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Research Article

EAR LOBULE FAT GRAFT FOR MYRINGOPLASTY: A STUDY IN 30 CASES

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ABSTRACT

It is part of improvement in quality and practicality of ENT surgical technique. Experience of using ear lobe fat, as grafting material, for myringoplasty of small perforation, in 30 patients, is reported. Perforation correction and hearing benefit were very satisfactory. Infective necrosis is a risk that may be keenly avoided, with appropriate postoperative care and antibiotics. The technique offers advantages of simplicity and autocrine growth potentials of fat tissues for healing, over conventional fascia graft.

Keywords: Ear lobe fat, Myringoplast, Tympanic perforation.

INTRODUCTION

Small tympanic membrane perforations do not cause significant hearing handicap but expose the middle ear cavity to exterior. Water, sweat, external ear secretions and atmospheric contents, then gain direct entry to middle and internal ear. Possibility of infection and damage thereof, poses risk to hearing function. Myringoplasty refers to surgical obliteration of tympanic membrane fault, without ossicular reconstruction. Small tympanic perforations have been attempted correction with autologous fat grafting[1-6]. Present report summarises the details and outcome of ear lobular fat grafting of 35 small tympanic perforations in 30 patients.

PATIENTS AND METHOD

It was prospective study, over one year period, from July 2014 to June 2015, in Krishna Hospital and Research Centre, Haldwani, Uttarakhand, northern India. Published precise criteria[3], were strictly followed for selective inclusion of study cases for fat grafting myringoplasty. The criteria include, no history of surgery of affected ear in preceeding 6 months; size of tympanic perforation under 5mm without exposed mallius handle; no necrosis or calcification around perforation, apparently healthy mucosa of tympanum; absence of acute inflammation and dry middle ear, over last 3 months, at least; no cholesteatoma, ossicular destruction or major dysfunction of eustachean tube. Patients were explained of the proposed operative option. Only, upon their informed written consent, they were included for study. Study plan was approved by the hospital board.

In all, there were 30 patients, 17 male and 13 female, ages between 7 years to 42 years, median age 16 years. All complained of hearing deficit and had unilateral or bilateral tympanic perforation. All were subjected to history taking, clinical examination and audiological testing. Essential preoperative laboratory investigations were also done. The patients were also scheduled to undergo hearing test, 4 months post-surgery. Hearing improvement measure was defined as degree of closure of the air-bone gap (ABG), at 0.5, 1, 2, 4 kHz.

SURGICAL TECHNIQUE

Size of tympanic perforation was ascertained upon final refreshing of margins, to judge, size of fat graft to be harvested in one piece. After lidocain/adrenalin infiltration in ear lobe, medial surface of the tip was given 5mm incision with no. 15 blade. Skin was retracted and fat sheet twice the size of assessed perforation was removed, in one piece and kept in normal sterile saline. The incision was closed with one or two 3-0 absorbable sutures. The fat sheet was trimmed under microscopic view to just twice the estimated size of tympanic fault and overlaid and plugged with help of a pick. No lateral bulges were left on the graft sheet, as that would hinder epithelialization and healing. Graft was kept humidified by pieces of gelfoam. Gelfoam pieces, soaked with topical antibiotic drops were used to pack external ear canal. Patients were discharged same day, with prescription of weeklong antibiotics, analgesics and nasal decongestant spray. They

were advised to keep ear dry and not blow with closed nose, till one month, at least. At the end of 3rd postoperative week, gelfoam was removed under microscopic view. Topical antibiotic drops were prescribed, for next 2 weeks. In further follow up visits, any relapse of perforation and its persistence till end of one postoperative month was mark of failure.

Outcome measures were, the state of the graft and tympanic membrane; improvement of hearing in terms of ABG closure and absence or occurrence of complications as infection, adhesion and residual perforation.

OBSERVATIONS AND RESULT

Of the 30 patients, 25 had unilateral and 5 had bilateral perforations, making total 35 perforations. The larger perforation was operated initially, if ABG gaps were not very different. Thirty two, of the 35 fat grafts, turned out success. The rest 3 succumbed to infection and necrosis. Preoperative ABG of all the patients ranged between 10dB to 20dB. The mean post surgery improvement in ABG was about 15dB in successful cases.

DISCUSSION

The fat grafting technique does not require dissection of meatal flap, causes less complications and provides excellent ABG closure[2,3]. Failure rate of 3 in 35 ears, with mean ABG 10dB were attributed to infection and loss of graft. These cases were reoperated after 3 months of keeping complete dry ear. Subsequent fat grafting in all of them was successful. Failure is thus attributed to postoperative care. The grafting was carried out under general anaesthesia.

Advantages of fat graft

Fat graft does not necessitate support from middle ear side, as in case of underlay graft. Fat is autocrine tissue, containing angiogenic and survival factors that stimulate restoration and revascularization, that are vital to graft survival[3,7].

CONCLUSION

Fat graft tympanoplasty is simple, fast and highly successful option preferable for small perforations.

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