



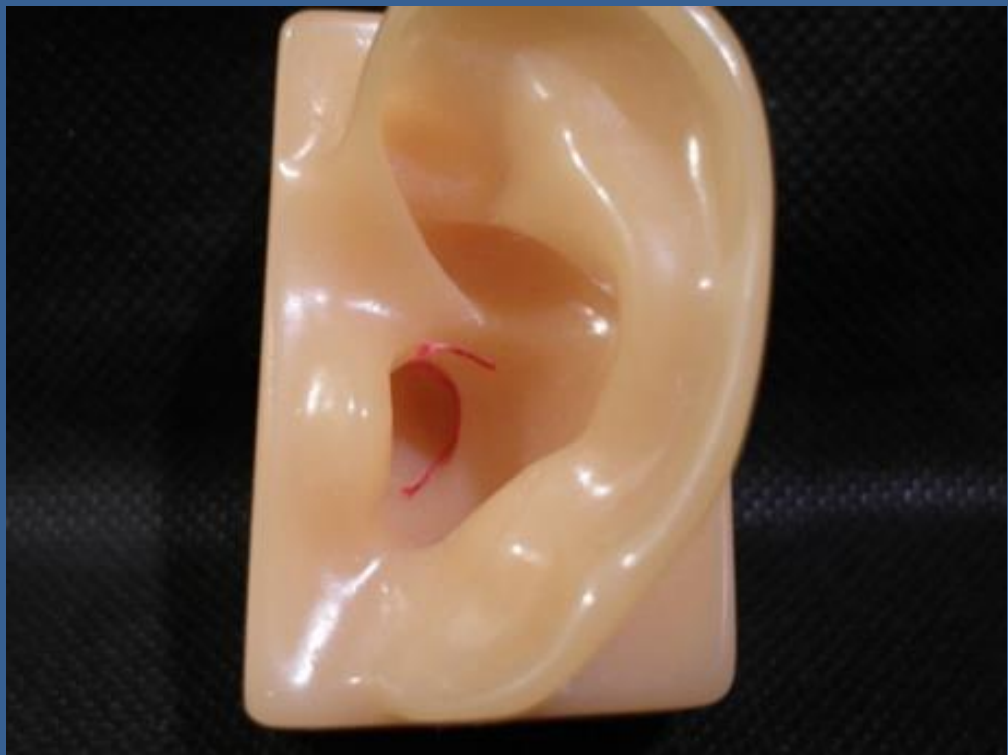
Conchal Approach Tympanoplasty

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ABSTRACT

OUTCOME OBJECTIVES

Review standard tympanoplasty approaches. Describe a novel approach that minimizes soft tissue dissection and provides good access.



METHODS

The charts of consecutive adult patients who underwent a conchal approach tympanoplasty between January 2010 and December 2012 at an urban teaching hospital under the care of a single surgeon were reviewed. The patients' age in decades at the time of surgery, sex and proportion of intact tympanic membranes noted at follow-up were recorded. Postoperative analgesic use and patient recorded satisfaction with the cosmetic appearance of the ear using a Likert type scale from 1 least - 5 most satisfied was collected for consecutive patients undergoing the procedure in 2013. The mean patient satisfaction score was calculated.

RESULTS

In the three year period 2010-12 the charts of 75 adults ages ranged 3rd - 8th decade, 45 females and 30 males were reviewed. Complete tympanic membrane closure was achieved in 75 (100%). 21 adults treated in 2013 recorded a mean satisfaction score with the appearance of the postoperative ear scar of 4.8 out of 5. Postoperative analgesic consumption consisted of Acetaminophen or Diclofenac Sodium on the day of surgery. No patients used analgesics beyond post-operative day 3.

CONCLUSION

The conchal approach tympanoplasty is associated with a high graft take rate, low morbidity and high patient satisfaction with cosmesis of the operative site.

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INTRODUCTION

There are three well recognized approaches for tympanoplasty. The permeal approach is not suitable for the narrow ear canal. The postauricular approach requires more extensive dissection, with increased morbidity. The endaural approach is a more direct approach but restricts the view of the anterior margin of the eardrum .

