

## EMERGENCY EAR, NOSE AND THROAT ADMISSIONS IN NORTHERN GHANA

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### Abstract

**Background:** Ear, nose and throat (ENT) emergencies are common in the north of Ghana; however, there are no published reports. We conducted a retrospective study of ENT emergencies at the ENT Unit of the Tamale Teaching Hospital (TTH).

**Methods:** This was a four-year review of patients admitted for emergency care at the ENT Unit of the Tamale Teaching Hospital between January 2013 and December 2016. Analyzed parameters included age, sex, diagnosis and outcome of treatment.

**Results:** A total of 390 patients were admitted for ENT emergency treatment during this period. Thirty-eight patients were excluded on account of incomplete information with 352 patients included in the final

analysis. The sex distributions of patients were 209 males and 143 females with a male to female ratio of 1.46:1. The age range was 6 months to 81 years with a mean age of  $27.2 \pm 21.2$  (median age of 25.5) years. Peak age incidence was in 0-10 age group. The most common indications for ENT emergency admissions were maxillofacial injuries (22.7%), foreign body ingestion (17.9%), deep neck (multi-)space abscesses (14.5%) and upper airway obstruction (8.2%). Fifteen patients (4.7%) admitted for emergency care died.

**Conclusion:** The most common indications for ENT emergency admissions from our study were throat related conditions and maxillofacial injuries that were treated successfully in 89.4% cases.

**Key Words:** Ear, Nose, Throat, Emergency, Tamale

### Introduction

The Tamale Teaching Hospital is the third largest teaching hospital in Ghana located in the northern part of the country and affiliated to the University for Development Studies (UDS). The ENT Unit serves as a referral center for hospitals within the three Northern Regions of Ghana. Ear, nose and throat (ENT) emergencies are common in clinical practice in the northern part of Ghana<sup>1</sup>. Early diagnosis and treatment of these emergencies would reduce morbidity and mortality<sup>2</sup>. Kitcher et al, in their study, found foreign bodies in the esophagus, epistaxis, throat infections and stridor to be the commonest ENT emergency admissions at Korle-Bu Teaching Hospital. They reported a 2.7% mortality mainly from epistaxis and deep neck abscess<sup>1</sup>.

Adedeji and colleagues in Osun state, Nigeria, noted that epistaxis, nasal or facial trauma, pharyngo-esophageal foreign bodies and upper airway obstruction were the commonest otorhinolaryngological emergency admissions<sup>3</sup>. In rural India, Yojana et al, also observed from their study that maxillofacial trauma accounted for a majority of the admissions and this was followed by ENT foreign

bodies with five deaths from non-ENT causes<sup>4</sup>. This study was conducted to determine the causes and distribution of ear, nose and throat emergency admissions in the northern part of Ghana at the ENT Unit of the Tamale Teaching Hospital. The data obtained in this study will form the baseline for future studies with regards to ENT condition.

### Methods

This was a retrospective descriptive study of patients admitted for emergency care in the ENT Unit of the Tamale Teaching Hospital (TTH), the only tertiary referral center located in the Northern Region of Ghana, from January 2013 to December 2016. TTH has a bed capacity of 480 and provides specialist care for the three northern regions with a population of approximately 5 million people. The ENT Unit has three ENT surgeons responsible for patient care. Patients were admitted for emergency care via the Accident and Emergency Department, Paediatric Emergency Unit, general Out-Patient Department (OPD) as well as the ENT OPD clinic. The clinical records of these patients were studied with respect to the age, sex, diagnosis and outcome of emergency treatment. Excluded from this study were patients admitted for emergency care for terminal cancer, elective surgery and those with incomplete information. The data obtained was extracted from the Admission and Death book of the ENT ward and statistical analysis of means, median and standard deviation was done using SPSS software version 20.0 (Chicago, IBM 2010)

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## Results

A total of 390 patients were admitted for ENT emergency treatment during the period. Thirty-eight (38) patients were excluded on account of incomplete information with 352 patients included in the final analysis. The sex distributions of patients were 209 males (59.4%) with a male to female ratio of 1.46:1. The age range was 6 months to 81 years with a mean age of  $27.2 \pm 21.2$  (median age of 25.5) years. The peak incidence was in the 0-10 age group.

**Table 1:** Age group and sex distribution of patients with ENT and maxillofacial emergencies.

Age groups	Male	Female	Frequency	Percentage (%)
0-10 years	57	49	106	30.1
11-20 years	28	12	40	11.4
21-30 years	30	35	65	18.5
31-40 years	36	18	54	15.3
41-50 years	26	6	32	9.1
51-60 years	13	12	25	7.1
61-70 years	13	2	15	4.3
71-80 years	5	9	14	4.0
81-90 years	1	0	1	0.3
<b>Total</b>	<b>209</b>	<b>143</b>	<b>352</b>	<b>100</b>

The most common indications for the ENT emergency admissions were maxillofacial injuries (22.7%), esophageal foreign bodies (17.9%), deep neck (multi-) space abscesses (14.5%), upper airway obstruction (8.2%) and foreign body aspiration (7.7%).

