

Endoscopic Transcanal Bilateral Same Sitting Myringoplasty: How I do it?

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Abstract

Myringoplasty is one of the commonly done procedures for chronically perforated tympanic membrane. Routinely the otomicroscope is used for the purpose, however, the trend has been shifting towards the use of rigid endoscopic myringoplasty worldwide due to its several advantages. Traditionally unilateral myringoplasty was performed followed by the second after three to six months in cases of bilateral perforated tympanic membrane and that would lead to considerable increase in operation cost, time and discomfort to the patient. Thus, the trend of same sitting bilateral myringoplasty has been rising globally either microscopically or endoscopically as per the surgeon's skill and comfort.

Keywords: Myringoplasty; Otomicroscope; Endoscope

Background

Myringoplasty is a most commonly done procedure globally by the otolaryngologists. Conventionally, an operating microscope is being used for the ear surgeries. However, endoscopes utilization in ear surgeries have revolutionized the speciality of otolaryngology. Traditionally each eardrum perforation was repaired with sequential grafting in two different settings, which leads to considerable increase in operation cost, time and discomfort to the patient [1,3,4]. That's why, the trend of same sitting bilateral myringoplasty has been rising worldwide either microscopically or endoscopically as per the surgeon's skill and comfort. Though the otosurgeons were precluded of doing it as per the literature stating a theoretical risk of postoperative sensorineural hearing loss (SNHL) seen in 1.2 - 4.5% of cases, they are now allured by its several advantages and also finding out that the complications (the risk of SNHL) is encountered primarily in patients with cholesteatoma, congenital malformation, or granulation tissue or in cases where ossiculoplasty has been performed [1,3,5-7]. Main advantages of single sitting include single hospital stay, less expenses and less off from school of children and also reduces the waiting

list for surgery, less morbidity, less postoperative complications, no general anaesthesia related complications. Also, the cartilage has certain advantages over other graft materials like easy availability at the site of operation, minimum shrinkage and lateralization, maintains its rigid quality and resists resorption and retraction, even in the cases of severe eustachian tube dysfunction, less extrusion, better cosmesis [8,9].

Ours is the first center to have started using tragal cartilage harvested from one ear to do bilateral myringoplasty endoscopically in one sitting using local/general anesthesia in entire western part of our country.

Case Selection and Discussion

Patients having chronic otitis media (COM) with bilateral dry central perforations. Patients aged from eight to fifty years old. Patients are counselled about the nature of operation and consent is taken. Routine blood tests and pure tone audiogram is obtained. Patients don't require shaving and gets admitted in the morning of the surgery and discharged in the next morning.

How i do it

The patient is shifted to operation theatre (OT) with the gown. The procedure is done under local as well as general anesthesia via transcanal route. Injection Ceftriaxone 1 gm intravenous twice a day is started. For local anesthesia, patient is premedicated with injection Pethidine 50 mg (1 ml) plus 25 mg of injection Promethazine intramuscularly around 30 minutes prior to surgery. On OT table, Patients are positioned in a supine position with their head up and turned to one side. The side with a larger perforation is operated first so as to exclude concomitant pathology like granulation tissue, cholesteatoma or ossicular chain defect. Patient receives local infiltration of injection 2% xylocaine with 1:200000 adrenaline along the incision line of graft harvesting site and four quadrants of external auditory canal (EAC) and also 2 - 3 cotton balls impregnated with 4% xylocaine are kept in EAC. After cleaning and draping, a thorough examination is done endoscopically (zero degree 4 mm, 17 cm rigid endoscope). A generous tragal cartilage graft with perichondrium on both sides approximately 1.5 x 1.5 cm size is then harvested from the donor site. Around 2 mm of cartilage is left in the dome of tragus so as to maintain the contour. The incision is closed with Prolene 3-0 cutting body.

The graft is cut into two halves by using surgical blade number 15. The margins of the perforation are freshened with the straight needle. Endoscope is held by the left hand and the microinstruments by the right hand. Undersurface of the perforation is then undermined with the round knife. Tympanomeatal flaps are elevated as per the perforation size. For instance, 360 degree pedicled flap is elevated in case of total perforation. Otherwise, 2 vertical incisions at 6 and 12 o'clock are made and third incision connecting the both around 7 mm away from the annulus. Cotton balls soaked with adrenaline are used for hemostasis in between. A thorough middle ear examination is done by noting the status of ossicles, ossicular mobility, chorda tympani, middle ear mucosa, round and oval windows and the eustachian tube orifice. The graft is prepared now under the top light. A 2 x 2 mm complete cartilage strip is removed vertically from the centre of the graft to accommodate the malleus handle. Middle ear is packed with dry gel foam then the graft is placed either underlay or in under overlay fashion. TM flap is repositioned back and tucking of graft is ensured in all the directions. It is then filled with ciprofloxacin soaked gel foam followed by Soframycin impregnated ribbon gauze pack and two pieces of cotton pad to cover it (Figure 1-4).

We shift to next ear and change the gloves and entire instruments are cleaned with rectified spirit. The same procedure we

Figure 1: Endoscopic view of right TM perforation.

Figure 2: After placing cartilage graft.

Figure 3: Endoscopic view of Left TM perforation.

Figure 4: After placing cartilage graft.

carry in the contralateral ear. Bilateral mastoid bandage are applied. Patients are discharged on the first postoperative day (POD) after assessing the wound soakage, facial nerve status and the hearing discomfort. Antibiotics are given for 10 days along with the analgesics and antihistamines. Dressing is opened on the 4th POD and after the assessment no bandages are applied. Sutures and ear pack are removed on the 7th POD. Ciprofloxacin with steroid ear drops (3 drops 8 hourly) are given for 3 weeks. First patient assessment after pack removal is done at 3 weeks then 4 weekly till 3 months post op. Complications if any is noted at every visit and the hearing assessment is done at 3 months post op.

Conclusion

The results are promising in terms of graft uptake, hearing assessment and postop complications till date. Having found more benefits to the patients like cost reduction, time saving, low rate of postoperative complications, we would like to recommend that bilateral endoscopic transcanal cartilage tympanoplasty in a single sitting is a safe minimally invasive procedure.

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