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Evaluation of Graft Take Up in Myringoplasty- Temporalis Fascia Vs Tragal Perichondrium

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Original Research Article

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Abstract: The aim of this study was to compare and evaluate the graft success rate in myringoplasty between the temporalis fascia and tragal perichondrium**.** This is a prospective study involved 80 patients with chronic suppurative otitis media (CSOM), tubotympanic type divided into two groups. 40 patients underwent myringoplasty with temporalis fascia graft and 40 patients underwent myringoplasty with tragal perichondrial graft. All the 80 patients were followed for 3 months after surgery to observe the graft take up. Post operatively after 3 months, with temporalis fascia the graft take up rate was 95% and with tragal perichondrium it was 90%. In our study even though the graft take up rate was better with temporalis fascia (95%) than tragal perichondrium (90%) in myringoplasty ,it was not significant. So both temporalis fascia and tragal perichondrium were ideal graft materials for myringoplasty.
Keywords: Temporalis fascia, Tragal perichondrium, Myringoplasty.

INTRODUCTION

Chronic suppurative otitis media is the chronic inflammation of the mucoperiosteal lining of the middle ear cleft, characterized by ear discharge, a permanent perforation of the tympanic membrane and impairment of hearing [1-3]. If the perforation fails to heal spontaneously or by conservative therapy they require surgical closure of the tympanic membrane by myringoplasty. Autologous graft materials such as temporalis fascia, tragal perichondrium, cartilage, and fat and fascia lata have stood the test of time in repairing tympanic membrane perforation [4-5].

These materials vary regarding their ease of harvesting, preparation time, placement ease, viability, graft uptake and hearing improvement. However due to their anatomic proximity, translucency and suppleness, temporalis fascia and tragal perichondrium are the most preferred graft materials [6-7].

As no proper data available for comparison of temporalis fascia versus tragal perichondrium in myringoplasty, we have conducted this study to compare and to evaluate the graft take up rates in myringoplasty between these two graft materials.

MATERIALS AND METHODS

This prospective study was conducted in the Dept of ENT, Mamata Medical College, and Khammam during a period of one and half year from January 2016 to June 2017. Patients with complaints of discharging ear and impairment of hearing were screened in the ENT OPD, and 80 patients suffering from CSOM, mucosal type in the age group of 10-65 yrs were evaluated in this study.

Detailed history was taken from all the patients and micro-otoscopic, physical examinations were carried out. The patients with dry central perforation in the tympanic membrane for a minimum period of 6 weeks with patent Eustachian tube, intact ossicular chain and good cochlear reserve were included in this study. The patients with ossicular chain defects, pathological middle ear mucosa, tympanosclerosis, cholesteatoma, sino-nasal pathology, otorrhoea, and poor cochlear reserve were excluded from this study. A total of 170 patients were screened in the OPD. Out 170 only 80 patients met the inclusion criteria of the study. These patients were allotted alternately for the surgical procedure myringoplasty with the study graft materials temporalis fascia and tragal perichondrium irrespective of the age, sex and size of the perforation.

At the end of the study, the 80 patients were divided into 2groups. Group 1 contains 40patients, who underwent myringoplasty with temporalis fascia graft by underlay method and Group 2 contains 40 patients, underwent myringoplasty with tragal perichondrium by underlay method. All the patients were followed for 3

months postoperatively at monthly intervals and were examined for the graft take up.

RESULTS

This study evaluated 80 patients and they were divided into two groups. Each group included 40 patients. Group1 patients underwent myringoplasty with temporalis fascia graft and Group 2 patients underwent myringoplasty with tragal perichondrium. This study included the patients with age ranging from 10-65 yrs. Maximum number of patients seen in the age group of 21-35 yrs.

Table-1: Age distribution of patients (n=80)

Age(yrs)	Group 1	Group 2	Total
10-20	4	4	8(10%)
21-30	20	16	36(45%)
31-40	12	16	28(35%)
41-50	3	2	5(6.25%)
>50	1	2	3(3.75)

The male to female ratio was 1:1.5, and the majority of the patients were from rural background. The patients were from different occupations, but most of the patients were daily laborer.

In our study we have divided the central perforation of the tympanic membrane into 5 categories, small, medium, large, subtotal, and total. Majority of the patients consist of large perforation with 50-75% of the tympanic membrane surface area.

Table-2: perforation size among the patients (n=80)

Size of perforation	No.of Patients in Group 1	No.of patients in Group 2	Total
Small	1	2	3
Medium	13	14	27
Large	21	17	38
Subtotal	5	7	12
Total	O	0	0

In this study, the graft take up was better in group-1(95%) when compared to group-2(90%), but it was not significant because the P value is 0.3959 (P<0.05 is significant) . We have also observed that after healing, normal translucent appearance of neotympanum in the postoperative period was seen only with temporalis fascia, while with tragal perichondrium the neotympanum was thicker and translucent to opaque.

