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Full Length Research Paper

Otologic injuries in Port Harcourt

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Abstract

The relevance of the ear as a sense organ cannot be overemphasized. However, this sensitive organ can easily be injured and therefore, a major source of disability that is often neglected. This study is carried out to ascertain the types of injuries to the ear, outcome and to proffer preventive measures. 5 years of retrospective review of all patients with otologic injuries seen in the ear, nose and throat department of University of Port Harcourt teaching hospital from January 2007 through January 2011. There were a total number of 244 patients with age ranging from 4months to 60years. There were 144 (59%) males and 100 (41%) females with a male: female ratio of 1.4:1.The age group 21-30 (41%) was the most involved while 51-60(1.6%) had the least injury. Blunt trauma; blows and slaps were the highest form of injury150 (61.5%) while lacerations/cuts were next with 24.6%.The least type of injury was blast and gunshot injuries with 0.8%. Hearing loss was the commonest presenting symptom while chronic otitis media was the commonest complication seen. Otologic injuries can lead to serious morbidity and sometimes to preventable disability and handicap. The young adults that represent the workforce are the population mainly affected.

Keywords: Otologic, injuries, Port Harcourt, Blunt trauma, penetrating injuries.

INTRODUCTION

The ear can be injured in several ways and like injuries in other areas can occur in all age groups. Injuries to the ear could be from blunt trauma to the pinna, lacerations and avulsion in part or whole, tympanic membrane perforation, dislocation of the ossicles, fractures of the petrous temporal bone with resultant inner ear and facial nerve damage (Afolabi and Ologe, 2002). Mechanism and causes of injuries differ in children and adults' however (Arif and Saatea, 2005 ; Sogebi et al., 2006).Trauma to the tympanic membrane and middle ear can be caused by blunt or penetrating injuries such as slap, fights, RTA, instrumentations and barotraumas (schwaber , 2003). Injuries from overpressure such as slaps, fights etc is the commonest mechanism of trauma to the tympanic membrane (da Lilly- Tariah and somefun, 2007). The types of injuries encountered commonly in our environment may differ from that in the developed countries (Mohan, 1986). In our environment, blunt traumas such as slaps and blows represent a different spectrum of injuries (Orji, 2009). Domestic violence and abuse from law enforcement agents are commonly implicated in traumatic tympanic membrane perforation (Orji, 2009; da Lilly Tariah and Somefun, 2007). It is also known that some of these injuries are avoidable cause of morbidity and disability (Arif Raza et al., 2006).

Injuries arising from foreign body insertion are commonly seen in children (Fornazieri et al., 2010). Injuries to the ear related to noise and blasts are an aspect of otologic injury that is rarely considered but is a relevant cause of morbidity and disability. The ear is the most susceptible organ to primary blast injury. Between 2% and 32% of patients injured by a blast will have tympanic membrane rupture (Wolf et al., 2009). Fireworks and firearms can raise sound pressure that can affect human ear giving inner ear damage or additional ear drum perforation and disruption of middle ear ossicular chain (van de weyer et al., 2011).

The aim of this study therefore is to review causes of otologic injuries as seen in university of Port Harcourt teaching hospital (UPTH), outcome and proffer possible preventive measures.

PATIENTS AND METHODS

This is a retrospective review of all patients with otologic injuries managed in the ear, nose and throat (ENT) surgery department of UPTH from Jan 2007 –Jan2011.

The clinic, children emergency ward, and accident and emergency records were the source of data. These

Table 1. Age distribution

Age groups	Number of patients	%
0-10	52	21.3
11-20	40	16.4
21-30	100	41.0
31-40	34	13.9
41-50	14	5.7
51-60	4	1.6
Total	244	100

Table 2. Types of injury

Types of injury	Number of patients	percentage
Blunt trauma:		
Blows/slaps	150	61.47
Blasts	2	0.81
Penetrating traumas		
Lacerations/cuts	60	24.59
Gunshots	2	0.81
Road traffic accident	10	4.09
Foreign body	20	8.19
Total	244	100

Table 3. Age distribution of injuries

Types of injury	0-10	11-20	21-30	31-40	41-50	51-60	Total
Blows/slaps	5	17	90	29	8	1	150
Lacerations/cuts	35	18	5	0	1	1	60
Road traffic accident	0	1	2	4	3	0	10
Gunshot	0	0	1	0	1	0	2
Foreign body	12	4	1	0	1	2	20
Blasts	0	0	1	1			2
Total	52	40	100	34	14	4	244

records were analyzed for age, sex, clinical presentations, treatment and outcome. Patients with foreign body insertion without any record of trauma were excluded.

