



Audit of Otorhinolaryngological, head and neck emergency in a tertiary health care centre in a sub Saharan Africa

Waheed Atilade Adegbiyi¹, Gabriel Toye Olajide^{2*}

¹ Department of ENT, Ekiti State University Teaching Hospital, Ado Ekiti, Nigeria

² Department of ENT, Federal Teaching Hospital Ido-Ekiti, Ekiti State, Nigeria

² Afe-Babalola University Ado-Ekiti (ABUAD), Nigeria

Abstract

Background: Ear, nose and throat, head and neck emergency are very common with low levels of awareness. Early diagnosis and treatment lead to good outcome with low morbidity and mortality. This study aimed at determining prevalence, socio-demographic features, types, Comorbid illnesses and management of otorhinolaryngological emergency in our centre.

Materials and Methods: This was a retrospective study of the total number of ENT patients referred to Ear, Nose and throat department of Ekiti state university teaching hospital Ado Ekiti between July 2016 and June 2018. The clinical records of all the patients that have complete data were reviewed. All the data obtained were collated and analysed using SPSS version 18.0.

Results: Prevalence of emergency Otorhinolaryngological cases in this study was 18.4%. There were 62.2% males with male to female ratio of 1.5:1. There were urban dwellers in 61.2%. The main type of otorhinolaryngology emergency was 55.8% foreign body (Ear, Nose and Throat), 19.0% infection/inflammation and 13.4% trauma/road traffic accident. The most common otorhinolaryngology foreign body distributions were ear, nose and throat in 28.8%, 23.4% and 3.6% respectively. Infection/inflammation occurred in the 6.4% ear, 5.9% nose and 7.5% throat.

The anatomical distributions of otorhinolaryngology emergency were 49.9% in the ear, 31.9% in the nose and 15.9% in the throat.

The most frequent clinical features of the otorhinolaryngology emergency in this study were pain in 60.7% followed by foreign body (ENT) in 54.5%.

Major sources of referral were from self-reporting in 33.9% and casualty officers in 22.9%.

Modes of otorhinolaryngological emergency patient's presentation were ENT outpatient clinic in 77.6%, accident and emergency in 17.5% and hospital ward in 4.9%.

Pre-hospital treatment occurred in 44.2% of the studied patients. 50.9% of the patients had conservative/medical treatment. Foreign body removal was done in 52.2% patients. Nasal packing were done in 6.9% while incision and drainage were performed in 5.4%.

Conclusion: Otorhinolaryngological emergency is common in various forms in our practice. This is associated with complications at presentation. Early referral is advised.

Keywords: audit, otorhinolaryngological, emergency, developing country

Introduction

Otorhinolaryngology emergency service is an integral part of the ear, nose, throat, head and neck clinical care and it is an indicator of quality otorhinolaryngological health care system. It is important to note that otorhinolaryngological accidents and emergencies may occur at any time in various forms ^[1, 2]. Emergency care must be available round the clock.

Otorhinolaryngological, head and neck emergencies are common in our clinical practice worldwide ^[3]. Prevalence of the ear nose and throat (ENT) emergency varies in the otorhinolaryngological practice worldwide ^[4, 5]. This depends on the socio-demographic features, industrialisation and cultural revolution.

Aetiology of emergency in ENT ranges from traumatic disorders, inflammatory disease to neoplastic diseases ⁶⁻⁸. The prevalence of the causative agent varies in different regions of the world ^[9, 10].

Early diagnosis and treatment of otorhinolaryngological emergencies would reduce morbidity and mortality ^[11]. Unfortunately many patients still die from these highly

preventable and treatable emergency diseases ^[12, 13]. This sad situation is very rampant in developing countries where most of these disorders undertones of ignorance, environmental, cultural factors and government policy ^[14].

There is a paucity of the study of otorhinolaryngological, head and neck emergencies in our environment, Ekiti. This study aimed at determining prevalence, socio-demographic features, types, Comorbid illnesses and management of otorhinolaryngological emergency in our center.

