

Original article:

Study of outcome of tympanoplasty with and without cortical mastoidectomy in patients with mucosal COM in urban population

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Abstract:

Introduction: Chronic suppurative otitis media is a common condition seen in patients attending otorhinolaryngology clinics. The safe variety or mucosal chronic otitis media carries comparatively lesser risk but continues to discharge due to the mucosal infection of the middle ear by resistant organisms, infection of the nasopharynx with secondary infection of the middle ear cleft, and changes in the mucosa of the middle ear secondary to Eustachian tube dysfunction.

Material and methods: The study was carried out on 50 patients, who were divided into two groups of 25 patients respectively. Group A to consist of patients undergoing only tympanoplasty and Group B to consist of patients undergoing tympanoplasty surgery with mastoidectomy.

Results : There was graft uptake in 47 out of 50 patients with 23 patients(92%) in Group I and 24 (96%) in Group II while There was graft failure in 3 patients with 2 patients in Group I and 1 in Group II.

Conclusion: A simple mastoidectomy is an effective means of repneumatizing the mastoid air cell system as well as eradicating the mastoid source of infection.

Introduction

Chronic suppurative otitis media is a common condition seen in patients attending otorhinolaryngology clinics. The safe variety or mucosal chronic otitis media carries comparatively lesser risk but continues to discharge due to the mucosal infection of the middle ear by resistant organisms, infection of the nasopharynx with secondary infection of the middle ear cleft, and changes in the mucosa of the middle ear secondary to Eustachian tube dysfunction. Patients with episodic aural discharge and who have sclerosed mastoid on imaging studies presents the otologist with the

dilemma of surgical versus conservative management and if surgery is selected as the treatment of choice whether to combine mastoid exploration especially in cases where there is no pneumatization of the mastoid. ¹ This is due to the data from various centers which give diverse views on the success rate while doing tympanoplasty on wet ear and discharging ears with sclerosed mastoid. ²Despite the high success rate and the routine nature of the procedure, the effect of many influencing factors remains unresolved.

Whether cortical mastoidectomy with tympanoplasty is useful in cases of perforation

in chronic otitis media (COM) remains controversial.³

Material and methods :

Institutional Ethics Committee Clearance was obtained before start of study and written and informed consent for the procedure was obtained from all the patients. The study was carried out on 50 patients, who were divided into two groups of 25 patients respectively.

Group A to consist of patients undergoing only tympanoplasty and Group B to consist of patients undergoing tympanoplasty surgery with mastoidectomy.

The segregation of patients into the two groups was randomized.

Inclusion and Exclusion criteria

Inclusion criteria :

- ❖ Age 15-60 years
- ❖ Patient with inactive mucosal chronic otitis media
- ❖ Isolated conductive hearing loss

- ❖ X ray mastoid Schuller’s view showing sclerotic mastoid

Exclusion criteria :

- ❖ Age less than 15 years and more than 60 years.
- ❖ Patients having Attico-antral disease of the ear.
- ❖ Patient with active mucosal chronic otitis media
- ❖ X ray mastoid Schuller’s view showing pneumatic mastoid
- ❖ Patient with sensory neural hearing loss and mixed hearing loss
- ❖ Immunocompromised patients.
- ❖ Medical contraindications to undergo surgery.

Sampling procedure: A predesigned proforma will be used to record the relevant information (patient’s data, clinical findings, investigation reports) from the individual patient selected with the above inclusion and exclusion criteria.

Observation and results

Table 1: Post operative discharge wise distribution of cases in Group I and Group II

Post operative	Group I (n=25)	Group II (n=25)	Z Value	P Value
Discharge	2 (8)	1 (4)	0.59	>0.05

- Post operatively 3 patients had discharge due to infection out of which 2 were in Group I (8%) and 1 in Group II (4%)

Table 2: Graft status wise distribution of cases in Group I and Group II

Graft status	Group I	Group II	Total
Graft Failure	2	1	3
Graft Uptake	23	24	47
Total	25	25	50

Fisher exact test = 1

- There was graft uptake in 47 out of 50 patients with 23 patients(92%) in Group I and 24 (96%) in Group II
- There was graft failure in 3 patients with 2 patients in Group I and 1 in Group II

Discussion:

In our study the graft uptake was observed in 47 patients out of 50 where 23 were in Group A and 24 in Group B there were slightly better rates in group B but it was not statistically significant.

In a study conducted by McGrew et al of a sample size of 484 patients which were followed up for a period of 33 months had a success rate of 91.6% in mastoidectomy with tympanoplasty and 90.6% in tympanoplasty revealing that mastoidectomy does not influence the outcomes of surgery for of tympanic membrane perforations, but may improve underlying disease process.⁴

Balyan et al⁵ in a similar study observed slightly better success rates in the group A but concluded that there is no statistical difference between these groups in terms of graft success rates.

The present study is in accordance with A.Krishnan et al, Balyan et al, Y. Mishiro et al and Bhat et al studies.

Preoperatively Air bone Gap ranged from 15 to 45dB. Majority of cases in both the groups had AB gap of 25dB or above. Mean AB gap in Groups A and B was 35.20db and 36.20db respectively

Hearing improvement after the surgery was assessed in terms of closure of air- bone gap based on the pure tone audiometry done at 3rd month and 6th month. The hearing improvement was considered successful if the air bone gap closure was better than or equal to 10dB.

In Group A, an air bone gap closure > or equal to 10dB was noted in 22 patients (88%) and in Group B 23 patients (92%). In the remaining 3 patients of Group A the graft was not taken up in 2 patients while 1 had an improvement which was <10db.

In Group B, a successful improvement was noted in 23 (92%) cases. In the remaining 2 patients the graft was not taken up in 1 patient and the other patient did not show any significant hearing improvement . Higher sample size will be needed and ethical approaches will be also supportive^{6,7}

Conclusion

A simple mastoidectomy is an effective means of repneumatizing the mastoid air cell system as well as eradicating the mastoid source of infection.

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