



# Otologic Surgery in a Tropical Environment: About 56 Cases were Operated on at the Yaounde General Hospital-Cameroon

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## Research Article

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## Abstract

**Introduction and Aims :** Ear surgery is a separate entity in the surgical activity of ENT department. In ENT services in developed countries, this activity has become routine. Several data on the activity of otologic surgery in Western teams are available. This surgery is performed in our tropical environment, characterized by under-equipment and poor access to care. But few data from the sub-Saharan African series are reported. To contribute to the understanding of this entity, we conducted this study in the ENT service of the Yaounde General Hospital (YGH), Cameroon. The general objective was to study the practice of ear surgery in our setting.

**Patients and Methods:** This was a cross-sectional, descriptive, retrospective study. The study took place from June 2016 to June 2021, i.e. 5 years. The study was conducted in the ENT and Head and Neck Surgery service of the YGH. The sampling was consecutive. We included in this study all patients with an otological disease, treated surgically during the study period. Socio-demographic, clinical, paraclinical, therapeutic, and evolutionary data were collected.

**Results:** Our sample consisted of 56 operated patients, out of a total of 330 surgeries performed during the study period. This represents a frequency of 16.96%. The distribution of patients according to sex was 33 women and 23 men, i.e. a sex ratio of 0.69 in favor of women. The distribution of the patients in the sample according to age showed an average age of 36.98 years, with extremes ranging from 3 years to 92 years. 55 patients, i.e. 98.2%, were undergoing their first otological surgery, and only one patient had already undergone a previous operation. 49 patients (87.5%) had a symptomatology that had been evolving for more than three months. And 7 (12.5%) had acute or sub-acute symptoms. The main pathologies found and operated on were: open non cholesteatoma chronic otitis with 19 patients (33.92%), otomastoiditis with 9 cases (16.01%), cholesteatoma chronic otitis with 8 cases (14.28%), followed by other pathologies such as otoscléroses, osteomas of the external auditory canal, etc. with 7 cases (12.5%). The most common surgical procedure was tympanoplasty with 19 cases (33.9%), mastoidectomy with 9 cases (16.1%), petro-mastoidectomy with 8 cases (14.3%), extraction of foreign bodies from the auditory canal with 5 cases (8.9%) and cochlear implantation with 4 cases (7.1%). 4 patients, i.e. 7.2%, presented

complications (4 infectious, 1 complaining of tinnitus). 55 patients, i.e. 98.2%, saw an improvement in their symptoms with a favorable evolution.

**Conclusion:** The non-negligible frequency found in our practice at the YGH reflects the definite evolution of this surgery in our environment. The patients are young, chronic open otitis media without cholesteatoma are the main indication, and tympanoplasty is the most practiced surgical modality.

**Keywords:** Otolological Surgery ; Tropical ; Yaounde

**Abbreviation:** YGH : Yaounde General Hospital.

## Introduction

Ear surgery is a separate entity in the surgical activity of ENT service. It can involve the outer ear, the middle ear, and the inner ear. In ENT services in developed countries, this activity has become routine. Teams are formed and evolve in otologic and oto-neurosurgical subspecialty units. Indications range from simple procedures of the outer ear (with ear surgery), to more complex procedures of the inner ear (placement of cochlear implants), to the confines of the cerebellopontine angle (removal of acoustic neuromas). Several data on the otological surgery activity of Western teams are available. This surgery is performed in our tropical environment, characterised by under-equipment and poor access to care. But few data from sub-Saharan African series are reported [1-3]. In Cameroon, the observation is the same, data addressing this problem are rare. In order to contribute to the understanding of this entity, we conducted this study in the ENT service of the Yaounde General Hospital (HGY) in Cameroon. In order to collect data from our environment.

## Objectives

The general objective was to study the practice of ear surgery in our environment. Specifically: 1) to give the frequency of this surgical activity, 2) to draw up the socio-demographic profile of the operated patients, 3) to establish the clinical profile of the operated patients, 4) to determine the types of interventions practised, 5) to give the evolutionary profile of the operated patients of our sample.