Materials and Methods

This was a retrospective study of patients referred to ear, nose and throat department of Ekiti state university teaching hospital Ado Ekiti between July 2016 and June 2018 with emergency presentation.

The clinical records of the patients were reviewed. The bio-data, socio-demographic features, diagnosis and treatment were extracted from the record. All the patients that had complete data were included in the study. All the data obtained were collated and analysed using SPSS version 18.0. Descriptive statistics was used to present the data and

were expressed as a simple percentage, frequency table and pie charts.

Results

Emergency otorhinolaryngological cases accounted for 389 (18.4%) of the 2,118 patients seen in our ear, nose and throat department in the period under study.

The major otorhinolaryngological emergency presentation was in the age group 1 – 10 years in 139 patients. This is followed by 92 (23.7%) in the age group (11-20) years, while the least was 6 (1.5%) in age group ≥61 years. Table 1.

There were 242 (62.2%) males and 147 (37.8%) females with a male to female ratio of 1.5:1. Over half (62.2%) of the patients were Urban dwellers. The education status of our patients were primary, secondary, no formal education, post secondary, in 119 (30.6%), 103 (26.5%), 93 (23.9%) and 74 (19.0%) respectively in descending order. Majority of the patient’s occupation were driver in 108 (27.8%), industrial workers in 72 (18.5%) and 71 (19.8%) into business. Others are artisans in 61 (15.7%), farming in 45 (11.6%) and civil servants in 33 (8.5%). Table 2

The main type of otorhinolaryngology emergency was 217 (55.8%) foreign body (Ear, Nose and Throat), 74 (19.0%) infection/inflammation and 52 (13.4%) trauma/road traffic accident. Others were sensorineural disorder, tumour and functional disorder in 21 (5.4%), 19 (4.9%) and 6 (1.5%) respectively Table 3. The most common otorhinolaryngology foreign body distributions were ear, nose and throat in 112 (28.8%), 91 (23.4%) and 14 (3.6%) respectively. The most frequent predisposing factors for foreign body impaction were 52 (22.3%) allergy and 48 (20.6%) earwax impaction. In addition, there were personal hygiene in 11 (4.7%) and otitis externa in 13 (5.6%). Infection/inflammation occurred in the 25 (6.4%) ear, 23 (5.9%) nose and 29 (7.5%) throat. The Ear in 11 (2.8%), nose in 21 (5.4%), throat in 3 (0.8%) and head/neck in 17 (4.4%) were the trauma/road traffic accident in this study. Tumour of Sinonasal origin in 13 (3.3%) and pharyngolaryngeal origin in 6 (1.5%) were the main cause of otorhinolaryngological emergency in this study. demonstrated the types of the foreign body.

The anatomical distributions of otorhinolaryngology emergency were 194 (49.9%) cases in the ear, 124 (31.9%) cases of the nasal and 62 (15.9%) cases of throat. Others were head and neck cases of emergency in 9 (2.3%). Figure 1.

The most frequent clinical features in this study were pain in 236 (60.7%), foreign body (ENT) in 212 (54.5%), bleeding in 69 (17.7%), hearing loss in 48 (12.3%) and nasal blockage in 46 (11.8%). Other clinical features include 32 (8.2%) lacerations, 29 (7.5%) mass/swelling and 23 (5.9%) odynophagia/dysphagia. Table 4

There were acute presentation (<13 weeks) otorhinolaryngology emergency in 360 (92.5%) and chronic otorhinolaryngology emergency (≥13 weeks) in 29 (7.5%). The acute presentation was 1 weeks in 223 (57.3%) was commoner than (2-13) weeks in 137 (35.2%). Duration of emergency prior to presentation is illustrated in figure 2. In this study, commonest time of presentation of otorhinolaryngological emergency was daytime in 286 (73.5%). The otorhinolaryngological emergency presentation

at night and late night were 76 (19.5%) and 27 (6.9%) respectively. Figure 3.