This novel approach is a modification of the endaural approach. An incision is made into the conchal cavum, releasing tension on the same. The incision is extended posteriorly as much as necessary to allow excellent visualization of the anterior margin of the eardrum.

Perichondrium from the conchal cavum cartilage can be harvested through the incision, thus increasing its utility.

METHOD

The approach creates a laterally based, triangular flap in the conchal cavum.



The vertical limb is the Heermann A/ Lempert No. 1 endaural incision. It has a horizontal limb that runs posteriorly from a point inferior to the helical crus.

A laterally based skin flap is raised in continuity consisting partly of the skin lining the posterior wall of the external auditory meatus, canal wall and the superior lateral aspect of the conchal cavum. Conchal perichondrium and cartilage can be harvested by extending the incision into the conchal cavum.

The case records of consecutive patients undergoing this approach from 2010 to 2012 were retrospectively reviewed . Data was collected for size and position of the perforation, size of the canal, primary or revision surgery. Patient reported outcomes with respect to donor site cosmesis and postoperative pain were collected from a consecutive series of patients treated between January and August 2013 using a Likert scale questionnaire.

RESULTS

From 2010 to 2012, 75 patients had the operation, 44 women and 31 men, ages ranging from 23 to 75 years. Their age distribution by decade was 3 in 20-29, 10 in 30-39, 19 in 40-49, 28 in 50-59, 13 in 60-69, and 2 in 70-79. 29 perforations were subtotal or total, 46 were smaller and 13 anterior . The canal size was small or restrictive in 13 cases. 68 cases were primary, and 7 were revisions of failures done elsewhere. All the perforations healed completely, regardless of the position or size of the perforation, size of ear canal, and primary or revision surgery.

In 2013, 21 patients undergoing the procedure completed the evaluation questionnaire. Acetaminophen 1 gram, 6 hourly was prescribed for postoperative pain. One patient used 1 tablet of Ibuprofen for one day. 14 patients used 1 gram of Acetaminophen once a day for one or two days. Only one patient used analgesia for three days. It is noteworthy that 5 patients did not use any analgesic.

There was no numbness of the conchal bowl. The conchal bowl remained well healed and retained normal shape in all cases. There was no case of chondritis or perichondritis. In the Likert scale questionnaire, 5 patients agreed and 16 strongly agreed that the cosmesis of the conchal bowl and scar was excellent.



CONCLUSION

The excellent graft take rate achieved and low morbidity lead us to recommend this technique for wider use.

DISCUSSION

When the post-auricular and endaural approaches were designed many years ago, cutting into conchal cartilage was forbidden presumably is to avoid chondritis / perichondritis. Postoperative auricular perichondritis after an endaural approach was described (Ref. 1). The authors suggest this was due to the tension exerted on the tragus or the concha cavum cartilage, in order to gain adequate access to the anterior margin of canal and drum. In the conchal cavum approach, the incision into the conchal cavum releases the tension on the cartilages. Modern surgical practices has shown that it is safe to utilize the conchal cartilage as grafting material. (ref. 1-2). The incidence of chondritis and perichondritis associated with the surgical manipulation of auricular cartilage was reported by Kaplan AL (ref. 4) to be 5.6% of 295 patients undergoing repair of nasal defects. Only inflammatory perichondritis was observed. There was no case of suppurative chondritis.

In our series, no case of chondritis/perichondritis was observed. There was no undue pressure exerted on the tragus and conchal cartilage.

The new approach minimizes dissection. The incision and dissection are limited to the conchal cavum.

It provides excellent exposure to the drum. The outer one third of the ear canal, that restricts the view of the drum, is mobilised making the bony canal readily accessible. The distance to the eardrum is much reduced.

A large graft of perichondrium is conveniently harvested from the conchal cavum, large enough to be anchored on the bony canal and extended on the remnant of the drum to repair total or subtotal perforations. Graft take rates appear to be better with cartilage/perichondrium than fascia (ref. 5-6). This approach through minimized dissection reduces post-operative pain, and achieves excellent graft . Cosmesis is excellent.

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