International Journal of Science and Research (IJSR)
ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2018): 7.426

Mastoid Cavity Problems

Dr Roopa Malali[1], Dr Rekha .M.[2], Dr Viswanatha .B[3]

Abstract: ***Background: A discharging ear following canal wall down mastoidectomy procedure is troublesome for the patients and surgeon. These mastoid cavity problems are due to various reasons. Addressing the etiological factors of discharging cavity and need for medical or surgical line of treatment is necessary to provide trouble free dry ear for the patient. Methods: This study included 100 patients who underwent canal wall down mastoidectomy procedure. The patients presenting with cavity problems are categorised based on etiological factor. The percentage of patients presenting with different cavity problem are tabulated. Results: 75% of patients were presented with persistent ear discharge. Granulation issue, uneven cavity, inadequate meatoplasty, recurrence and residual disease were the microscopic findings contributing to the persistence of ear discharge in those patients. Conclusion: To address these cavity problems, have to adopt proper surgical techniques during the procedure to avoid discharging cavity. Proper mastoidectomy, disease clearance and meatoplasty will accelerate the epithelialization and reduces the secretion of tissue fluid and bacterial infection.***

Keyword: Discharging ear, mastoid cavity, canal wall down mastoidectomy

1. Introduction

Chronic squamosal otitis media is commonly encountered disease in the clinical practice. The ideal treatment for squamosal disease is the surgical management. Canal wall down procedure or open cavity procedure done in cases of chronic squamosal otitis media. It ensures the eradication of disease and aims to provide the dry safe ear. It has been the gold standard technique over the past years .[1]

A chronically draining cavity is a frustrating problem for the patient and a difficult condition to manage for the otologist. [2] Even though canal wall down procedures eradicates the disease from the mastoid and middle ear. The creation of the large cavity sets up new problems.[3]chronic discharging ears following CWD are due to various reasons. The main reasons of discharging cavity are high facial ridge, inadequate meatoplasty, uneven cavity, granulation tissue, residual disease.[4]

Other cavity problems associated are dizziness due to exposure of semi-circular canals to direct caloric stimulation by cold air / water entering the cavity, wax impaction in the cavity which requires surgeon for regular cleaning.[3]

The discharging cavity needs to be addressed by evaluating the cause for discharge. Most of discharging cavities require merely medical treatment. Few might require revision surgery to make self cleansing, trouble free dry ear.[5]

This study was performed to study various cavity associated problems and how to tackle these cavity problems.

Aim and Objectives

- To study mastoid cavity associated problems following canal wall down procedure.
- To study the causes for discharging cavity.

2. Materials and Method

Study design: Cross sectional study

Study period: May2017 to June 2019

Sample size: 100 patients

Inclusion criteria: Patient with chronic otitis media squamosal type, who have undergone canal wall down procedure between ages of 18- 60 years.

Exclusion criteria:
Patients who have undergone intact canal wall procedures.
Patients operated for cholesteatoma recurrences.

Methodology
Data was collected from the patients who were attending opd in the department of ENT, Bangalore medical college and research institute. Patients were selected based on the inclusion criteria. Details including age, sex of the patient, symptoms of cavity problem, and operative details of each patient recorded accordingly (table 1 and 2). The patients are categorised based on the cavity problems (table3).

3. Results

Table 1: Age and gender distribution

Age groups	Male	Females
18-30	13	04
31-45	48	22
46-60	10	03

Most of the patients belonged to 31-45 years age group and male to female ratio was 3:1.

Table 2

Symptoms	Patient's presentation in post-operative period		
	3-6 months	6-12 months	>12 months
Persistent discharge	12	38	25
Deafness	20	12	8
Giddiness	32	14	6

75 % of patients presented with persistent discharge.

Table 3

EUM Findings in patients with persistent discharge	Number of patients
Granulation tissue	35%
Uneven cavity with high facial ridge	26%
Recurrence	15%
Residual disease	14%
Inadequate meatoplasty	10%

Granulation tissue and uneven cavity were the major causes of persistent discharge.

4. Discussion

Canal wall-down mastoidectomy is the most common surgical procedure for cholesteatoma. In this procedure, posterior canal wall is completely removed and the facial ridge is lowered down to the level of floor of the external auditory canal so that the mastoid cavity does not lead to an independent sump[1].

Physiologically and anatomically, the open mastoid cavity is very unsatisfactory. Skin does not grow properly on the bare bone and the moist environment predisposes to the growth of mucosa and granulation tissue. Larger bony surface exposed after canal wall down, secretes more tissue fluid that provides rich medium for bacterial proliferation and hence persistent infection. Uneven cavity, high facial ridge, inadequate meatoplasty and residual or recurrent cholesteatoma are the reasons for peeping cavity problems. Larger cavity itself is a major cause of the recurrent or persistent discharge that significantly disturb the patient[3].

Obliteration of the mastoid cavity leads to a smaller surface which gets epithelialized easily and rapidly. Also reduces development of cavity granulations. This smaller cavity became self cleansing as retain its epithelial migratory potential. Hence by obliterating the mastoid cavity we can reduce the post-operative suffering of patients with persistent discharge[4].

In our study 75% of patients presented with persistent ear discharge. Among them, 35% have granulation tissue in the mastoid cavity, 26% have uneven cavity with high facial ridge, 15% have recurrences .14% have showed residual disease and 10% have inadequate meatoplasty. In a similar study conducted by Chhapola S et al[3], 95% patients were presented with discharging ear.

Limited granulation tissue was cauterized under microscopic visualization. High facial ridge, recurrences, residual cholesteatoma and inadequate meatoplasty were corrected by revision surgery.

5. Conclusion

Canal wall down surgery remains best procedure for extensive cholesteatoma. Patients suffer from number of cavity problems significantly. Hence to address those problems, we have to adopt proper surgical techniques during the procedure. Proper mastoidectomy, disease clearance and adequate meatoplasty will accelerate the epithelialization and reduces the secretion of tissue fluid and bacterial infection.

References

[1] Shokry, S., Hafez, A., Abdulsalam, H., Al`Sayed, A., Zidan, M. Avoiding mastoid cavity Problems: Mastoid obliteration using Bioactive glass. The Egyptian Journal of Hospital Medicine, 2012; 47(1): 321-333. doi: 10.12816/ejhm.2012.16300

[2] B. Y. Praveen Kumar, K. M. Govinde Gowda, M. K. VeenaPani, Shilpa Tubajirao Hotkar, Neelesh Tiwari, Thanzeemunisa. Discharging Mastoid Cavity: A Clinical Analysis. Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 37, May 07; Page: 6390-6397, DOI: 10.14260/jemds/2015/929

[3] S. Chhapola S, Matta I. Mastoid obliteration versus open cavity: a comparative study. Indian J Otolaryngol Head Neck Surg. 2014;66(Suppl 1):207–213. doi:10.1007/s12070-011-0429-x.

[4] Kinney S. The Problem Mastoid Cavity: Medical and Surgical Management. The Laryngoscope. 1977;87(11):1853-1860.

[5] Hueb M, Toledo Piza M. Problems with the mastoid cavity. Operative Techniques in Otolaryngology-Head and Neck Surgery. 1996;7(1):62-65.