

# OUTCOME OF MYRINGOPLASTY

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## ABSTRACT

**Objective:** The out come of graft acceptance and rejection in myringoplasty were evaluated in patient of 16-45 year of age, having dry central perforation.

**Material and Methods:** Admitted patients in ENT unit Post-Graduate Medical Institute Lady Reading Hospital, Peshawar. Myringoplasty was done in 60 patient admitted in ENT unit with dry central perforation. Age limit was 16 - 45 years. All patients were admitted in door a night before. All the relevant investigation including clinical examination, pure tone audio gram, x-ray mastoid and para nasal sinuses were done. Examination under microscope was carried out a day before admission. Operations were done under local anaesthesia graft was taken from temporalis fascia. After weeks the tympanic membrane were evaluated under Microscope, to assess the result of Myringoplasty.

**Results:** Myringoplasty was successful in 35 patients (60%) and in 24 patients (40%) graft was rejected due to infection.

**Conclusion:** Myringoplasty is a beneficial procedure to protect the middle ear and inner ear for future hearing deterioration. The improvement of hearing is an added benefit. Overall 2/3<sup>rd</sup> of patients get their graft accepted. In absence of meddle ear cleft infection, the reason of high graft rejection is due to improper sterilization of instruments and environment.

**Key words:** Myringoplasty, Onlay, Underlay.

## INTRODUCTION

Tympanic membrane perforation may be secondary to trauma, often caused by cotton tipped swab, acute otitis media, and chronic

suppurative otitis, characterized by ear discharge, deafness and tympanic membrane perforation.<sup>1</sup>

Patients with tympanic membrane perforation presents clinically with mild conduc-

tion Hearing loss and Aural fullness.<sup>2</sup> Symptoms of Tinnitus, vertigo along with Hearing loss suggest sensory neural damage.

Treatment of tympanic membrane perforation include keeping the Ear dry, aural toilet and local application of antibiotic drops.<sup>3</sup> If the perforation is less than 25% of tympanic membrane surface, then 90% of the perforation heal spontaneously.<sup>3</sup> Large size, perforation infection, and foreign bodies are the factors which reduce spontaneous healing.<sup>4</sup> Paper patching has no effect on the rate of out come of healing but it can be effective in patients with tympanic membrane perforation who has mild conductive hearing loss<sup>2</sup>. In traumatic perforation closure is rapid with 1% hyaluronic acid which is glycosaminoglycan.<sup>5</sup> In Myringoplasty, Graft can be taken commonly from temporalis fascia and sometimes from Tragal perichondrium, Vein, Cartilage.<sup>6</sup> Graft can be placed either medial to remnant of tympanic memberane (inlay) or lateral to remnant of tympanic membrane.<sup>7</sup>

## MATERIAL AND METHODS

A retrospective study was carried out at ENT unit PGMI, LRH Peshawar for a period of two years from September 1994 to September 1996.

### Inclusion Criteria

Age range from 16-45 years in patients having dry central perforation. In these patients the pathology in Nose, throat, has been excluded, the mastoids were cellular, the Cochlear functions were within normal limits.

### Exclusion Criteria was

- 1) Infection in middle ear and mastoids.
- 2) Infection in nose sinuses, nasopharynx and oropharynx.

- 3) Deviated nasal septum, enlarged inferior turbinate, polyp in the nose.
- 4) Sensori neural hearing loss.
- 5) Eustachian tube malfunction.

In our study we did Myringoplasty under local Anesthetic. Xylocaine 2% with adrenaline is used as local anesthetic, which in a dose of 3-7 mg / Kg body weight.

Lignocain 2% with adrenalin is used in a concentration of 1:80000 or 1:200,000 for vaso constriction locally. Local Anaesthetic was given in all four Quadrants of external auditory meatus

Temporalis fascia and tragal pericondrium is used as Graft and was taken under Local Anaesthesia.

Under Binocular Microscope the perforation in tympanic membrane was assessed. Margins of perforation were freshened. Epithelium of the remnant of tympanic membrane is denuded in cases where graft is placed lateral to remnant of tympanic membrane (onlay).

Patients were put on injectable antibiotic for two days and then switched to oral antibiotic. After 7-days polyfex ointment pack was removed and ears were examined under microscope. After 6-weeks, P.T.A (Pure Tone Audiometry) was done to assess the hearing improvement.

