Abstract: In this study the outcome of graft take up following myringoplasty is evaluated in 50 patients with perforation of tympanic membrane in the age group of 16-45 years. Temporalis fascia graft was used as underlay for all cases of myringoplasty. Outcome was assessed in terms of graft acceptance or rejection. There was successful graft uptake in 46 cases.

Keyword: myringoplasty, underlay technique, temporalis fascia

Introduction: Tympanic membrane perforations usually occur secondary to trauma, acute otitis media and chronic otitis media. Myringoplasty is a procedure where defect in the tympanic membrane is closed with different graft materials like temporalis fascia. Myringoplasty is usually done when the tympanic membrane perforation is more than 25% where chances of spontaneous healing is less. The aim of myringoplasty is protection of the middle ear and inner ear with improvement of hearing.

Materials & Methods: This is a retrospective study done in the Department of E.N.T, in a tertiary care hospital in Coimbatore for a period of two years from August 2011 to July 2013. 50 patients with dry tympanic membrane perforation were considered for the study. Patients were subjected to ENT examination, pure tone audiometry to assess the cochlear reserve, X-rays mastoids to assess cellularity and X-ray paranasal sinuses to rule out any focus of sepsis. Infections of the ears, nose & paranasal sinuses, nasopharynx and oropharynx were treated and controlled with antibiotics preoperatively. Patients with associated deviated nasal septum, sinonasal polyps and inferior turbinate hypertrophy were excluded from the study. Cases with sensorineural hearing loss and Eustachian tube dysfunction were also excluded from the study. Among the 50 cases considered for the study, 36 cases were operated under general anaesthesia while 14 cases were done under local anaesthesia. For all cases, intraoperatively the margins of the perforations were freshened and harvested temporalis fascia graft was placed as underlay. The graft was tucked underneath the handle of malleus and beneath the anterior rim of the perforation. Graft was supported with gel foams kept in the middle ear cavity. All patients were continued on antibiotics for one week post-operatively. Dressings and sutures were removed at the end of first week post-operatively. Graft uptake was assessed at 1 week, 3 weeks, 3 months and 6 months post-operatively by clinical examination and otoscopy. Ear swab culture was done for those patients who developed infections postoperatively.

Results: Total number of patients included in the study was 50.

Age-wise distribution

<table>
<thead>
<tr>
<th>Age group</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-25</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td>26-35</td>
<td>18</td>
<td>32</td>
</tr>
<tr>
<td>36-45</td>
<td>11</td>
<td>22</td>
</tr>
</tbody>
</table>

Majority of the patients in the study were in the age group of 16 – 25 years. There were 28 males and 22 females included in the study.
Majority of the patients in the study presented with medium sized tympanic membrane perforations. Temporalis fascia graft was used as underlay in all cases to close the tympanic membrane perforations.

Graft uptake was successful in 92% of the patients who underwent myringoplasty. Infection in the post-operative period was found to be the main cause for graft failure in the remaining 8% of the cases.

**Discussion:** Patients with tympanic membrane perforations present with recurrent ear discharge usually associated with upper respiratory tract infections and conductive hearing loss. In myringoplasty different graft materials can be used like temporalis fascia, tragal perichondrium, vein and cartilage. Graft can be placed lateral to tympanic membrane remnant (onlay), medial to tympanic Graft failure 4 8 membrane remnant (underlay) and between the fibrous layer and the endothelial layers of the tympanic membrane (interlay). Borkowski et al used tragal perichondrial graft in their study and achieved 100% successful graft uptake. However in our study using temporalis fascia graft, the outcome was 92% successful graft uptake. The reasons for graft failure in 8% of the study population were infections due to compromise in instrument sterilization techniques and reactivation of focus of subclinical infection in the nose and throat following surgery.

**Conclusion:** The success rate of graft uptake in this study proves that temporalis fascia is a good graft material in myringoplasty and underlay technique of graft placement gives good success rate in myringoplasty. Repositioning the posterior tympanomeatal flap after graft placement improves blood supply to the graft and hence improves the rate of graft acceptance.

**References:**