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(CASE REPORT)

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Tympanomastoidectomy with modified Bondy procedure on young patient with cholesteatoma and dangerous type of chronic suppurative otitis media (CSOM)

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Abstract

Tympanomastoidectomy is tympanoplasty with mastoidectomy. Modified with Bondy procedure of mastoidectomy is a type of canal wall down mastoidectomy which is rarely used about 5.8% patients of all mastoidectomy and pediatric cholesteatoma patients underwent modified with Bondy procedure. The purpose of the modified with Bondy procedure is for young patients, to maintain or improve hearing during surgery or next operations and to facilitate better wound care after surgery. A cholesteatoma is a lesion of the ear, formed of a mass of stratified keratinizing squamous epithelium. Cholesteatoma in the pediatric generally to be more aggressive than cholesteatoma occurring in the adult population. Cholesteatoma is usually followed by Chronic suppurative otitis media (CSOM) and results in hearing loss.

It has been reported that a 15-year-old female patient with right dangerous type of CSOM and cholesteatoma underwent tympanomastoidectomy with Modified Bondy. Right dangerous type of CSOM and cholesteatoma can be diagnosed based on anamnesis, physical examination, and supporting examinations consisting of a CT scan and histopathology. The result of Modified tympanomastoidectomy with Bondy procedure on this patient was good.

Keyword: CSOM; Tympanomastoidectomy; Bondy; Cholesteatoma

1. Introduction

Chronic suppurative otitis media (CSOM) is defined as persistent infection of the middle ear with a perforated tympanic membrane that oozes purulent discharge for more than 6 weeks, and is often associated with cholesteatoma [1]. Histologically, cholesteatoma is benign, but can be locally destructive, which can cause bone destruction and cause complications such as meningitis, brain abscess, labyrinthitis, and facial nerve paralysis [2]. The incidence of cholesteatoma is 3-15 per 100,000 person-years. According to the World Health Organization (WHO) CSOM is the main cause of hearing loss in children [3]. Surgical management of cholesteatoma generally aims to eradicate cholesteatoma, prevent recurrence, repair tympanic membrane perforations, reconstruct sound delivery mechanisms, avoid open cavities [4]. In young patients with a dangerous type of CSOM, the modified radical mastoidectomy (canal wall down modified with Bondy procedure) surgical technique is used, in this technique the patient can later undergo reconstructive surgery to improve their hearing. In this case 15-year-old female with right dangerous type of CSOM with cholesteatoma underwent tympanomastoidectomy canal wall down surgery modified with Bondy procedure [5].

2. Case Report

A 15-year-old female patient presented with chief complaints of discharge from the right ear from 1 month ago. This discharge is said by the patient to be dark yellow, viscous and smelly. The patient also complained of decreased hearing from 3 months ago in the right and left ears. The patient is a student living in East Java. The patient's previous history

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one year ago had surgery on the left ear for tympanomastoidectomy, there were no complaints from the left ear. The patient denied discharge from the left ear. The patient since elementary school had experienced the same symptoms of discharge from the right and left ear but after going to the doctor, he recovered, but a few months later it recurred.

On physical examination, obtained a wide open external acoustic canal (EAC), there is little secretion, the tympanic membrane has the impression of total perforation filled with granulation tissue in the right ear, in the left ear the external acoustic canal is wide open, there is no secretion, the tympanic membrane is post tympanomastoidectomy (intact). Examination of the nose revealed no abnormalities. Throat examination revealed no abnormalities. Endoscopic examination of the ear is shown in Figure 1

