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Patterns of Ear, Nose and Throat Injuries in Ido Ekiti, Nigeria

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Abstract

Background/aim: Ear, nose and throat (ENT) injuries are a problem in children and adults worldwide. The aim of this study was to evaluate the patterns, etiological factors, management and outcomes of ear, nose and throat injuries in Ido Ekiti, Nigeria.

Methods: This was a prospective study of consecutive patients with Ear, Nose and Throat injuries that presented through accident and emergency (A&E) unit and were managed at our Centre between June 2011 and May 2013 (24 months period). Data collected included patients' demography; type and pattern of injuries sustained, clinical presentation, causes as well as outcome of treatment. Injuries recorded were classified based on their mechanisms into RTA, falls, assault, gunshot and burns related.

Results: Out of 473 patients seen in Accident and Emergency that had trauma during the study period, a total of 116 patients had ear, nose and throat related injury. Out of these about 94 patients (81.0%) were males and 22 (19.0%) were females giving a male: female ratio of 4.3:1. Their age ranged was from 2-71 years with a mean of 35.89 ± 17.24 SD years. The highest number of injuries occurred within the age group of 21-40 years accounting for 53.4%. Traders/Business accounted for 31.0% of the injured patients. The commonest cause of injury was road traffic accident in 84 (72.4%). Majority (59.5%), of the patients presents in the accident and emergency unit within 6 h of injury. Nasal injuries were the commonest in 53.6% patients. Traumatic epistaxis was the highest presentation in nasal injury whereas Bruises, abrasions, lacerations and cuts were major injuries to the ear. Wound debridement/suturing and dressings were the commonest treatment offered in 69.8% of the patients. No mortality related to ENT injuries was recorded.

Conclusion: Road traffic accidents (RTAs) remain the leading cause of ear, nose and throat injuries in our center. Nasal injuries were the commonest. Majority of these injuries can be prevented through health education, public enlightenment campaigns. Early presentation is recommended to reduce morbidity and mortality.

Keywords: Patterns; ENT; Injury; Ido Ekiti; Nigeria

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Introduction

Trauma remains a major health burden worldwide despite the various preventive measures that have been developed [1]. The major burden of trauma estimated at about 90% is borne by middle and low income countries [2]. Injuries to the ear, nose and throat (ENT) regions are not uncommon in clinical practice and constitute a significant cause of morbidity and mortality resulting from increased costs of care and varying degrees of physical, functional and cosmetic disfigurement [3,4]. The causes and mechanism of ENT injuries have been reported to vary with age and geographical distribution [5-9]. RTA was recorded to be the leading cause of ENT injuries in developing countries, while interpersonal violence is the leading cause in the developed

countries [6]. Injuries to the ear, nose and throat can occur as an isolated injury or may be associated with injuries in other parts of the body. Little work has been done on this subject in our local environment. This study was design to prospectively evaluate the patterns, causes, management and outcomes of trauma to ear, nose and throat regions as seen among patients presenting at the accident and emergency unit of Federal Teaching Hospital, Ido Ekiti, south west, Nigeria.

Patterns and Methods

This was a prospective study of consecutive patients with Ear, Nose and Throat injuries that presented through Accident and Emergency (A&E) unit and were managed at our Centre over a 2 years period between June 2011 and May 2013. The hospital was the only federal tertiary referral centre in Ekiti State at the time of the study. It takes care of patients living in Ekiti and also from neighboring states (Ondo, Osun, Kwara and Kogi). Data collected included patients' demography; type and pattern of injuries sustained, clinical presentation, causes, body region affected (ENT) as well as outcome of treatment. These data were collected using a well-designed data sheet before entering into the data base for analysis. Injuries recorded were classified based on their mechanisms into RTA, falls, assault, gunshot and burns related. All patients had initial resuscitative measures. Excluded from this study are patients that died before initial assessment, unconscious patients who had no relative to consent for the study on their behalf and those that had foreign body insertion/ingestion/aspiration. Ethical approval was obtained from the Ethics and Research Committee of the hospital. Informed consent was also obtained from each patient. Data were analyzed using Statistical Package for the Social Sciences (SPSS) version 17.0 for windows (SPSS, Chicago II, USA) and presented in simple tables and charts.

