

Mastoid Surgery For The Chronic Ear: A Ten Year Review

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Abstract

Background: mastoidectomy can be a life saving procedure in cases of complications of chronic suppurative otitis media. The aim of this study was to review the indications and outcome of mastoidectomy in our environment.

Methodology: This is a retrospective chart review of all mastoid surgery between 1997 and 2006 in university college hospital, Ibadan.

Results: The study comprised of 25 surgical procedures in 23 subjects, 9 males and 14 females (m:f = 1:1.5). The peak age incidence was 21 – 35 years constituting 44%, in age range 3 to 64 years, mean of 26 years (sd = 25.00years). Otorrhoea and otalgia were the main presenting feature, 21(84%). Duration of disease before presentation was more than 10 years in 8(32%). Pure tone audiometry revealed hearing loss in 16(64%). the commonest indications for surgery was mastoiditis /mastoid abscess in 19(76%). Modified radical mastoidectomy was done in 48% with type iii tympanoplasty in 64%, postoperative appreciable gain in hearing was noted in 13(52%).

Conclusion: Early referral of patients and detailed follow up is essential to minimize the sequelae of hearing loss and persistent discharge.

INTRODUCTION

Mastoidectomy can be a life saving procedure in cases of mastoiditis, persistent chronic suppurative otitis media (CSOM) and intracranial complications of chronic suppurative otitis media¹. However it can be accompanied with fatal complications such as facial nerve palsy, injury to the venous sinuses and CSF leakage. An understanding of mastoid techniques allows the surgeon to individualize the procedure appropriate for each patient and optimize outcome of surgery². The goal of any ear surgery is to create a dry, safe ear, to preserve or restore functional hearing as much as possible and to prevent intracranial complications^{2,3}. Multiple mastoid procedures exist, each with their own indications, advantages, and disadvantages. It can be cortical, modified radical or radical mastoidectomy⁴; all with their different indications. The need for mastoidectomy when strongly indicated should be recognized by Otorhinolaryngologist. However, mastoidectomy can be defined as the surgical procedure of exenterating the mastoid air cell of disease⁴.

The aim of this study was to review the indication and

outcome of mastoidectomy in our environment.

MATERIAL AND METHODS

This is a retrospective study of all patients that had mastoid surgery between 1997 and 2006 in University College Hospital, Ibadan. The case records of these patients were reviewed and the data retrieved include the demographic data, their complaints of the patients and duration of the complaints, the clinical findings, the indication for the surgery the surgical finding, as well as the wound progress post operatively. All these were entered into a computer software SPSS 11.0 and the data were analysed.

RESULTS

The study comprised of 25 surgical procedures in 23 subjects, 9 males and 14 females (M:F = 1:1.5). The peak age incidence was 21 – 35 years constituting 44%, however it ranged between 3 to 64 years, mean of 26 years (SD = 25.00years). Otorrhea and otalgia were the main presenting feature, 21(84%), others are hearing loss 2(8%) and tinnitus 1(4%), aural polyp in 5(20) and facial palsy in 1(4%). The duration of disease before presentation was more than 10

years in 8(32%) of the patients presented after 10years of onset of symptom 6(24%) between 1-10years and 5(20%) between 1-3months, 2(8%) between 3-4weeks, 2 between 3-6months and only 1(4%) presented within one week of onset of symptom.

Pure Tone Audiometry revealed hearing loss in 16(64%). The indications for surgery and clinical diagnoses were mastoiditis/mastoid abscess in 19(76%), aural polyp 5(20%), mastoid abscess 4(16%), cholesteatoma 2(8%) and meningitis 1(4%).

Figure 1

Table 1: Diagnosis

Diagnosis	Frequency(%)
Aural polyp	5 (20%)
Mastoiditis/Mastoid abscess	17(68%)
Facial nerve palsy	1(4%)
Meatal Stenosis	1(4%)
Cholesteatoma	1(4%)
Meningitis	1(4%)

Figure 2

Table 2: Indication for mastoidectomy

Indications	Frequency(%)
Mastoid abscess	4(8%)
Persistent otorrhoea	19(76%)
Facial paresis	1(4%)
Cholesteatoma	2(8%)
Meningitis	1(4%)

The procedure included cortical mastoidectomy in 7(28%), modified radical mastoidectomy 12(48%), attico-antrostomy 4(16%) and radical mastoidectomy 2(8%). This was combined with type III tympanoplasty in 16(64%) and meatoplasty in 8 patients.

Figure 3

Table 3: Summary of operative findings

Operative Finding	Frequency(%)
Middle ear polyp	10(40%)
Ossicular destruction	7 (28%)
Erosion of the lateral/sigmoid sinus	2 (8%)
Erosion of the tegmen with dura exposure	1(4%)
Sclerosed mastoid air cells	8(32%)
Mastoid abscess	9 (36%)
Erosion/ Stenosis of the EAC	6(24%)
Intracranial abscess	3(12%)
Normal mastoid	2(8%)
Facial nerve palsy	1(4%)

Postoperatively, there was appreciable gain in hearing of patients in 13(52%) while there was no gain in 12 (48%). There was associated Facial nerve palsy was in 6(24%), mild wound sepsis 13(52%) and 5(20%) had moderate to severe wound infections 5 (20%) with persistent otorrhea.

DISCUSSION

The majority of the patients were young aged 21-34years years who are economically productive years who are by one way or the other affected socially or economically by the disease condition. These study has shown the all age group can be are involved in the predisposition to mastoidectomy as the age ranges from 3-64yrs, similar to the previous report by Lasisi et al⁵. From our study male to female ratio was 2:3 which differ from the findings of other workers^{5,6,7}. Majority of the patients presented with persistent Otorrhea as a major complaints duration of which was after 10years which support the fact the most are from low socioeconomic group⁵ who would have tried all form of treatment to no avail and due to high cost of treatment in a tertiary set up where specialist are available thus most are unable to afford the cost of seeing a specialist⁵. The commonest indication for surgery was persistent otorrhea which was similar to findings by other workers on chronic suppurative otitis media^{5,6,7} but contradict the views in most standard textbooks³. Most of our patients had modified radical mastoidectomy and almost all had tympanoplasty type III

using temporalis fascia flap for myringoplasty in control of the otorrhoea⁸ while a few had radical surgery as there are few indication for these nowadays and most of these surgery were done on the right in ratio 1:2 to the left this may be related to the fact that most people were right handed thus asses to the side is high, only one patient had bilateral surgery.

The operative findings suggest advanced disease, with extensive destruction of the skullbase. This accounts for the preponderance of open cavity mastoidectomy in most of the patients. This often needs further reconstruction of the mastoidectomy cavity.

However in most of these surgery only 6(24%) had facial nerve palsy post operatively. On the follow up only 20 patients had follow up while 5 did not these may be an evidence of improper explanation of detail of the surgery and follow up to the patient because the outcome of surgery will not be known in this group. The Postoperative complication most encountered in the group of patients was infection of both the post auricular wound and the middle ear with over two-third of the patients with post auricular infection as reported by lasisi et al⁵ and middle ear re-infection with recurrent ear discharge as reported by ojala et al⁹, who found a slight difference between the bacteriology of postoperative infected ear and the preoperative ear. The factor that makes infection eradication difficult includes necrosis of long handle of incus and tympanosclerosis which serve as continous medium for re-infection^{9,10}.

We conclude that early referral of patients as well as detailed follow up are important in the outcome of surgery for the chronic ear.

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