Major sources of referral were from self-reporting in 132 (33.9%) and casualty officers in 89 (22.9%). Others sources of referral were from paediatricians in 78 (20.1%) and general practitioner in 77 (19.8%). Table 5.

Modes of otorhinolaryngological emergency presentation were ENT outpatient clinic in 302 (77.6%), accident and emergency in 68 (17.5%) and hospital ward in 19 (4.9%). Figure 4.

In this study, common associated complications of otorhinolaryngology emergency comprised of 24 (6.2%) otitis externa, 22 (5.7%) injury/bleeding and 19 (4.9%) wound infection. Others includes perforated tympanic membrane in 16 (4.1%), otitis media in 13 (3.3%) and mortality in 5 (1.3%). Table 6.

In the management of the otorhinolaryngological emergency in this study, pre-hospital treatment occurred in 172 (44.2%) of the studied patients. 198 (50.9%) of the patients had conservative/medical treatment. Foreign body removal was done in 203 (52.2%) patients. Nasal packing were done in 27 (6.9%) while incision and drainage were performed in 21 (5.4%). Table 7. In this study, 301 (77.4%) patients were satisfied with the hospital treatment intervention.

Table 1: Age group distribution of the patients

Age group (year)	Frequency (n)	Percentage (%)
1-10	139	35.7
11-20	92	23.7
21-30	79	20.3
31-40	36	9.3
41-50	28	7.2
51-60	9	2.3
≥61	6	1.5
Total	389	100

Table 2: Sociodemographic features of patients with otorhinolaryngology emergency. (N=389)

Socio-demographic features	Frequency (n)	Percentage (%)
Sex		
Male	242	62.2
Female	147	37.8
Residential		
Urban	238	61.2
Rural	151	38.8
Education level		
No formal education	93	23.9
Primary	119	30.6
Secondary	103	26.5
Post secondary	74	19.0
Patients/parents occupation		
Civil servants	33	8.5
Business	71	19.8
Driver	108	27.8
Industrial worker	72	18.5
Farming	45	11.6
Artisans	61	15.7

Table 3: Aetiology of emergency among patients

Aetiology	Frequency (n)	Percentage (%)
Foreign body (ENT)	217	55.8
Trauma/RTA	52	13.4
Infection/inflammation	74	19.0
Tumour	19	4.9
Functional disorder	6	1.5
Sensorineural disorder	21	5.4
Total	389	100.0