Results

Of 473 patients that had trauma and was seen and treated at the accident and emergency unit during the study period, 116 had ear, nose and throat related injuries. Out of these about 94 patients (81.0%) were males and 22 (19.0%) were females giving a male: female ratio of 4.3:1. Their age ranged was from 2-71 years with a mean of 35.89 ± 17.24 SD years. **Table 1** showed their demographic characteristics. The highest number of injuries occurred within the age group of 21-40 years representing 53.4% followed by age group 41-60 years, which was 17.2%. Traders were more affected accounting for 31.0%, followed by students 19.8% and artisan 13.8%. **Table 2** showed the causes and site of injury. The commonest cause of injury was road traffic accident in 84 (72.4%) patients followed by an assault in 12 (10.3%) patients, and burns injuries in 10 (8.6%) patients. Others causes of injury are gunshots and fall from a height. **Figure 1** shows the duration before presentation in A&E. Majority (59.5%), of the patients presented in the accident and emergency unit within 6 h of injury. Fifteen (12.9%) presented within 12-24 h, 14 (12.1%) in 6-12 h. However, the duration between the injury and presentation in the accident and emergency unit was not known in 13 (11.2%) cases. **Table 3** shows the type of injury sustained by our patients; Traumatic epistaxis was majorly recorded in nasal injuries, whereas bruises/abrasions and lacerations top the major injuries recorded in the ear followed by burns and tympanic membrane perforation. Their clinical presentations are shown in **Table 4**. Thirty nine patients had otalgia as a major complaint in the ear region, and 40 patients had epistaxis as a major complaint in the

Table 1 Showing demographic characteristics.

Parameter/Variable	Frequency (n)	Percentage (%)
Gender		
Male	94	81.0
Female	22	19.0
Age range (years)		
0-20	18	15.5
21-40	62	53.4
41-60	20	17.2
61-80	16	13.8
Occupation		
Civil servant	11	9.5
Artisan	16	13.8
Students	23	19.8
Trading/Business	36	31.0
Farmer	11	9.5
Commercial driver	4	3.4
Pre School child	2	1.7
Night guard	2	1.7
Motor cyclist	3	2.6
Police officer	2	1.7
Military officer	1	0.9
Retired	5	4.3

Table 2 Showing causes and site of injury in patients with ENT injury.

Causes/site	Ear		Nose		Throat		Total	
	N	%	N	%	N	%	N	%
Rta	25	(21.6)	45	(38.8)	14	(12.0)	84	(72.4)
Assault	5	(4.3)	7	(6.0)	-		12	(10.3)
Gunshot	2	(1.7)	1	(0.9)	-		3	(2.6)
Falls from a height	1	(0.9)	2	(1.7)	-		3	(2.6)
Burns	6	(5.2)	4	(3.5)	-		10	(8.6)
Others	-		3	(2.6)	2	(1.7)	4	(3.5)
Total	**39**	**(33.7)**	**61**	**(52.6)**	**16**	**(13.7)**	**116**	**(100.0)**

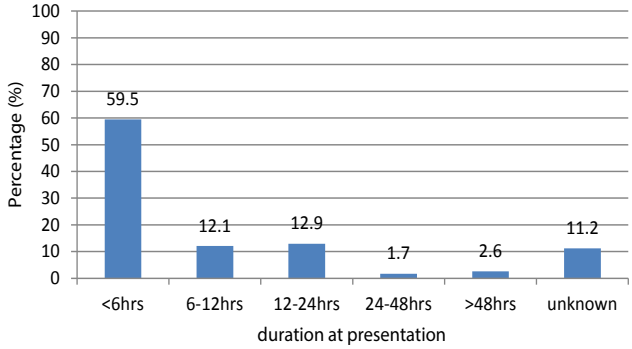

Figure 1 Showing duration during presentation.

Table 3 Showing type of ENT injury.

Ear	No. of patients	Nose	No. of patients	Throat	No. of Patients
Bruises/abrasions	19	Traumatic Epistaxis	40	Blunt trauma	8
Pinna laceration/cuts	11	Bruises/abrasions	11	Lip/tongue laceration	2
Burns	6	Burns	4	Bruises/abrasion	4
Tympanic membrane perforation	3	Fracture nasal bone	2	Palatal injury	2
		Septal haematoma	4		

Table 4 Showing clinical presentation of patients with ENT injury.

Ear	No. of patients	Nose	No. of patients	Throat	No of patients
Oltagia	39	Epistaxis	40	Odynophagia	10
Bleeding/bruises	20	Facial swelling	8	Dysphagia	4
Csf Otorrhoea	6	Nasal blockage	12	Bruises/abrasions	10
Hearing loss	10	Csf Rhinorrhoea	2		
Pinna laceration/cuts	15	Laceration/cuts/bruises	12		
Tinnitus	10				
Mucoid otorrhoea	1				

*NB
*Some patients has more than one clinical presentations/features

Table 5 Showing treatment modalities for the ENT injuries.

Nature of treatment	Frequency (n)	Percentage (%)
Wound debridement/suturing/dressings	80	68.9
Anterior nasal packing (Adrenaline/glove finger)	16	13.8
Reduction of nasal fracture	8	6.9
I&D of septal heamatoma	4	3.5
Conservative	8	6.9

nose whereas 10 patients had odynophagia as a major throat complaint. **Table 5** shows the various treatment modalities offered. Majority (68.9%) had wound debridement/suturing and dressings, 13.8% had anterior nasal packing, 6.9% of patients had reduction of their nasal fractures and conservative treatment each while 3.5% had I&D of septal heamatoma.

