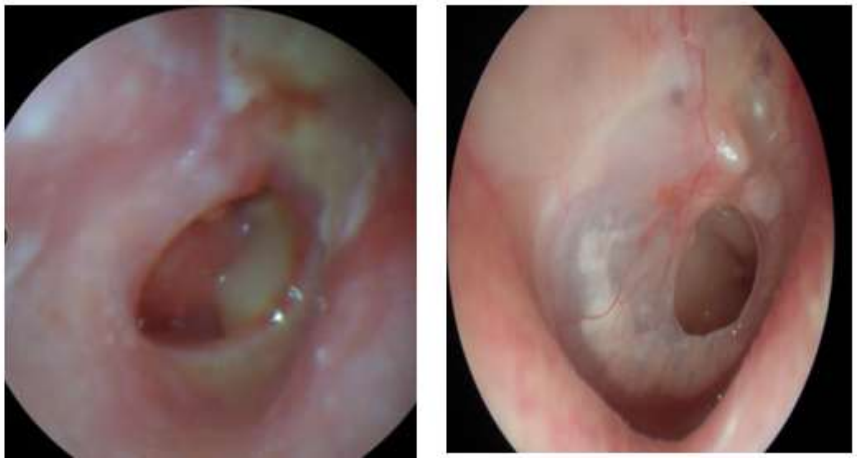

Fig 3.pre &post treatment TM images

IV. Discussion

Patients with CSOM that is unresponsive to topical and/or systemic medical therapy with appropriate aural toilet and control of granulation tissue require surgery. Tympanoplasty is performed to eradicate disease from the middle ear and to reconstruct the hearing mechanism, with or without grafting of the tympanic membrane. The initial stage in medical management is thorough aural toilet. It can be done either by dry or wet mopping.

This is most effectively carried out with a microscope and suction which also allows accurate assessment of the extent of ear pathology. However, some clinicians use gentle syringing with saline or antiseptic agent. Gentamicin or neomycin, usually with hydrocortisone, have been the most popular topical agents for many years. More recent studies have compared topical quinolone antibiotics (ciprofloxacin or ofloxacin)with these more traditional agents.

Most common organisms involved in csom safe type are pneumococcus, Hemophilus influenza , moraxella catarrhalis, staph aureus and streptococcal species.As penicillin group is more effective against these agents we used aminopenicillin amoxicillin 40mg/kg/day in 3 divided doses and macrolide like erythromycin 30-50mg/kg/day available in our institution.

V. Conclusion

Hearing improvement of about 10-15 dB is seen in 70% of study group patients and less than 10dB in 30% of study group patients having chronic otitis media with active disease who underwent medical management with antibiotics for a period of 1-3 months .

References

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Sl No	Name	Age/Sex	Before Medical Management	After Medical Management
1	Lakshmi	39/F	30.3db	18.3db
2	Chithra	18/F	26.5db	18.3db
3	Rasathi	40/F	38db	35.6db
4	Padmavathy	36/F	32.3db	18.3db
5	Vivek	23/M	38.3db	26db
6	Saleem	18/M	31db	25db
7	Sunil	29/M	41.6db	23.3db
8	Thiruvammal	47/F	35.3db	20db
9	Shamseena	25/F	36.6db	25db
10	Suresh	24/M	36.6db	31.6db
11	Mariyammal	46/F	35.3db	40.5db
12	Remya	26/F	28db	18.3db
13	Nallachi	36/F	30db	32.6db
14	Praveen	15/M	29.6db	18.3db
15	Praveena	17/F	31.4db	20.6db
16	Lakshmi	34/F	39db	25,6db
17	Guruvammal	45/F	34db	22db
18	Tamilselvan	45/M	38.3db	25db
19	Poovarasan	16/M	30.3db	25db
20	Deepa	29/F	38.3db	24db
22	Gomathi	36/F	31db	20db
23	Tamilselvi	20/F	32.3db	19.6db
24	Kaliyammal	47/F	31db	28db
25	Devraj	42/M	30db	18.6db