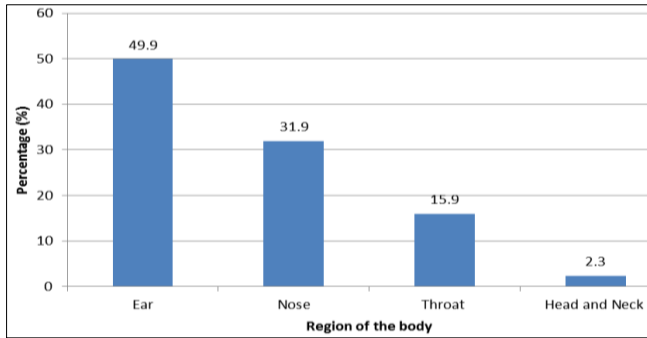


Fig 1: Anatomical distribution of the emergency

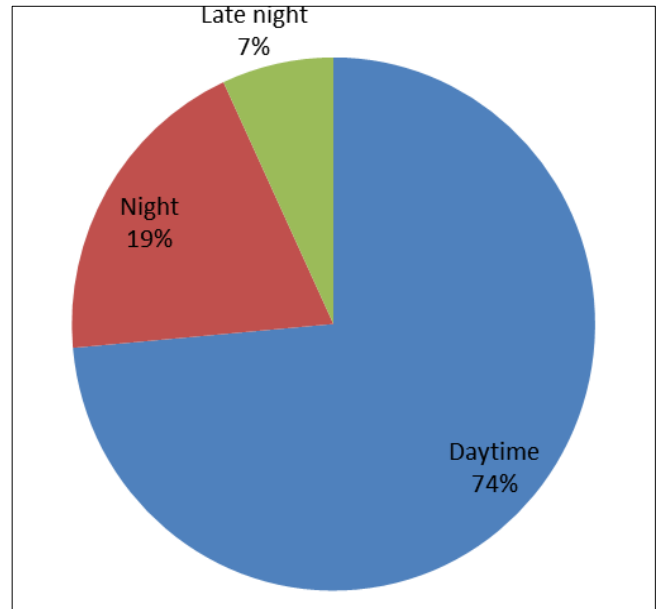


Fig 3: Time of presentation

Table 4: Clinical features of the otorhinolaryngology foreign body

Clinical features	Frequency (n)	Percentage (%)
Foreign body impaction	212	54.5
Difficulty breathing	17	4.4
Pain	236	60.7
Hearing loss	48	12.3
Lacerations	32	8.2
Bleeding	69	17.7
Nasal blockage	46	11.8
Hoarseness	8	2.1
Odynophagia/dysphagia	23	5.9
Vertigo	11	2.8
Mass/swelling	29	7.5

NB: Some of the patients present with more than one clinical features

Table 5: Sources of referral of the patients

Sources of referral	Frequency (n)	Percentage (%)
Self reporting	132	33.9
General practitioner	77	19.8
Casualty officer	89	22.9
Paediatrician Others	78	20.1
Total	13	3.3
	389	100.0

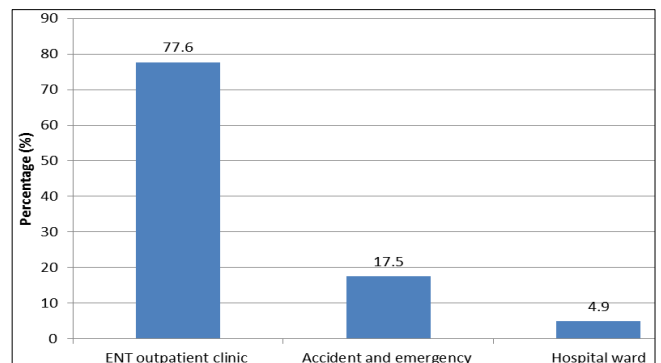


Fig 4: Pattern of presentation

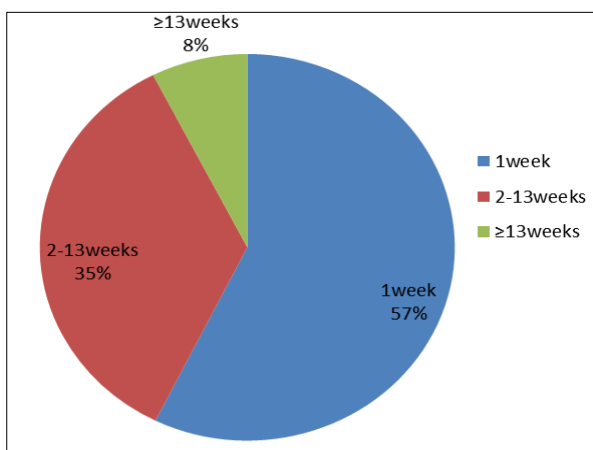


Fig 2: Duration of emergency prior to presentation

Table 6: Associated comorbidity/Complications of otorhinolaryngology emergency

Compilations	Frequency (n)	Percentage (%)
Otitis media	13	3.3
Otitis externa	24	6.2
Wound infection	19	4.9
Perforated tympanic membrane	16	4.1
Injury/Bleeding Mortality	22	5.7
	5	1.3

Table 7: Management of the otorhinolaryngology emergency

Treatment	Frequency (n)	Percentage (%)
Prehospital treatment	172	44.2
Conservative/medical treatment	198	50.9
Foreign body removal	21	5.4
Incision and drainage	27	6.9
Nasal packing Referral	38	9.8

NB: Some patients have more than one form of treatment

Discussion

Prevalence of otorhinolaryngological, head and neck emergency was 18.4% in this study. Higher prevalence of 38.2% was reported in other study done in the southern part of Nigeria [15].