## Patients and Methods

This was a cross-sectional, descriptive, retrospective study. The study took place from June 2016 to June 2021, i.e. 5 years. The study was conducted in the ENT and Head and Neck Surgery Department of the YGH. The sampling was consecutive.

We included in this study all patients with an otological condition who were treated surgically during the study

period. Patients with incomplete records, which did not allow the correct completion of the data sheets, were excluded. Socio-demographic, clinical, paraclinical, therapeutic and evolutionary data were collected on data sheets prepared for this purpose. The data was analysed using the ssps 23.0 software.

## Results

### Socio-Demographic Data

Our sample consisted of 56 operated patients, out of a total of 330 surgeries performed during the study period. This represents a frequency of 16.96%. The distribution of patients according to sex was 33 women and 23 men, i.e. a sex ratio of 0.69 in favour of women.

The distribution of the patients in the sample according to age showed: an average age of 36.98 years, with extremes ranging from 3 years to 92 years. 13 patients in the age range 31-40 years, i.e. 23.2%, 11 patients between 0-10 years, i.e. 19.6%, 10 patients over 60 years, i.e. 17.9%. Table 1 shows the distribution of patients by age group. Table 1 shows the distribution of patients by age group.

Age groups (year)	Number of patients (N)	%
0 - 10	11	19,6
Nov-20	6	10,7
21-30	3	5,4
31-40	13	23,2
41-50	6	10,7
51-60	7	12,5
> 60	10	17,9
Total	56	100

**Table 1:** distribution of patients by age group.

The occupational profile showed a cosmopolitan population. Table 2 shows the distribution of patients by occupation.

Profession	Number of patients (N)	%
Pupil	14	25
Teacher	5	8,9
Student	4	7,1
Housekeeper	8	14,3
Trader	4	7,1
Retirement	4	7,1
Other	17	30,4
Total	56	100

**Table 2:** The distribution of patients according to their profession.

55 patients or 98.2% were undergoing otologic surgery for the first time, only one patient had undergone a previous surgery.

### Clinical Data

49 patients (87.5%) had symptoms that had been evolving for more than three months. And 7 (12.5%) had an acute or sub-acute mode. 27 patients (48.2%) were affected on the left side, and 23 patients (41.1%) on the right side.

The main pathologies found and operated on were: open non cholesteatoma chronic otitis with 19 patients (33.92%), otomastoiditis with 9 cases (16.01%), cholesteatoma chronic otitis with 8 cases (14.28%), followed by other pathologies such as otosclerosis, osteomas of the external auditory canal, etc. with 7 cases (12.5%). Table 3 shows the distribution of patients in relation to the pathologies found.

Selected diagnoses	Number of patients (N)	%
Cholesteatoma Chronic Otitis	8	14,28
open non cholesteatoma chronic otitis	19	33,92
Embedded foreign body	5	8,9
Pavilion wound	2	3,6
Profound deafness	4	7,14
Seromucosal chronic otitis	2	3,52
Otomastoiditis	9	16,01
Other	7	12,5
Total	56	100

**Table 3:** the distribution of patients in relation to the pathologies found.

The lésions were located in the middle ear in 41 cases, i.e. 73.2%. Table 4 shows the distribution of patients according to the anatomical location of the lesions (Table 4).

Site of lesions	Number of patients (N)	%
External ear	11	19,6
Middle ear	41	73,2
Inner ear	4	7,1
Total	56	100

**Table 4:** The distribution of patients according to the anatomical location of the lesions.

### Therapeutic Data

The most common surgical procedure performed was tympanoplasty with 19 cases or 33.9%, mastoidectomy with 9 cases or 16.1%, petro-mastoidectomy with 8 cases or 14.3%, extraction of foreign bodies from the ear canal with 5 cases or 8.9%, cochlear implantation with 4 cases or 7.1%. Table 5 shows the distribution of patients according to the surgical procedure performed.

