

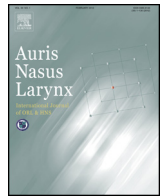


ELSEVIER

Contents lists available at ScienceDirect

Auris Nasus Larynx

journal homepage: www.elsevier.com/locate/anl



Posterior canal wall reposition for management of cholesteatoma: Technique and results[☆]

Mohammad Kamal Mobashir, Waleed M. Basha*, Abd ElRaof Said Mohamed, Mohammed Elsayed Elmaghawry

Department of Oto-Rhino-Laryngology and Head and Neck Surgery, Faculty of Medicine, Zagazig University, Zagazig, Egypt

ARTICLE INFO

Article history:

Received 1 December 2016

Accepted 29 May 2017

Available online xxx

Keywords:

Cholesteatoma

Canal wall down mastoidectomy

Canal wall up mastoidectomy

Posterior canal wall reposition

ABSTRACT

Objective: The main goal of surgery in acquired middle ear cholesteatomas is the complete eradication of the disease with an ear free of discharge. This can be performed either by open or closed techniques with their benefits and drawbacks. We present the technique of reposition of the posterior canal wall for the management of cholesteatoma cases and its results and outcome.

Patients and methods: This study included 31 patients with primary acquired middle ear cholesteatoma. The surgical technique included complete cortical mastoidectomy, wide posterior tympanotomy, dividing the bony posterior meatal wall with a micro-sagittal saw and its removal, dissection and eradication of cholesteatoma, and repositioning the canal wall segment in its anatomical site.

Results: No significant intraoperative complication occurred. An injury to the dura occurred in one patient. Damage of the bony posterior canal wall occurred in two patients during saw cutting. Residual cholesteatoma was found in two patients. No dislocation or necrosis of the reconstructed posterior canal wall was noted and the new reconstructed external ear canal appeared to be of near normal size, shape, and contour.

Conclusion: This technique provides optimal surgical exposure and access to areas that are difficult to reach by CWU approach, allows removal of the cholesteatoma without intraoperative complications, decreases the rate of residual cholesteatoma, restores near-normal anatomy of the external auditory canal, and avoids the sequelae of the open mastoid cavity. Therefore, it would be a feasible alternative to the standard CWU and CWD procedures.

© 2017 Elsevier B.V.. All rights reserved.

[☆] This manuscript is original, has not been previously published, and is not under consideration for publication elsewhere. This manuscript has not been presented in any meeting.

* Corresponding author at: 7th Al-Amira Fayza Street, Al-Nezam Department, the 3rd floor, Apartment No. 4, Zagazig 44519, Al-Sharkia, Egypt.

E-mail addresses: mobashir555@hotmail.com (M.K. Mobashir), waleed-basha67@yahoo.com (W.M. Basha), abdelraof5@yahoo.com (A.E.S. Mohamed), dr_mohamed.maghawry@yahoo.com (M.E. Elmaghawry).

<http://dx.doi.org/10.1016/j.anl.2017.05.020>

0385-8146/© 2017 Elsevier B.V.. All rights reserved.

1. Introduction

Cholesteatomas are treated surgically. The two main primary surgical techniques to treat cholesteatoma are the canal wall down (CWD; open-cavity) and the canal wall up (CWU; closed-cavity) approaches. The primary aims of the surgical treatment are to eradicate the cholesteatoma and prevent its recurrence, while the secondary aims are to obtain a dry ear and/or to improve hearing loss. However, the surgical management of cholesteatoma remains a controversial issue as it remains a matter of debate, whether CWD or CWU is the most effective

approach for achieving low rates of residual disease and dry ears [1,2].

The CWD approach with the resection of the posterior–superior canal wall and fattening of the tympanic cavity represents the classic procedure for the removal of cholesteatoma. It provides a sufficient approach to the facial recess and tympanic sinus with an adequate surgical view. Therefore, with this single-stage open technique, the incidence of residual and recurrent cholesteatomas is low [1,3].

However, this approach creates an open cavity and alters the normal anatomy and physiology of the middle ear. The main disadvantages of the open cavity are the necessity for periodic cleansing, granulations, dizziness, and the susceptibility for infections. Thus, it causes significant restrictions in lifestyle, especially for children (e.g., swimming). Furthermore, the widening of the auditory canal and the reduced intra-tympanic air volume result in deterioration of the acoustic conditions with impaired hearing results and difficult or impossible hearing aid application [2–5].

