

A COMPARATIVE STUDY OF TEMPORALIS FASCIA AND TRAGAL PERICHONDRIUM WITH CARTILAGE ISLAND GRAFT IN MYRINGOPLASTYShanta Nibedita Satpathy¹, Rajendra Satpathy²**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: Hundred cases of chronic suppurative otitis media (CSOM) with dry central perforation were chosen for this study. All the cases have undergone Myringoplasty under local anaesthesia. They were of both sexes and age group ranged from 20-55 years. Temporalis fascia and tragal perichondrium with Cartilage Island were used for grafting both underlay (large perforation) and on lay (for smaller perforation) was done. Post-operative follow up was carried out for six months. In this study it was found that graft taken was better with tragal perichondrium with Cartilage Island than temporalis fascia and hearing improvement was better with temporalis fascia as compared to tragal perichondrium. Younger age group had better results after surgery with better hearing improvement. It was found that larger perforation had more impairment of hearing and post-operative hearing gain was less as compared to small perforation. Graft failure occurred due to post-operative infection, upper respiratory tract infection and pond bathing.

KEYWORDS: Myringoplasty, Chronic suppurative otitis media.

INTRODUCTION: Repair of Tympanic membrane perforation has been done with several autogenous graft materials like temporalis fascia, tragal perichondrium with cartilage, choncal perichondrium with cartilage, areolar tissue from above temporalis fascia, ear lobule fat and scar tissue. This study was done to compare results with cartilage of temporalis fascia and tragal perichondrium with cartilage island graft. The aim of the surgery was to give a dry ear with permanent closure of perforation and restoration of hearing in a successfully grafted ear.

AIM & OBJECTIVES: The study aims to compare the results of temporalis fascia and tragal perichondrium with cartilage island graft for repair of small to moderate size perforation of tympanic membrane. These graft materials are harvested from the same site of surgery. Underlay technique was followed in moderate perforations and on lay in small perforations.^[1] The primary objective of this study is to compare the graft take up rate and improvement of hearing following successful grafting.

MATERIALS & METHODS: This study was carried out in S.R.Clinic and PNH, Bhubaneswar between Jan. 2007 to Jan. 2014. All patients with CSOM with dry ear were examined clinically and ear microscopy was done. Investigations like pure tone audiogram, X-Ray mastoids (Lateral oblique view), X-Ray paranasal sinuses (occipitomeatal view) and complete haemogram were done. Patients having dry central perforation for 3 months^[2] with audiometry showing pure conductive type of hearing loss were selected for the study. Age of the patients varied from 20-55 yrs and hearing loss was mild to moderate.

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In this study 100 subjects were selected – Temporalis fascia were used in 50 cases and tragal perichondrium with cartilage was used in 50 cases. Post aural route was used for under lay grafting and trans canal root for onlay grafting. Graft material was harvested from the same side. In underlay grafting, graft was put lateral to handle of malleus by elevating the tympanomeatal flap. In onlay grafting trans-canal route was used, care was taken to separate the whole of squamous layer from the tympanic membrane. Post-operative follow up was done at 4weeks, 6weeks, 12 weeks and 6 months. Pure tone audiometry was done after 12 weeks in successful cases.^[3]

RESULTS & ANALYSIS: Age of the patients in this study varied from 20-55 yrs (Table-1). Maximum numbers of cases (39) were between 30-40yrs, followed by 33 cases between 20-30 yrs, 24 cases between 40-50yrs and 4 cases between 50-55 yrs. All cases had dry ear and normal haemogram. Sclerotic mastoid was found in 27 cases and pneumatic in 73 cases. Pure tone audiometry showed air conduction threshold range at 20-45 db. And bone conduction threshold at 10-12 db. Average airborne gap were in the range of 20 db.

Successful closure of tympanic membrane was seen in 94 cases. 4 cases had post-operative ear discharge and graft failure. 2 cases had residual perforation. Hearing improvement was maximum in the age group of 20-40 yrs., i.e., average 10 db.

When comparing graft take up rate of temporalis fascia with tragal perichondrium showed a ratio of 92%:96%. Temporalis fascia showed mean hearing improvement 12dbas compared to 8db in case of tragal perichondrium with cartilage. To sum up hearing was better with temporalis fascia and graft take-up was better with tragal perichondrium with cartilage graft (Table-2).

| Age | No of cases |
|-------|-------------|
| 20-30 | 33 |
| 30-40 | 39 |
| 40-50 | 24 |
| 50-60 | 4 |

Table1: Age distribution

| Graft | Temporalis fascia | Tragal perichondrium with cartilage island |
|---------------------|-------------------|--|
| No. of cases | 50 | 50 |
| Successful closure | 46 | 48 |
| Hearing improvement | 44 | 42 |

Table2: Comparative study of temporalis fascia graft vs. tragal perichondrium with cartilage island graft

DISCUSSION: In our study, presented for 100 cases of myringoplasty, male: female ratio was 33:67. Majority were from rural background. All of them had ear discharge for long duration with varied degree of hearing loss. Dry ear for 3 months was the main criteria.^[2] In all cases pre-operative audiometry was performed, post-operative audiometry was performed in only successful cases after 12 weeks.^[3] Successful closure and hearing improvement were good in younger age group,^[4] While

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graft failure and poor hearing improvement were observed in older age group. So age of the subject affect the overall outcome of myringoplasty operation.^[5]

Healing of the perforation was complete in most of the cases in 2-3 months. Among 4 cases of graft failure 2 were from each. Both the cases of residual perforation were temporalis fascia graft which developed after 4 months and responded to 15% trichloroacetic acid cauterization. Causes of graft failure were due to upper respiratory tract infection and pond bathing against advice.

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