RESULTS

There were a total of 244 patients. Their age ranged from 4months -60years. Males were 144(59%) and females 100(41%) representing a ratio of 1.4:1.

In terms of regions involved; the external ear and the tympanic membrane were the areas of the ear that sustained the most injury 80%, followed by the middle ear. The inner ear was the least directly injured.

The age group 21-30 years was the most involved while the group 51-60 was the least affected Table1. Blunt trauma such as blows and slaps was the highest form of injury 150(61.47%)

Distribution of injury according to age group shows that the commonest type of injury seen in age 21-30 was blows/slaps 90(60%) while in group 0-10 it was lacerations/cuts(58%) followed by foreign body Commonest presenting symptom was decreased hearing seen in 100 patients followed by otalgia in 60 patients. Otorrhoea when considered as an entity ranks second to decreased hearing; table 4.

While majority of the patients recovered fully and their ears healed spontaneously, some had complications. Chronic otitis media was the commonest complication seen in 30 patients while deafness persisted in 18 of the patients, table 5.

Table 4. Presenting complaints

Presenting symptoms	Number of patients
Otalgia	60
Otorrhoea ; bloody	50
Pus	30
Tinnitus	50
Vertigo	30
Decreased hearing	100
Laceration of the pinna	5

Table 5. Complications

Complications	Number of patients
Chronic otitis media	30
Stenosis	1
Nerve 7 palsy	1
Deafness	18
Loss of whole pinna	1
Cerebrospinal fluid rhinnorrhoea	1
Ossicular chain disruption	1
Acute otitis media	12

DISCUSSION

In this study males were more affected similar to other studies (Orji and Agu, 2005). Blows and slaps was the highest cause of otologic injuries in contrast with some other researcher`s findings of foreign body (Ijaduola and Okeowo,1986 ; Bhatia, 1989). The age range 21-30years was the most affected. Explanation could be that this is the assertive age that is more likely to be involved in scuffles (Ologe, 2002). It was however noted that injuries in the males in this group resulted from assaults from law enforcement and security agents while the females were mainly from domestic issues; they are often assaulted by their spouses in agreement with some earlier works (da Lilly Tariah and Somefun, 2007; Orji, 2009).

The age range 0-10years had lacerations and pierces more than other groups in contrast to other works where foreign body was the leading cause of injury (Biering-Sorenson, 1990; Sogebi et al., 2006). These are often self inflicted or from caregivers attempting to clean their ears inadvertently injuring them (da Lilly Tariah and Somefun, 2007).Penetrating and blunt traumas were found to account for most of the middle ear trauma seen in this study; similar to other research (Lasak et al., 2006). Such injuries are also associated with considerable morbidity.

The blast injuries recorded in this study were from thunderbolt and fireworks respectively. There were no tympanic membrane rupture however they had middle ear trauma with hearing loss persisting .The patient that was struck by thunderbolt did not present until weeks of injury hence the poor outcome(Wolf et al., 2009).

Majority of the injuries especially tympanic membrane rupture healed spontaneously, however healing was delayed in those with perforations of more than 50% and those that has had wrong intervention; instilling of topical ear drops and concoction immediately after injury (Silverstein et al.,1973; Orji and Agu, 2005).

Mucopurulent ear discharge as a presenting symptom was seen more in those that presented late or had wrong intervention which further delayed their healing process.

Chronic otitis media was the commonest complication seen followed by acute otitis media however like earlier noted, majority of the cases resolved without sequel while some were lost to follow up.

The ossicular chain disruption and cerebrospinal fluid leakage seen in this study was from severe head injury following road traffic accident in contrast to some researchers' findings (Wilcox et al., 2005; Iloreta and Malkin, 2011). This patient also had fracture of the skull base with cranial nerve seven palsy.

The ear is susceptible to avulsion injuries because of its position on the side of the head. In contrast to other researchers, the avulsion injury in this work was from road traffic accident (Nahain et al., 1978). It was a complete loss of the pinna, patient presented late and prosthesis was advised.

CONCLUSION

Otologic injuries are common. It often involves the ages that constitute the work force and the very young. These injuries are preventable, therefore, there is a need to educate the public on the dangers of simple procedures taken for granted such as cleaning the ears with q-tips. There is a need to also put in check the excesses of the law enforcement and security agents.

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