Discussion

Ear, nose and throat (ENT) injuries are a problem in children and adults worldwide. In this study the age range 21-40 years was mostly involved. It may not be surprising as in this age group; people are likely to exhibit more aggression and likely to engaged in risky activities which may predispose them to ENT injuries. Some authors reported age group of 1-10 years and foreign body insertion was majorly reported in their studies. Data on foreign body insertion/ingestion or aspiration is not available in this study. Our study showed that males were more affected than females. Similar observation was also reported by other authors [10-12].

The male preponderance in this study may be attributed to the overactive nature of males as compared to their female counterparts. Obuekwe et al. [13] noted that Nigerian males are usually more involved in jobs like trading or businesses that required frequent travelling by roads and also males are more likely to own a car than his female compatriot hence more prone to be involved in RTA. Trading or business was the major occupation in this study which might have subjected them to the risk of frequent travelling as noted earlier. Our study showed that road traffic accident (RTA) was a major cause of ENT injury as recorded in 72.4% of our patients followed by assault and burns. Injuries to these regions from gunshot and fall from a height were minimal. RTA was also observed by various authors as a major cause of facial trauma in the developing country [12,14,15]. There is tendency that the ear, nose and throat get involved in most of the injuries of the head and neck region because of the prominence of the face. Motor vehicles accounted for over 70% of the RTA in this study. The high rate of RTA in developing country as noted by Zargar et al. [16] are due to non-observance and lack of strict enforcement of speed limits, use of restraining seatbelts and wearing of protective crash helmets. Bad road repairs, poorly maintained vehicles with minimally safety features had also contributed immensely. In this study the nasal region recorded the highest number of injuries in 61 (53.5%) of the patients. This is in agreement with other study [8]. Afolabi et al. [17] in Ilorin reported 57.5% nasal injury from road traffic accident. The commonest nasal injury in our study was traumatic epistaxis in about 40 patients followed by bruises/abrasions, lacerations and cuts. Few patients have nasal fractures and septal hematoma. Two of our patients that had haematoma were from a blow to the face while another two was due to a fall from a height. The nose being the most prominent part of the face is prone and easily traumatized in facial injuries. In the ear region; bruises/abrasions, lacerations and cuts to the pinna was the commonest injuries recorded followed by burns and tympanic membrane perforation, and RTA was the major cause in this study as it was at variant with Matida et al. [5] who reported blows and slaps as

the commonest cause of otologic injuries. Some of the patients had multiple injuries involving more than one region. Almost 60% of our patients reported to the A&E department within 6 h after the injury. This is in contrast to other studies where they presented later than 24 h [5,8,10].

Early presentation following trauma may decrease the likelihood of death, complications as well as prolonged hospital stay. However, Synders et al. noted that the presence of associated injuries is an important determinant of the outcome of injuries including ENT patients [18]. Epistaxis was noted to be the commonest clinical presentation as a result of nasal injury; with oltagia been the major presentation in ear injuries and odynophagia was recorded in the throat related injuries as been the commonest presentation. The various treatment modalities offered to our patients were shown in **Table 5**. Wound debridement, suturing and dressings were the most common form of treatment in majority (68.9%) of our patients. Other forms of treatment offered are anterior nasal packing for epistaxis, reduction of nasal fracture and incision with drainage of septal hematoma. In our center glove finger packing is commonly done for anterior epistaxis. It is cheap, readily available, simple and easy to apply. Some of our patient especially those with Cerebro Spinal Fluid (CSF) rhinorhoea, otorrhoea and minor injuries were managed conservatively. Injections tetanus toxoids, ATS, analgesics and antibiotics were also given to all the patients that had injury. Only patients with moderate to severe injuries and those with associated and multiple injuries were admitted. It is good to mention that ear, nose and throat injuries do occur in isolation or in combination with injury in any other part of the body. The latter was not part of this study.

Few complications were noted in our study and they included facial nerve palsy, nasal deformity, tympanic membrane perforation, cauliflower ear deformity. The only patient with cauliflower ear deformity presented to us about 3 weeks after injury to his ear and was managed at another hospital. Gilyoma et al. [10] reported complications like suppurative otitis media, traumatic epistaxis and hoarseness of voice in their study. No mortality was recorded in this study as a result of isolated or ENT related injuries. Similar observation was made by Matilda et al. [5]. This might have been due to early presentation and large number of our patients with mild injuries. Gilyoma et al. [7] reported a mortality rate of 1.3%. Outcome of our patients were generally good as majority of them were treated successfully and discharged home. However, after about 3 months of follow in the clinic, one of our patients had residual facial nerve palsy; another one had persistent tympanic membrane perforation that required surgery. Those patients with nasal deformities and cauliflower ear deformity were lost to follow up. Some of the limitations to this study include exclusion of patients with associated injuries involving other part of the body.

Conclusion

This study showed that nasal injury presenting as traumatic epistaxis was the commonest injury in our patients and the most common cause of injury was road traffic accidents. Large percentage of the injuries occurred in male subjects who are in the young and active working group. We recommend public enlightenment campaigns and early presentation in order to reduce morbidity and mortality.

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