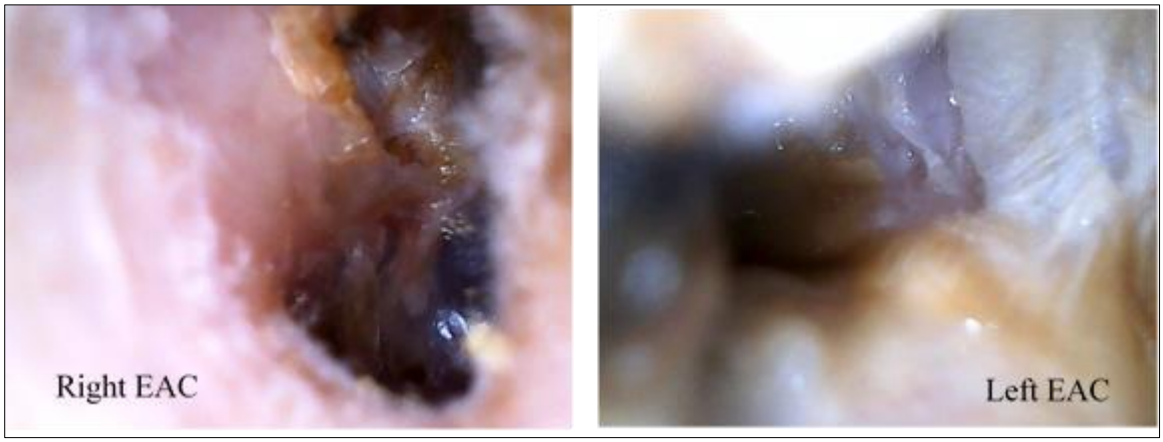

Figure 1 Right and Left EAC

On CT scan (Figure 2) examination of the head with a focus on the middle ear with the results of dense soft tissue coverings that appear to fill the tympanic cavity, Prussak's space, and the right mastoid antrum, sticking to the tympanic membrane and right ossicle bone, destroying the tympanic tegmen, and visible soft tissue coverings fills part of the external acoustic canal, tympanic cavity, and left Prussak's space, attaches to the left tympanic tegmen, and destroys part of the left ossicle bone, suspects a mass or difference in the diagnosis of cholesteatoma.

Figure 2 CT-Scan

On the audiometric examination the result was the patient with sensorineural hearing loss (SNHL) mild degree of 35 dB both side and other examinations within normal limits. The patient was then consulted to the Anesthesia Department for evaluation prior to surgery. Based on the anamnesis, physical examination, and supporting examinations, the patient's diagnosis was found to be the right-dangerous type of CSOM. The patient will be planned to have right tympanomastoidectomy with the Bondy approach under general anesthesia on November 3rd, 2021.

The operation was performed using the modified radical mastoidectomy technique (canal wall down modified with Bondy procedure) by infiltrating with lidocaine and adrenaline solution in the retroauricular (area behind the ear) area, then 5-10 mm retroauricular incision was made from the sulcus starting from the skin, subcutis, to the periosteum. The

temporalis muscle fascia graft was taken. Then drilled the mastoid cortex with Mc Ewen's triangular landmarks, identified the posterior wall of the ear canal, linea temporalis, and the spines of Henle. Identify the mastoid tegmen, sigmoid sinus, and lateral semicircular canals. At mastoid granulation tissue was found. The findings at surgery were granulated cholesteatoma in the attic and mastoid areas. Identification of the ossicles was still good, as well as cholesteatoma granulation tissue in the attic, the scutum was removed, the facial ridge was lowered to as low as the tympanic annulus. Granulation tissue and cholesteatoma were removed. The surgical cavity was cleaned, meatoplasty was performed. The cholesteatoma tissue was cleaned as cleanly as possible and temporalis fascia grafts were placed to cover the operative cavity. A tampon that has been coated with an antibiotic ointment is placed to close the operating cavity. The surgical wound was closed with layer-by-layer sutures.