Table-3: Graft take up rate (n=80)

Graft material	No. of patients	Graft success	Graft failure
Temporalis fascia (Group 1)	40	38(95%)	2(5%)
Tragal perichondrium (Group 2)	40	36(90%)	4(10%)
Grand total	80	74(92.5%)	6(7.5%)

Chi-square =0.7207
P=0.3959(Not significant)

DISCUSSIONS

The tympanic membrane perforations significantly impair the quality of life for millions of patients [8]. There are a number of materials for closure of tympanic membrane perforations, skin, perichondrium, vein, dura, temporalis fascia, and cartilage [9]. The most commonly used technique for the repair of tympanic membrane perforation is underlay grafting with temporalis fascia. In the cases of subtotal and total perforations, atelectatic drum ,retraction pocket long term result of temporalis fascia grafting may not be very satisfactory [10,11]. To overcome this problem perichondrium or cartilage are used with good results.

In this study we have compared the results of temporalis fascia and tragal perichondrial grafts used for the repair of perforated tympanic membrane, using underlay technique.both being mesodermal in origin, they are free from postoperative cholesteatoma.

In our study graft take up rate was better with temporalis fascia (95%) when compared with tragal perichondrium ((90%). Even though the graft take up

rate was better with temporalis fascia than tragal perichondrium, it was not significant (P>0.05). Our study results were comparable with the results of similar studies conducted by various authors. In the study conducted by Gibb using temporalis fascia as graft material by underlay technique the graft take up rate was 87.5% [4]. Jyoti P Dabholkar conducted the similar study where the graft take up rate with temporalis fascia was 84% and tragal perichondrium was 80% [12]. Qureshi *et al*. reported success rate of 94% in 32 cases of primary myringoplasty with tragal perichondrium [13].

CONCLUSION

In this study even though the graft take up rate was better with temporalis fascia than tragal perichondrium in myringoplasty, it was not significant. So both temporalis fascia and tragal perichondrium are equally ideal graft materials for myringoplasty.

REFERENCES

1. Jung TT, Hanson JB. Classification of otitis media and surgical principles. Otolaryngol Clin North Am. 1992; 32: 369-83.
2. Saha AK, Muni DM, Ghosh SN. Evaluation of improvement of hearing in type1 tympanoplsty and its influencing factors. Indian J Otolaryngol Head Neck Surg. 2006; 58: 253-7.
3. Chandra KS. Combined effect of Eustachian tube function and middle ear mucosa on tympanoplasty. Indian J Otol. 2006; 12: 26-7.
4. Gibb AG, Chang SK. Myringoplasty(A review of 365 operations) J Laryngol Otol.1982; 96: 915-30.
5. Dabholkar JP, Vora K, Sikdar A. Comparitive study of underlay tympanoplasty with temporalis fascia and tragal perichondrium. Indian J Otolaryngol Head Neck Surg. 2007; 59: 116-9.
6. Hartwein J, Leuwer R. Crown-Cork tympanoplasty-a method for complete reconstruction of tympanic membrane. Laryngo-rhino-otologie.1992 Feb; 71(2): 102-5.
7. Wullstein H. Theory and practice of tympanoplasty. The Laryngoscope. 1956 Aug; 66(8): 1076-93.
8. Rahman A. Healing of tympanic membrane perforation an experimental study from Karolinska Inistitute and University Hospital Stockhole Sweden. 2007; ISBN 978-91-7357-243-9.
9. Couloigner V. Inlay butterfly cartilage tympanoplasty in children. Otol Neurotol. 2004; 25: 856-63.
10. Anderson J, Caye-Thomasen P, Tos M. A Comparison of cartilage palisades and fascia in tympanoplasty after surgery for sinus or tensa retraction cholesteatoma in children. Otol Neurotol. 2004; 25: 856-63.
11. Gierek T, Majzel K. Results of myringoplsty and type1 tympanoplasty with the use of fascia, cartilage and perichondrium grafts (in polish). Otolaryngologia Polska. 2004; 3: 529-33.
12. Dabolkar JP. Comparitive study of underlay tympanoplasty with temporalis fascia and tragal perichondrium. Indi Otolaryngol Head Neck Surg. 2007; 116-119.
13. Qureshi MS, Jones NS. Day care myringoplsty using tragal perichondrium. Clin Otolarygol Allied Sci.1995; 20(1): 12.