Younger patients in their first decade of life were found to be the most frequently seen with emergency ear, nose and throat diseases in this study. This is similar to findings by other work [16]. This may be due to constantly exploration of immediate environment by children with resultant otorhinolaryngological injuries.

There was male preponderance in this study which is similar to findings of other studies [15,17]. However, a contrary finding was reported in other study in Ghana [3]. Other commonly associated socio-demographic features among the studied patients revealed high prevalence of urban dwellers, predominant primary, secondary school students and majorly driver, industrial workers and businessmen.

Based on the aetiology, foreign body impaction was the commonest and the second commonest cause was infection/inflammation followed by trauma/RTA. Balance disorders were most reported in other study in Ramat Aviv, Israel [18].

Ear diseases are the commonest otorhinolaryngologic organ affected in this study followed by nasal diseases. A contrary finding was reported in study done Ghana with throat diseases as the commonest followed by nasal diseases [19].

Pain, most frequently clinical features in this study, arising from any of the otorhinolaryngology, head and neck structure are due to the pathology or unprofessional interventions. Pain was followed complaints foreign body impaction and bleeding from the delicate and fragile organs. Inappropriate instruments by unskilled hand to remove foreign body impaction from ear, nose and throat leads to pain, injury and bleeding. Failure of removal and associated complications are the presenting complaints to specialist.

As an emergency condition, majority of the patients presented within the first week and during the day time. This could be as a result of pain, discomfort and anxiety to the patients, guardian or parents, which might have prompt them to seek for early intervention.

Majority of the patients reported in ENT outpatient clinic. This might be due to location of our clinic and departmental offices in the same complex. This is probably responsible for patients with classic otorhinolaryngology emergency to self report to our department. Others with non classic diseases reported to other departments before referral to ear, nose and throat department.

Inappropriate instruments by unskilled hand to remove foreign body impaction from head and neck orifices and mismanagement of other emergencies lead to avoidable complications. Otitis externa and injury/bleeding were

common complications in this study. This is similar to findings by the author in previous studies [20-22].

Pre-hospital and prior non-specialist interventions are common encountered in otorhinolaryngological emergency management in this study. It makes simple conditions more complex also increases the cost of treatment and hospital admissions. Most were done out of curiosity, anxiety and pity. This practice are due to barriers to receiving otorhinolaryngological emergency care as in our previous studies [14, 23].

Conclusion

Otorhinolaryngological, head and neck emergency is common in various forms in our practice in developing countries. This is associated with pre-hospital and prior non specialist interventions with resultant avoidable complications at presentation. Health education on safe health care practice and early referral is advised.

Funding

There was no financial support. It was a self-sponsored research study.

Competing interests

All the authors declare that there was no competing interests..

Acknowledgements

The authors are most grateful to Ekiti state university teaching hospital, the staff and all the patients who participated in this study.

References

- Rivero VP, Ugena ER, Yanez KT, Fuentes MA, Garcia MM, Ruiz GT. The paperis Descriptive study of 21,804 ENTemergencies in a third level hospital. *Anales ORL Iber Am.* 2003; 30:237-45.
- Timsit CA, Bouchene K, Olfatpour B, Herman P, TranBa Huy P. Epidemiology and clinical findings in 20, 563 patients attending theLariboisiere hospital ENT adult emergency clinic. *Ann Otolaryngol Clin Cervicofac.* 2001; 118:215-24.
- Kitcher E, Jangu A, Baidoo K. Emergency ear, nose and throat admissions at the korle-bu teaching hospital. *Ghana Med J.* 2007; 41(1):9-11.
- Creighton FX Jr, Poliashenko SM, Statham MM, Abramson P, Johns MM 3rd. The growing geriatric otolaryngology patient population: a study of 131,700 new patient encounters. *Laryngoscope.* 2013; 123:97-102.
- Io Medicine. Retooling for an aging America: building the healthcare workforce. The National Academies Press, Washington, DC, 2008.
- Vassiliu P, Baker J, Henderson S, Alo K, Velmahos G, Demetriades D. Aerodigestive injuries of the neck. *AM Surg.* 2011; 67:75-9.
- Gilyoma JM, Chalaya PL. Endoscopic procedures for removal of foreign bodies of the aerodigestive tract: the Bugando medical centre experiences. *BMC Ear Nose Throat Disord.* 2011; 11:2.
- Figueriedo RR, Azevedo AA, Kos AO, Tomita S. Complications of ear, nose and throatforeign bodies. *Braz J Otorhinolaryngol.* 2008;74:7-15.