**Table 2a:** Indications for emergency ENT admissions

Diagnosis	Frequency	Percentage (%)
<b>Ear</b>		
Ear foreign body	3	0.9
Acute mastoiditis	2	0.6
<b>Total</b>	<b>5</b>	<b>1.5</b>
<b>Nose/Nasopharynx</b>		
Epistaxis	24	6.8
Acute Rhinosinusitis	4	1.1
Nasal foreign body	3	0.9
Nasopharyngeal foreign body	1	0.3
<b>Total</b>	<b>32</b>	<b>9.1</b>

**Table 2b:** Indications for emergency ENT admissions

Diagnosis	Frequency	Percentage (%)
<b>Throat</b>		
Foreign body ingestion	63	17.9
Deep neck (multi-)space abscesses	51	14.5
Upper airway obstruction	29	8.2
Ludwig's angina	27	7.7
Foreign body aspiration	27	7.7
Retropharyngeal abscess	13	3.7
Peritonsillar abscess	7	2.0
Acute tonsillitis	5	1.4
Cut throat injury	3	0.9
Buccal space abscess	1	0.3
Anterior neck abscess	1	0.3
Submandibular abscess	1	0.3
Ulcerative Pharyngitis	1	0.3
<b>Total</b>	<b>229</b>	<b>65.1</b>
<b>Head and Neck</b>		
Maxillofacial injuries	80	22.7
Neck trauma	5	1.4
<b>Total</b>	<b>85</b>	<b>24.1</b>
<b>Others</b>		
Facial burns	1	0.3
<b>Total</b>	<b>1</b>	<b>0.3</b>
<b>Grand total (table 2a + table 2b)</b>	<b>352</b>	<b>100</b>

Three hundred and fifteen (89.4%) of the patients were discharged home after successful surgical and medical treatment. The mortality rate in this retrospective study was 4.3%. Twenty-two (22) patients were referred for advanced treatment not readily available in TTH.

**Table 3:** Outcome of treatment

Treatment Outcome	Frequency	Percentage (%)
Discharged	315	89.4
Referrals	22	6.3
Deaths	15	4.3
<b>Total</b>	<b>352</b>	<b>100</b>

## Discussion

In this study, more males had ENT emergencies than females. The male to female ratio was 1.46:1. This was observed to be consistent with that reported in other studies<sup>1,3,5</sup>. Children in their first decade of life were found to be the most commonly admitted age group for emergency ENT care similar to findings by other series<sup>1,6</sup>. This is because children in this age group are constantly exploring their immediate environment hence exposing them to various injuries.

In contrast some authors, found that a majority of their patients were between the third and fourth decades of life<sup>3,7</sup>. Throat-related conditions and maxillofacial injuries were the commonest indications for emergency ENT admissions to the ENT Unit. Foreign body ingestion was the most common throat condition in our study and this has been reported by other authors<sup>1,3-5</sup>. However, in comparison to a similar study done in Accra, Ghana, our study found maxillofacial injuries (such as facial lacerations, orbital floor fractures, maxillary fractures and mandibular fractures) as one of the common indications for ENT emergency admissions<sup>1</sup>. This was as a result of the absence of maxillofacial surgeons in TTH; thus the ENT team saw such patients. The maxillofacial injuries in present study were due mainly to motorcycle accidents as a result of poor law enforcement that allows motorbike riders not to wear crash helmets when riding. In the study by Andrade et al<sup>8</sup>, they found ear-related diseases as their most common indication for emergency admissions in Sao Paulo, Brazil, while we found throat-related diseases were the most common reasons for admission in our environment. This was because our ear-related diseases were mainly treated on OPD basis. Secondly the difference could be due to the cultural practices in our area such as the use of herbal concoction to treat throat and dental infection and the strong belief that abscesses should not be managed with injection otherwise it would lead to the death of the individual. Cut throat injuries in this study were few compared to findings by other authors. They were mainly due to suicidal attempts in patient with known psychiatric illness<sup>9,10</sup>. The deaths in the study was mainly due to sepsis and mediastinitis from deep neck abscesses and was found to be higher compared to that found by Kitcher and colleagues<sup>1</sup>. This was due, mainly to late presentation (because the patients would usually report to the traditional herbalist first), high illiteracy rate and wrong cultural beliefs. The retrospective nature of our study with its inherent problem of missing data from incomplete information is a limitation. Furthermore, the effect of missing data on the size and case distribution of our study is well noted.

## Conclusion

The epidemiology of ENT emergencies in our hospital has widened to include maxillofacial injuries. Thus, the ENT surgeon in these surroundings has to be adept at also efficiently managing maxillofacial emergencies in order to save lives, as can be inferred from our paper. The result is that we were able to manage the most common ENT throat-related conditions in addition to the maxillofacial injuries that reported to TTH and so achieved a very high success rate of treatment of these patients.

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