ABSTRACT

Objectives: To evaluate the anatomical and audiological results of the endoscopic tympanoplasty with tragal perichondrum graft.

Methods: A case series in patients with chronic otitis media, treated with transcanal endoscopic tympanoplasty by the technique under-over, followed by six months post treatment clinical and audiometric evaluations, in the Department of Otolaryngology, National Hospital Arzobispo Loayza, Lima - Peru between 2007 and 2011.

Results: Of a total of 64 patients, 31 met the inclusion criteria. 20 were males (64.5%), the mean age was 43.3 years. The left ear was the most affected with 61.3%. Only 12.9% had retraction pocket. Perichondrium graft was used in 87.1%, and tragal cartilage with perichondrium with the others. There was complete closure of the perforation in 93.5% and only 2 complications, infection and perforation. The difference of the mean of the audiometries by air previous (39.1 ± 5.8) and posterior (30.2 ± 7.2) of surgery was significant (p = 0.0001). The difference of the air-bone gap previous (13.1 ± 4.9) and posterior (4.3 ± 2.3) of the surgery was significant (p = 0.0001).

Conclusions: The endoscopic tympanoplasty improves the audiometric levels and the gap in post-surgery patients, allows the complete closure of the perforations and less complications in the present series. This work bears no conflict of interest.

INTRODUCTION

The frequency of perforation of the tympanic membrane is estimated between 1-3% of the general population, with a significant hearing loss, being the most widely accepted treatment with tympanoplasty for closure of the perforation and hearing improvement.

In tympanoplasty type I or myringoplasty, classically has been done with the use of the surgical microscope and one of the three types of approaches: mainly retroauricular incision in the anterior quadrants drilling, endaural in central perforations or posterior quadrants, and the transcanal approach in smaller and middle holes.

In the endoscopic tympanoplasty, the external auditory canal is used as path in all types of perforations, without external incisions except for making grafts. It also allows a good exploration of the eardrum due to the different angles of the telescopes, which optimize postoperative outcomes.

The aim of this study is to evaluate the results of endoscopic tympanoplasty using the technique under - over, as well as the perichondrium graft.

METHODS AND MATERIALS

We evaluated patients with chronic otitis media, operated by transcanal under - over endoscopic tympanoplasty technique, with a minimum follow up of six months after surgery, all of them at the Department of Otolaryngology, National Hospital Arzobispo Loayza, Lima - Peru, between the period of January 2007 and December 2011.

We conducted a pure-tone audiometry prior to surgery and other postsurgical, at least six months after the same. To calculate the functional outcomes, we examined differences between pre and postoperative outcomes, as well as the gap between the airways and pre-and postoperative bone. The sequence analysis included descriptive analysis of the variables determining proportions and frequencies, and contingency tables (2x2). Inferential analysis was performed to determine the complications of both surgical techniques through Chi square test.

RESULTS

From a total of 64 patients, 31 met the inclusion criteria. 20 were male (64.5%), mean age was 43.3 years, with a range of 8-67 years. The left ear was the most affected with 61.3%. Only 12.9% had bag retraction. Regarding the type of graft, perichondrium was used in 87.1%, and cartilage with perichondrium with others. There was complete closure of the draining 93.5% and only 2 complications (one case of infection and one residual drilling). The mean of the difference of audiometry by air, was pre (39.1 ± 5.8) and post surgery (30.2 ± 7.2) was significant (p = 0.0001). The difference in the gap between air and bone pathways pre (13.1 ± 4.9) and after (4.3 ± 2.3) surgery was significant (p = 0.0001).

The tympanoplasty type I is a surgical procedure often used in our specialty, of which there are many technical variations with corresponding results.

In our study we used the endoscopic surgery performed through the external auditory canal, and is applicable to any type of perforated eardrum. The under-over technique has advantages over other techniques, can be used in tympanic perforations of all sizes and from all quadrants, provides an excellent exposure of the anterior middle ear without blunting, and has a high success rate without reducing the middle ear space.

We got complete closure of the perforation (anatomical success) in 93.5%. Two cases were complicated, one with a infectious process and the other with remaining drilling, which was treated in a surgical review. We obtained 100% of auditory success, with a gain between the airway, and narrowing of the gap between pre and postoperative, statistically significant. The results have been very satisfactory compared to other techniques reported.

DISCUSSION

The endoscopic tympanoplasty improves the audiological gap between pre and post tympanoplasty patients, and allows the complete closure of the perforation, with the minor complications of the studied series. This study bears no conflict of interest.

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