Research Paper

Volume : 5 | Issue : 6 | June 2016 • ISSN No 2277 - 8179 | IF : 3.508 | IC Value : 69.48

A Comparative Study of Graft Uptake in Wet vs Dry Tympanoplasty

Medical Science

KEYWORDS : chronic otitis media, dry ear, wet ear, tympanoplasty

Dr Neeraj Suri	Assistant Professor, ENT department, GMERS medical college, Gandhinagar
Dr Toshi Janardan	Resident Doctor, ENT department, GMERS Medical College, Gandhinagar
*** Dr Hiren Parmar**	Associate Professor, GMERS Medical College, Gandhinagar. * Corresponding Author

ABSTRACT

Background: Chronic otitis media (COM) is a long standing infection of a part or whole of middle ear cleft. Goals in treating COM is to achieve a safe ear, eradicate disease, stabilize or improve hearing by reconstructing the tympanic membrane and ossicular chain, and to prevent further development of disease is considered while performing surgery for a tympanic membrane perforation. The objectives of the study include: determining the graft uptake rates in the patients with chronic perforation of the tympanic membrane with and without active discharge.Material and methods: This study was carried out in the Dept of ENT , GMERS Medical College & Hospital. It comprises of 100 patients with Chronic otitis media with central perforation with 50 patients each in dry and wet ear group over a period of 2 years from Jan 2014 to Dec 2015. All the patients were examined carefully after admission.Results: Out of 100 cases , 50 cases had dry ear and 50 cases had wet ear. In 48 cases (96%) out of 50 dry ear, perforation healed and 2 (4%) case failed to heal. Whereas, in wet ear, perforation healed in 46 cases (92%) out of 50 cases .Conclusion: We might conclude that if an appropriate surgical technique is taken, and an efficient postoperative education is provided, then satisfying results can be achieved from operations on wet ears (just like dry ears).[9] However, in order to be sure we need to carry out more studies with larger samples and in multiple centers where there are more variables to consider.

Introduction

Chronic otitis media (COM) is a long standing infection of a part or whole of middle ear cleft.[1] Incidence of COM is higher in developing countries because of poor socioeconomic standards, poor nutrition. In India overall prevalence rate is 46 and 16 persons/1000 in rural and urban population respectively.[2]

Goals in treating COM is to achieve a safe ear, eradicate disease, stabilize or improve hearing by reconstructing the tympanic membrane and ossicular chain, and to prevent further development of disease is considered while performing surgery for a tympanic membrane perforation. Previously , it was thought that the success rate of myringoplasty in actively discharging ear is much lower that that of dry ear. Now its an accepted fact that an actively draining central perforation is not a contraindication for ear surgery. The discharging ear presents the otologists with the dilemma of operating on it or not, this is due to widespread belief that the success rate while doing ear surgeries on wet ears is decidedly inferior. The objectives of the study include: determining the graft uptake rates in the patients with chronic perforation of the tympanic membrane with and without active discharge.

Material and methods

This study was carried out in the Dept of ENT , GMERS Medical College & Hospital. It comprises of 100 patients with Chronic otitis media with central perforation with 50 patients each in dry and wet ear group over a period of 2 years from Jan 2014 to Dec 2015. All the patients were examined carefully after admission.

Inclusion criteria :

Chronic otitis media with central perforation (small, medium and subtotal perforation)

Age between 15 to 45 years sex both male and female.

Having an infection background of Chronic Otitis Media and perforated tympanic membrane.

Lack of acute upper respiratory tract at time of surgery

All patient with wet ear having a mucoid discharge with negative on culture.

No evidence of active infection in nose and throat.

Hearing loss < 40 dB

Exclusion criteria :

Age : less than 14 years & more than 45 years

Patients with total perforation and cholesteatoma

Patients with sensorineural hearing loss

Revision tympanoplasty cases

Complicated otitis media

All patients under the study were undergone routine investigations and examination using operating microscope was done to assess the site and size of perforation and middle ear mucosa. After taking written informed consent, all patients undergone myringoplasty through postaural approach by underlay technique taking temporalis fascia as a graft material.[3] All the patients were followed up at 2wks, 4wks, 6wks and 8 wks and 6 months after surgery. Aim of our study was to assess the graft takeup rate between these two groups.

Results

Table 1 Graft incorporation in both groups:

Graft taken up	Dry perforation(50)	Wet perforation(50)
yes	48(96%)	46(92%)
no	2(2%)	4(8%)

Out of 100 cases , 50 cases had dry ear and 50 cases had wet ear. In 48 cases (96%) out of 50 dry ear, perforation healed and 2 (4%) case failed to heal. Whereas, in wet ear, perforation healed in 46 cases (92%) out of 50 cases .

