



**A STUDY OF ENDOSCOPE ASSISTED TYMPANOPLASTY IN INACTIVE MUCOSAL COM WITHOUT MASTOIDECTOMY IN MGMGH, TRICHY**

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**ABSTRACT**

Chronic otitis media, one of the leading causes of hearing impairment, is a long standing infection of the middle ear cleft. Inactive mucosal COM is characterised by a permanent perforation of pars tensa and that middle ear mucosa as seen through the perforation is inactive. Management of inactive mucosal COM include aural toileting and usage of topical antibiotics with steroids initially. Surgical methods include tympanoplasty with and without mastoidectomy. Endoscopy assisted tympanoplasty is the widely performed surgery for inactive mucosal COM. This article deals with the advantages and outcomes of Endoscopy assisted tympanoplasty without mastoidectomy in inactive mucosal COM.

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**INTRODUCTION**

Chronic otitis media is a long standing infection of the middle ear cleft, characterised by ear discharge and a permanent perforation of tympanic membrane. The perforation is just covered by squamous epithelium, doesnot heal spontaneously and become a sort of an epithelium lined fistulous tract. Incidence is higher in poor socioeconomic standards, poor nutrition and lack of health education. Affects both sexes and all age groups. Prevalence in India- In rural population: 46/1000 people, urban: 16/1000 people the leading cause for hearing impairment in rural population.

Perforation of the tympanic membrane can cause a variety of symptoms that include hearing loss, fullness, recurrent otorrhea, temperature sensitivity and pain. While most TM perforations occur as a sequelae of acute otitis media, trauma with high or low velocity injuries including probing with paper clips, cotton tip applicators and flying debris among many others, prior insertion of ventilation tube which fails to heal. In all cases, associated ossicular and inner ear trauma should be considered prior to intervention. Consideration should also be given individually to patient's age, underlying medical conditions, associated symptoms, status of the contralateral ear and patient's preferences.

Otoscopic diagnostic criteria can conveniently classify mucosal COM as healed otitis media, Inactive mucosal COM and active mucosal COM.

Inactive mucosal COM diagnosis implies a permanent perforation of pars tensa, and that middle ear mucosa as seen through the perforation is inactive. Factors influencing the activity of COM include commonly infections, upper respiratory infections, and susceptibility of middle ear mucosa to environmental insults through the TM perforation.

Tympanoplasty, the widely performed surgery for inactive mucosal COM, aims to close the air bone gap and improving hearing and reducing hearing disability in the patient. This includes successful closure of TM perforation and addressing mucosal/ ossicular chain integrity.

Rigid endoscopes offer advantage in its wide viewing angle, good general overall review of anatomy and pathology, viewing the anterior recess of tympanic membrane, and teaching purposes. Though many authors suggest cortical mastoidectomy should be carried at the same time as tympanoplasty, studies by Mishiro et al, Balyan et al found no significant difference in the graft success rate.

**MATERIALS AND METHODS**

This is a prospective study conducted in Department of ENT MGM GH, Trichy from 2009-2012.

Around 120 patients were selected for otoscope assisted tympanoplasty taking into following criteria:

- Wide external auditory canal
- Clinically dry (inactive) COM
- Audiometry with air bone gap <40 dB (usual range: 20 – 40 dB)

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- Radiologically bilateral symmetrical pneumatisation type
- DNE suggesting good nasal – NP airway patency and no OMC purulence

Attention to medical management with ear care, aural toileting, topical antibiotics with steroid ear drops and supportive management making ear dry for six weeks was given.

Successful closure rate in tympanoplasty of 75-95% in various studies and mean hearing improvement of <10 dB AB gap from various studies (page 3422 - Scott-brown) were taken into account

## RESULTS

### Distribution of study population

NO OF PATIENTS	120	AGE GROUP	
MALE	50	10 – 20	40(33%)
FEMALE	70	21-40	50(42%)
		>41	30(25%)

### Post op results: successful graft uptake

AGE GROUP	Graft uptake (12 weeks)	6 months	1 year
10 – 20	30(75%)	30	30
21-40	40(80%)	40	40
>41	24(80%)	24	24

Average Success Rate: 78.3%

Graft uptake was clinically assessed with endoscopic ear examination once healing has been satisfactorily achieved.

### Post Op Results In Hearing Improvement and Reduction in Disability

Age Group	3 months	Repeat audiogram after follow up of 1 year
10 – 20	<20 dB	No significant deterioration/ worsening of SNHL
21-40	<20 dB	
>40	Improvement of 10 dB AB gap in speech frequency	

## DISCUSSION

Endoscopes assisted procedure helps in reduced operating time, increased operative and postoperative comfort for the patient, reduced incidence of complications including SNHL, and the complications of associated mastoidectomy. As endoscopes form a part of routine clinical evaluation and COM being a diseases of low socioeconomic group, procedure performance and ease of carrying endoscope, procedure can be performed even in centres that lack microscopy and improved facilities. Moreover, it is cost effective in terms of duration of procedure (vs cortical mastoidectomy), early ambulation, and resumption of normal duties with suitable ear care. The closure rate is reported to be higher in small perforations than in larger perforations. Subjective improvement of wellbeing during the follow up period in the form of reduced recurrence of ear discharge, improvement of hearing, reduced frequency of medical attention, like recurrent otomycosis, frequent use of ear drops with potential ototoxicity and absenteeism from work gives us the impression of early surgical interventions once the disease becomes inactive with medical and supportive measures. The failure rate in anterior perforations is higher, reduced by anchoring anterior margins of the graft beneath the annulus. Revision surgery can be considered in those ears, where the graft fails with modification of surgical procedures if necessary.

## CONCLUSION

Initial management of mucosal COM is aural toileting, topical antibiotics with steroids. Definitive management is surgery - tympanoplasty to close the perforation, improve hearing, reduce the hearing disability, subjective wellbeing, thereby increasing productivity and reduced worsening of disease and its attendant complications including SNHL. Endoscopic assistance greatly improves patient compliance and feasibility of procedure even in rural centres

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