9. Adedeji TO, Sogebi OA, Tobih JE. Pattern of otorhinolaryngological admissions via emergency unit in a suburban tertiary center. *Int J Biomed Sci.* 2015; 11:146-51.
10. Yojana S, Mehta K, Girish M. Epidemiological Profile of Otorhinolaryngological Emergencies at a Medical College, in Rural Area of Gujarat. *Indian J Otolaryngol Head Neck Surg.* 2012; 64:218-224.
11. Sahin S, Bayındır T, Cingi C, Erdoğan N. and throat diseases: pediatric emergency admissions in two different regions of Turkey. *J Pediatr Sci.* 2013; 5:e187.
12. Adebiji WA, Olajide TG, Olajuyin OA, Olatoke F, Nwawolo CC. Pattern of presentation of ear, nose, throat, head and neck injury in a developing country. *Res J of Health Sci.* 2018; 6(1):3-12.
13. Ibekwe MU, Onotai LO, Nwosu C. Ear, nose and throat injuries in a tertiary institution in Niger delta region Nigeria. *J Med Res Prac.* 2012; 1:59-62.
14. Adebiji WA, Aremu SK, Lasisi AO. Patients Barrier to Ear, Nose and Throat Surgical Care in Nigeria. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS).* 2017; 32(1):96-104.
15. Ibekwe UM. Otorhinolaryngological emergencies in a Tertiary Hospital in Port Harcourt. *Niger J Clin Pract.* 2017; 20:606-9.
16. Khan AR, Arif S. Ear, nose and throat injuries in children. *J Ayub Med Coll Abbottabad.* 2005; 17:54-6.
17. Farneti P, Murri D, Pirodda A. Comparison of two different epidemiological profiles of otorhinolaryngology emergencies. *Braz J Otorhinolaryngol.* 2014; 80:549-50.
18. Dagan E, Wolf M, Migirov L. Why Do Geriatric Patients Attend Otolaryngology Emergency Rooms? *IMAJ.* 2012; 14:633-6.
19. Adjeso T, Damah MC, Murphy JP. Emergency Ear, nose and throat admissions in northern Ghana. *Postgraduate Medical Journal of Ghana.* 2017; 6(2):1-3.
20. Adebiji WA, Aremu SK, Olatoke F, Olajuyin AO, Ogundipe KO. Epidemiology of otitis Externa In Developing Country. *Int J Recent Sci Res.* 2017; 8(6):18023-7.
21. Adebiji WA, Olajide GT, Olajuyin OA, Olatoke F, Nwawolo CC. Pattern of Otological Injuries in Ekiti South West Nigeria. *Tropical Journal of Health Sciences.* 2018; 25(3):41-5.
22. Adebiji WA, Olajide GT, Olatoke F, Oyebanji AO, Nwawolo CC. Sociodemographic Profile and Pattern of Sinonasal Injuries at the Ekiti State University Teaching Hospital, Ado-Ekiti, South-West Nigeria. *Nigerian Journal of Family Practice.* 2018; 9(3):25-31.
23. Adebiji WA, Olajide GT, Aremu SK, Alabi SB. Barriers to Adenoid and Tonsil Surgeries in Ekiti, Nigeria. *American Journal of Medicine and Medical Sciences.* 2017; 7(12):385-92.