Out of 50 dry perforation cases, 26 (52%)patients had subtotal perforation and rest 24 (48%) patients had small and medium size perforation. 2 failure cases were among those 26 subtotal perforations. All small and medium size dry perforations healed nicely.

Out of 50 wet perforation cases, 28 (56%) patients had subtotal perforation and rest 22 (44%) patients had small and medium size perforation. 2 failure cases were among those 28 subtotal perforations. 2 failure cases were among those 22 small and medium size wet perforations

Discussion

Spontaneous healing of chronic tympanic membrane perforation is uncommon and medical management is not effective in this regard. Hence surgical intervention is necessary for closure of perforation. Tympanoplasty is an operation that removes infection and restore middle ear function in the ears with chronic otitis media.[4]

The repair of the tympanic membrane dates back to more than a century. Myringoplasty is a safe and effective technique to improve the quality of life of patients. In 1878, Berthold successfully closed a perforation with a full thickness skin graft and introduced the term “myringoplastik”. Myringoplasty was further developed by Wullstein and Zollner. Ideal candidates for myringoplasty should have central perforation with normal middle ear mucosa, intact ossicular chain and good cochlear reserve.[5] Myringoplasty in dry ear having very good result. But in most of the times patients present with discharging ear. It is a common belief that surgery in a wet ear seems to have a poorer result. In our study , we had a success rate of 96% in dry perforation as compared to the 92% in wet cases. In a prospective study, outcome of type I tympanoplasty done on 100 patients with dry and wet ears was compared. The study showed that the presence of ear discharge at the time of surgery did not interfere with the results, but discharge should be mucoid and scanty.[6] Another study conducted on 50 patients with mucoid discharge undergoing myringoplasty, to find the efficacy of graft uptake, showed that primary closure of perforation was seen in 84% cases. It showed that the presence of ear discharge at the time of surgery did not influence the results of surgery.[7]

In our study, closure rate in dry perforation is much high and even in wet cases the success rate is 92% which is compatible to other.

Presence of mucoid discharge which is culture negative at the time of surgery is not a contraindication for surgery as it does not interfere much with the result of myringoplasty. [8] Tympanoplasty surgery results of both wet eared and dry eared groups were quite significant and satisfying in terms of both hearing improvement and graft incorporation. There was also no statistically significant difference between the two groups.

Conclusion

We might conclude that if an appropriate surgical technique is taken, and an efficient postoperative education is provided, then satisfying results can be achieved from operations on wet ears (just like dry ears).[9] However, in order to be sure we need to carry out more studies with larger samples and in multiple centers where there are more variables to consider.

References

1. Verhoeff M, van der Veen EL, Rovers MM, Sanders EA, Schilder AG. Chronic suppurative otitis media: a review.Int J Pediatr Otorhinolaryngol 2006;70:1-12.
2. Chadha SK, Gulati K, Garg S, Agarwal AK. Comparative prevalence of otitis media in children living in urban slums, non-slum urban and rural areas of Delhi. Int J Pediatr Otorhinolaryngol 2014;78:2271-4.
3. Murugendrappa MA, Siddappa PN, Shambulingegowda A, Basavaraj GP. Comparative Study of Two Different Myringoplasty Techniques in Mucosal Type of Chronic Otitis Media.J Clin Diagn Res 2016;10:MC01-3.
4. Larem A, et al. Tympanoplasty in adhesive otitis media: A descriptive study. Laryngoscope. 2016 May 11. doi: 10.1002/lary.25987. [Epub ahead of print]
5. Sharma DK, Singh S, Sohal BS, Singh B. Prospective study of myringoplasty using different approaches.J Otolaryngol Head Neck Surg. 2009;61:297-300.
6. Shankar R, Virk RS, Gupta K, Gupta AK, Bal A, Bansal S. Evaluation and comparison of type I tympanoplasty efficacy and histopathological changes to the tympanic membrane in dry and wet ear: a prospective study.J Laryngol Otol 2015;129:945-9.
7. Raj A, Vidit. Review of patients undergoing wet myringoplasty. Indian journal of otology 1999;5:134-136.
8. Nagle SK, Jagade MV, Gandhi SR, Pawar PV. Comparative study of outcome of type I tympanoplasty in dry and wet ear. Indian J Otolaryngol Head Neck Surg 2009;61:138-40.
9. Chen Y, Wang X, Zhao D, Wu J, Wang J, Lu L, Qiu J. Retrospective study on the hearing improvement and postoperative perforation rates in 121 myringoplasty cases. Zhonghua Er Bi Yan Hou Tou Jing Wai Ke Za Zhi 2014;49:854-7.