

Pattern and causes of tympanic membrane perforation at a private hospital in Dar es Salaam, Tanzania

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Introduction: There is variation in the size, shape and position of tympanic membrane perforations; the degree of conductive hearing loss depends on the size and position of perforation.

Objective: To determine the pattern and causes of tympanic membrane perforation at a private health facility in Tanzania

Method: A hospital-based cross-sectional study in the ENT clinic at Ekenywa Specialised Hospital was conducted from January to May 2019. Ears were examined thoroughly by an Otorhinolaryngologist. Data were analysed using SPSS Version 21

Results: Two hundred and fifty patients were examined and 50 (20%) were found to have tympanic membrane perforations. Thirty (60%) were new patients while twenty (40%) were under review. Most 35(70%) were males. Central perforation predominated in 30 (60%), followed by subtotal in 10 (20%), total in 8 (16%) and marginal perforations in 2 (4%). The left ear was more affected in (60%) than the right ear. Bilateral perforations accounted for 5 (10%) of cases. Chronic suppurative otitis media was found in 35 (70%); other causes were acute suppurative otitis media in 13 (26%) and trauma in 2 (4%) patients

Conclusions: The clinical picture depicted in this study is similar to that found elsewhere. There is a need for prompt diagnosis of tympanic membrane perforation. Proper education on ear care in patients with perforated tympanic membrane is of paramount importance.

Keywords: Pattern, Causes, tympanic membrane, perforation, Tanzania

INTRODUCTION

The tympanic membrane is an important structure lying obliquely between the external and middle ear. It has three layers: an outer squamous, middle fibrous and inner mucous layer.^[1]

Causes of tympanic membrane perforation include trauma, infectious agents, neoplasms and iatrogenic causes.^[1-3] Trauma may result from foreign bodies lodged in the ear, unskilled instrumentation or aural toilet, sudden air compression as in boxing, hand-slap and blast. Acute suppurative otitis media (ASOM) and chronic suppurative otitis media (CSOM) are two main infectious processes.^[4-7]

The size and location of perforation affect the degree of hearing loss. Chronic infection may cause large perforations and hence greater hearing loss.

Studies have reported CSOM to be prevalent in Tanzania at rate similar to those in other developing countries such as Nigeria, Kenya, and South Sudan with all linked to low socio-economic status^[4,8,9] and this can result in late presentation at available health facilities.

The aim of this study was to determine the pattern and causes of tympanic membrane perforations among patients attending an ENT clinic at the private hospital which serves the largest number of ENT clients in Dar es Salaam.

METHOD

A hospital based cross-sectional study at Ekenywa Specialised Hospital was conducted from January to May 2019. Patients with otological complaints were examined by an Otorhinolaryngologist and recruited after giving a written informed consent. Data were analysed using SPSS Version 21. Permission to conduct the study was obtained from the hospital's ethical committee.

RESULTS

Fifty (20%) out of 250 recruited patients were found to have tympanic membrane perforations in one or both ears. Thirty (60%) of these 50 patients were new attendees while 20 (40%) were review cases. Thirty five (70%) were males. A third of the patients (34%) were aged up to ten years old. (Table 1)

A central perforation was found in 60% (Table 2). The left side was affected more commonly (60%) with both sides affected in 10% of patients (Table 3). A traumatic cause of perforation was unusual at only 4% whereas CSOM was commonest at 70%. The two cases of traumatic perforation of tympanic membranes were due to slap by sexual partners. (Table 4)

DISCUSSION

Tympanic membrane perforation is the commonest presentation in routine otorhinolaryngology clinical practice in both developed and developing countries. In our study, most patients were aged up to ten years and this may be due to high prevalence of the causes of tympanic membrane perforation in children similar to other studies done elsewhere.^[5,7]

CSOM was the cause of 70% of our cases of tympanic membrane perforation and this is in line with other studies done in Pakistan, Nigeria and India.^[4,10,11] ASOM accounted for 26% of our cases, and this may be due to late presentation or inadequate management elsewhere. These findings reflect those from Nigeria and Nepal.^[4,6] At times patients with ASOM may outweigh those with CSOM if they reported early to health care facilities where such prompt diagnosis may be established.^[5]

Traumatic tympanic membrane perforation in this study accounted for only 4% of cases similar to what has been seen in other countries where it was found to be the least common cause of tympanic membrane perforation.^[2,5] Traumatic perforation of the tympanic membrane may be caused by foreign bodies in the ear and this may be multiplied by removing such foreign bodies by unskilled personnel. Audiological data was not presented in this study because of inaccessibility by patients to such a test due to expenses.

CONCLUSION

The pattern and causes of tympanic membrane perforation

Table 1. Age distribution of patients with perforated tympanic membranes

Age of participants (years)	n (%)
≤10	17 (34)
11-20	10 (20)
21-30	5 (10)
31-40	6 (12)
41-50	5 (10)
>50	7 (14)
Total	50 (100)

Table 2. Types of tympanic membrane perforation among participants

Type of tympanic membrane perforation	n (%)
Marginal	2 (4)
Total	8 (16)
Central	30 (60)
Subtotal	10 (20)
Total	50 (100)

Table 3. Lateralization of the ears with tympanic membrane perforation

Lateralization or side affected	n (%)
Left	30 (60)
Right	15 (30)
Bilateral	5 (10)
Total	50 (100)

Table 4. Causes of tympanic membrane perforation

Causes of tympanic membrane perforation	n (%)
CSOM	35 (70)
ASOM	13 (26)
Trauma	2 (4)
Total	50 (100)

described in this study resembles those found elsewhere. There is a need to provide public health education on ASOM and CSOM and to equip health personnel working in other health facilities on how best to manage such otological conditions. Quick referral of patients with otological complaints to specialized centres where comprehensive ENT services are offered is of paramount importance if the goal of having ears free from diseases is to be achieved.

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