On the first day postoperative, the patient had no complaints of active bleeding. The non-sterile elastic gauze bandage (Elastomull®) was removed. On the second day postoperative, no active bleeding was found, remove drain was performed. The patient was take home medicine with cefixime 2 x 200 mg and paracetamol 3 x 500 mg intraorally. On the fifth day postoperative, the patient was a control to the ENT-KL polyclinic at Prof I.G.N.G Ngoerah Hospital. The patient felt no complaints and on examination the surgical scar was covered with a little crust. There was no active bleeding. Anatomical pathology results showed cholesteatoma tissue. After six months postoperative the patient felt no complaints and underwent test audiometry with result sensorineural hearing loss (SNHL) mild degree of 35 dB both side. Patients are advised to use hearing aids and controls if there are hearing complaints in the future.

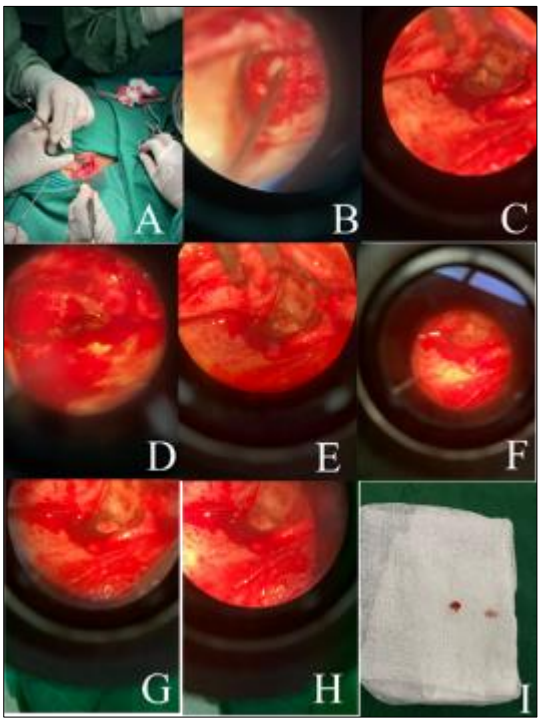

Figure 3 Modified radical mastoidectomy technique (canal wall down modified with Bondy procedure)

3. Discussion

A 15 year old female patient diagnosed with the right-dangerous type of chronic suppurative otitis media with cholesteatoma. This diagnosis comes from the anamnesis that we find from patients who are in accordance with the theory, that is discharge from the right ear since childhood and started to appear again one month ago [3,4,5]. The discharge was viscous and smelly. On physical examination get total perforation filled with granulation tissue on right ear and diagnosis was confirmed by the CT scan and anatomical pathology [6]. CT scan showed of dense soft tissue coverings that appear to fill the tympanic cavity, Prussak's space, and the right mastoid antrum, sticking to the tympanic membrane and right ossicle bone, destroying the tympanic tegmen, and visible soft tissue coverings fills part of the external acoustic canal, tympanic cavity, and left Prussak's space, attaches to the left tympanic tegmen, and destroys part of the left ossicle bone, suspects a mass or difference in the diagnosis of cholesteatoma. After the patient underwent surgery the result of anatomical pathology showed cholesteatoma tissue [5].

The patient underwent a modified radical mastoidectomy technique (canal wall down modified with Bondy procedure) prior to surgery the patient underwent an audiometric examination with the results sensorineural hearing loss (SNHL) mild degree of 35 dB both sides. Six months later the patient underwent repeat audiometry with the same results. The purpose of the operation modified radical mastoidectomy technique (canal wall down modified with Bondy procedure) for young patients, to maintain or improve hearing during surgery or next operations and to facilitate better wound care after surgery [6].

4. Conclusion

A 15 year old female patient diagnosed with the right-dangerous type of chronic suppurative otitis media with cholesteatoma. This diagnosis comes from the anamnesis, physical examination and supporting examination. The patient underwent a modified radical mastoidectomy technique (canal wall down modified with Bondy procedure) because young patients, to maintain or improve hearing during surgery or next operations and to facilitate better wound care after surgery. The result of audiometry before and after surgery is same.

Compliance with ethical standards

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Disclosure of conflict of interest

There are no conflicts of interest.

Statement of informed consent

Informed consent was obtained from participant included in the study.

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