The CWU approach does not involve the removal of the posterior canal wall. Thus, it maintains the normal anatomy of the external auditory canal and does not create an open cavity with normal skin migration, which enables rapid postoperative wound healing and results in a dry ear. However, the surgical exposure and access to all tympanic and retro-tympanic spaces are greatly limited and impeded. Therefore, the rate of residual or recurrent cholesteatoma with this technique is high [1,6,7].

The advantages of both techniques, optimal exposure of all middle ear spaces and preservation of the normal anatomy, are offered by procedures that involve the temporary removal and reinsertion or reconstruction of the canal wall. The posterior canal wall reconstruction (CWR) procedure was described to reconstruct the posterior canal wall after its removal using autologous material such as cartilage, bone, or bone pâté. It has been described either as part of a first stage or as a second procedure in cholesteatoma surgery. This technique aims to avoid the negative sequelae of a radical mastoid cavity in CWD approach and at the same time combines the advantages of both CWU and CWD techniques [1,3,8,9]. In this study, we present the posterior canal wall reposition technique for the management of cholesteatoma cases and its results and outcome.

2. Patients and methods

This study included patients with primary acquired middle ear cholesteatoma. The patients were managed through the department of Oto-Rhino-Laryngology and Head and Neck Surgery of Zagazig University Hospitals during the period from May 2012 to May 2015.

The patients underwent the following diagnostic protocol: (1) history with attention for the duration and severity of symptoms (otorrhea, hearing loss, tinnitus, dizziness, and facial nerve palsy) and any previous surgical procedure; (2) otomicroscopic and/or oto-endoscopic examination; (3) complete audiological assessment (the frequency range was from 250 Hz to 8000 Hz and the pure tone average (PTA) was estimated as the average of hearing threshold levels at frequencies 500, 1000, 2000, and 4000 Hz; (4) high resolution computed tomography

scanning of the temporal bone without contrast. Patients with an extensive destruction of the posterior canal wall, only functioning ear, previous canal wall down procedure, and labyrinthine fistula were excluded from the study.

The Institutional Reviewer Board (IRB) of the Faculty of Medicine, Zagazig University, Egypt, approved the study. A fully informed written consent was obtained from all patients. They were managed under the general anesthesia and preoperatively a third-generation cephalosporin was routinely administered intravenously.

The surgical technique

A classic post auricular incision was performed. A large temporalis fascia graft and a tragal cartilage graft were harvested. The mastoid periosteum was incised and an anteriorly based musculo-periosteal Palva flap was created. The mastoid cortex was widely exposed. The external ear canal skin was elevated off the posterior canal wall without making any incision in the skin, the annulus was elevated out of the sulcus, and the tympanic cavity was explored to assess the limits of the cholesteatoma and the status of the ossicular chain.

The bone dust was collected from the mastoid cortex and squamous temporal bone (Fig. 1A and B). Collection of the bone dust was stopped before exposure of the mastoid air cells, it was washed by a physiologic saline, and was filtered through a piece of gauze. The bone pâté was obtained by mixing the bone dust and a few drops of fibrin glue and was set aside.

A complete cortical mastoidectomy including exenteration of the sinu-dural angle and mastoid tip cells and a wide posterior tympanotomy were performed. The posterior canal wall was thinned by drilling. A micro-sagittal saw (Nouvag MOS 5000) was used to make superior and inferior cuts in the bony posterior canal wall (Fig. 2). The superior cut was parallel to the temporal lobe, while the inferior cut was extended medially to the inferior facial recess (Fig. 3A and B). The bony canal wall segment was removed, was carefully examined to ensure removal of all cholesteatoma and squamous epithelium, and was temporarily placed in a diluted antiseptic solution for further reconstruction (Fig. 4).

The incus and head of the malleus were removed and the chorda tympani nerve was scarified. The cholesteatoma was completely dissected and removed from the tympanic cavity, retro-tympanum, mastoid, and anterior attic. Ossicular reconstruction was performed. The posterior canal wall segment was repositioned and the bone pâté was placed in the attic and mastoid to reconstruct the lateral attic wall and hold the canal wall segment in place together with the gel foam and fill the rest of the mastoid and attic (Fig. 5). The tragal cartilage graft and the temporalis fascia graft were used to reconstruct the tympanic membrane and the fascia graft was extended up the posterior canal wall and over the canal wall cuts. The external auditory canal skin was repositioned, several gel foam pieces were placed over the tympanic membrane and the canal skin, the musculo-periosteal Palva flap was repositioned, the post auricular incision was closed in two layers by interrupted sutures, the external auditory canal was packed with a gauze

Download English Version:

<https://daneshyari.com/en/article/8754803>

Download Persian Version:

<https://daneshyari.com/article/8754803>

[Daneshyari.com](https://daneshyari.com)