Patients followed up at weekly interval for 1-month fortnightly for 2-months and monthly for 6-months. In each follow up visit Ear was examined to assess whether graft was taken or not, and hearing was assessed.

## RESULTS

Total No. of patients included in our study was 60.

In our study age range was 16-45 years. 20 patient (33.33%) were between 16-25 years

age. 25 patients (41.63%) were between 25-35 year age. 15 patients (25 %) were between 35-45 years age (Table 1).

**AGE DISTRIBUTION**

Age limit	No. of patients	% age
16-25	20	33.33%
25-35	25	41.67%
35-45	15	25%

TABLE-1

35 patient were male and 25 patient (41.67%) were females.

In 30% (50%) inlay technique was used in myringoplasty, and 30 patient (50%) Inlay Technique was used.

In our study 20 patient (33.33%) were having small central perforation in 25 patient (41.67%) medium size central perforation. Large central perforation was present in only 15 patient (25%). (Table-2).

**SIZE OF PERFORATION**

	No. of patients	% age
Small central perforation	20	33.33%
Medium size central perforation	25	41.67%
Large central perforation	15	25%

TABLE-2

In all cases temporalis fascia was used to closed the perforation (60 patient 100%).

Success rate in our study was (60%). 17 patients (47.22%) were found to have successful myringoplasties in which onlay technique was used. 19 patients (52.78%) were having successful myringoplasties in which inlay technique was used. (Table-3).

**SUCCESS RATE**

	No. of patients	% age
ONLAY	17	47.22%
INLAY	19	52.78%

TABLE-3

Infection was found only complication which led to failure of myringoplasties (24 patients 40%).

**DISCUSSION**

Tympanic membrane perforation is a drastic sequele of chronic Otits media which is usually caused by cotton tipped swabs, acute otits media (resolution stage)<sup>1</sup>. If the ear is kept dry and with the instillation of local ear drops, it heals itself<sup>3</sup>. Moreover if the size of perforation is 1/4<sup>th</sup> of the total ear drum, then about 85 to 90% heal spontaneously. In mild conductive hearing loss if we do paper patching their is no effect in out come of healing<sup>2</sup>. If the size of perforation is large (sub total) and in the presence of active infection and foreign bodies, the chances of healing are reduced<sup>4</sup>.

The application of 1% hyaluronic acid which is glycosaminglycan in traumatic perforation have wonder full results<sup>5</sup>. Most commonly used graft material are temporalis fascia, tragal perichondrium, veingraft and cartilage.

Myringoplasty is successful when there is no infection in middle ear, mastiod, nose, and nasopharynx, and it should be treated before doing myringoplasty. Deviated nasal septum, nasal polyps and sinusitis and it should be treated surgically to get good result myringoplasty. Patent Eustachian tube is pre request for myringoplasty.

Myringoplasty is procedure in which the defect in tympanic membrane is closed

with different graft materials. The homologous temporalis fascia and Tragal perichondrium are the most frequently used graft materials.

Bockowski et al has used tragal perichondrium as a graft giving 100% results,<sup>8</sup> whereas in our study the success rate was about 60%. Underlay and overlay are the most commonly used techniques for tympanic membrane perforations.<sup>9</sup> No significant difference in results were shown by cruvetuu et al in underlay and overlay techniques showing 88.8% and 97.6% respectively. In this study the success rate was 60% in overlay and 66.6% in underlay procedures showing no significant difference in success rate. In adults the myringoplasty under local anaesthesia reduces the operation time and post operative morbidity.<sup>10</sup> In this study all of the patients underwent the procedure under local anaesthesia reduces the morbidity in all cases. The success rate in terms of deafness and ear discharge was 86%.<sup>4</sup> In this study the success rate was 60%. The reasons for failure of myringoplasty was infection leading to rejection of graft the cause for infection was not meticulous sterilization of Instruments.

## CONCLUSION

This study concludes that temporalis fascia is better graft to be used, because of its low metabolic rate. Posterior meatal flap improves the successful results because it provides better blood supply to central part of the graft. Moreover underlay and overlay techniques give no significant difference in success rate.

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