Surgical procedure	Nombre de patients (N)	%
Tympanoplasty	19	33,9
Mastoidectomy	9	16,1
Petro-mastoidectomy	8	14,8
Foreign bodies extraction	5	8,9
Cochlear implantation	4	7,1
Tympanic aerator	2	3,6
Pavilion plasty	2	3,6
Other	7	12
Total	56	100

**Table 5:** The distribution of patients according to the surgical procedure performed.

54 patients (96.4%) were operated on under general anaesthesia, 2 (3.6%) under local anaesthesia. The average hospital stay was 3.5 days with extremes ranging from 2 to 8 days.

### Evolutionary Data

4 patients, i.e. 7.2%, presented complications (4 infectious, 1 tinnitus complainant). 55 patients (98.2%) had an improvement in their symptoms with a favourable evolution.

## Discussion

The aim of this preliminary study was to study the practice of otological surgery in our environment and to take stock of it. Although the sample of patients selected was small, it allowed us to obtain data on the practice of this surgery in our environment, which is not very well equipped.

## Epidemiological Data

Our sample consisted of 56 operated patients, out of a total of 330 surgeries performed during the study period. This represents a frequency of 16.96%. Our results are close to those of Coulibaly, who in Bamako, in a study of 150 patients in two hospitals, found a frequency of 18.6% [3]. The female predominance of operated cases was found in most of the series [3].

The average age of our study population was 36.98 years, with extremes ranging from 3 years to 92 years. The literature shows a young patient population [3,4]. This distribution is consistent with the overall average age of our populations, which is young.

The study population consisted mainly of students with 14 patients, our results are similar to those of Coulibaly, et al. [3].

## Clinical Data

55 patients, i.e. 98.2%, were undergoing their first otologic surgery. These results are particular and differ from the literature [4]. Indeed, western services, which are used to this surgery, have more series and perform surgeries that sometimes require a «second look» such as cholesteatoma surgery or revision surgery. Our series is young, as this surgery is in its infancy in our department, which may explain this state of affairs.

Our series presents chronic ear diseases, our results are similar to those of African series [1-3,5,6]. Indeed, in our environment, the management of otological pathologies is still marked by delays in diagnosis and management.

The main pathologies found and operated on were: open non cholesteatoma chronic otitis with 19 patients, i.e. 33.92%, our figures are found in the literature [1-3,5,6]. One of the particularities of our series is the presence of 4 cases of bilateral profound deafness. Often these conditions were not managed in our setting, as the expertise and technical facilities were insufficient. But efforts are being made to make these cochlear implant surgeries available.

The lesions were located in the middle ear with 41 cases,

i.e. 73.2%, the preferred site of the surgeries concerned the middle ear, this is due to the fact that the main indication was chronic otitis.

## Therapeutic and Evolutionary Data

The most common surgical procedure was tympanoplasty with 19 cases or 33.9%, our results are similar to the literature [1,3,5,6]. Chronic open non-cholesteatoma otitis being the main indication, the surgical procedure used is justified. Other procedures, notably stapedectomies, are less practiced because they are technically more difficult to perform. They require the acquisition of skills that are still in progress. Also, the absence of consumables essential for certain indications limits the practice of certain surgeries (Teflon® prostheses, Kurtz® prostheses, etc.). The type of tympanoplasty performed has not been studied in this preliminary work, and future work will make it possible to specify these data. Cochlear implantation was found in 4 patients, which is a particularity of our study, because in spite of the youth of our team and our practice, the department benefits from the support of Moroccan expertise in performing these advanced surgeries, which are essential in cases of profound deafness.

The evolutionary results seem good, but a complementary study over a longer postoperative period will be necessary to refine our results.

## Conclusion

Otological surgery is an important part of the surgical activity of ENT service. The non-negligible frequency found in our practice at the HGY reflects the definite evolution of this surgery in our environment. The patients are young, chronic open non cholesteatoma chronic otitis are the main indication, and tympanoplasty is the most practiced surgical modality. Continuous training and the provision of otological surgical equipment and consumables will certainly enable us to increase our activity.

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