IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 17, Issue 4 Ver. 13 (April. 2018), PP 49-53
www.iosrjournals.org

"Study On Ear, Nose, Throat & Facial Injuries Following Road Traffic Accident, Attending Tripura Medical College & Dr. Bram Teaching Hospital"- A Tertiary Care Centre, North Eastern State Of India

Dr. Bidhan Das[1], Dr. Surajit Kumar Das[2], Dr. Lairenjam Alpha[3], Dr. Prabir Kumar Saha[4].

1(Assistant Professor, Department of ENT, Tripura Medical College and Dr BRAM Teaching Hospital, Hapania/ Tripura University, India.)
2(Assistant Professor, Department of Surgery,, Tripura Medical College and Dr. BRAM Teaching Hospital, Hapania/ Tripura University, India.)
3 (PGT, Final year, Department of ENT, Tripura Medical College and Dr. BRAM Teaching Hospital, Hapania/ Tripura University, India.)
4(Professor, Department of ENT, Tripura Medical College and Dr BRAM Teaching Hospital, Hapania/ Tripura University, India.)
**Corresponding Author: Dr. Surajit Kumar Das*

Abstract: *With increase in number of road traffic accidents, injury to the face and facial skeleton has become more important. A total of 100 patients with road traffic accident were included in the study attending in the Tripura medical college and Dr. BRAM Teaching Hospital during the period of June 2013 to December 2015. The median age of patients at presentations was 18 years (range 1 to 72 years). There were 80 males and 20 female with male to female ratio was 4:1in this study. Isolated ENT injuries were reported in 87.2% patients while 13.8% patients had multiple injuries. The nose was the most common body region injured accounting for 50% followed by ear (35%) and throat (15%). Nasal bleeding (50%), soft tissue injury (30%) and fracture nasal bone (20%) are the most common nasal presentation following road traffic accident. Bleeding from ear (57%), pinna injury (20%), tympanic membrane perforation (17.1%) and temporal bone fracture (2.8%) are the most common ear presentation following road traffic accident and Soft tissue injury (80%) and cut injury (20%) are the most common throat presentation.*

Keywords**:** *Road traffic accident, facial trauma, nasal bone fracture, epistaxis, reck less driving.*

Date of Submission: 09-04-2018 Date of acceptance: 24-04-2018

I. Introduction

With increase in number of road traffic accidents, injury to the face and facial skeleton has become more important. Constitute a significant cause of morbidity and mortality from increased costs of care and varying degrees of physical, functional and cosmetic disfigurement.[1,2] Studies have shown that ENT injuries are avoidable cause of death and disability.[3,4,5] The incidence of road traffic accidents (RTA) and the injuries that they may cause depends on a multitude of factors including, but not limited to, local road rules, road conditions, driver attitude and vehicle type.[6-9] The abuse of alcohol and driver fatigue play a major role in the aetiology of these incidents and are the focus of government sponsored campaigns on injury prevention.[10] The causes and mechanism of ENT injuries have been reported to vary with age and geographic distribution.[3,4,11] ENT injuries occur in all age groups; however the mechanisms and causes differ between children and adults.[3,4,12] Road traffic accident is reported to be the leading cause of ENT injuries in developing countries, while interpersonal violence is the leading cause in developed countries.[4] Head injuries are frequently associated with facial injuries.[13–15] Other common significant associations are cervical spine, orthopaedic, thoracic and abdominal injuries.[13,16] The concomitant injuries suffered in road traffic accidents demands a high level of inter-speciality cooperation and coordination when determining the appropriate treatment priorities.

Introduction of seatbelt legislation, alcohol consumption limits, and vehicle design changes including minimum safety standards.[17,18] These factors have greatly decreased both the frequency of facial injuries and the risk of road traffic accident related mortality. Auricle is very vulnerable to blunt and sharp trauma. Tympanic membrane is much more traumatized than the inner ear. Ear symptoms include Hearing loss, dizziness, CSF otorrhoea, rhinorrhea, and facial nerve injuries. Many nasal injuries are of low risk nature. The most common

nasal injuries include nose bleeds, nasal bone fracture, and deviated nasal aperture. Throat injuries include abrasions, soft tissue edema, fracture hyoid bone (rare) and injury to laryngeal framework.

In the developing countries, the morbidity and mortality associated with ENT injuries remain a significant but neglected problem. Little work has been done on this subject in our local environment despite increase in the number of admissions of this condition. This type of study was not done before in our medical college. With possible increase in trauma case, this study is therefore conducted to describe the causes, injury pattern and outcome of these injuries in our institution and proper possible preventive measures. Road traffic accidents cause severe facial injuries and are frequently associated with injuries to other organ systems. These cases are often medico-legal in nature and hence require proper documentation and reporting after careful evaluation.

II. Materials And Methods

Hundred patients (range 1 to 72 years) who presented with road traffic accident with ear, nose, throat and facial injury were enrolled in this retrospective study from June 2013-December 2015 at Dept of ENT, Tripura medical college and Dr. B.R.A.M Teaching hospital, Hapania, Agartala. All study patients were first resuscitated in the emergency department. Patients with minor injuries in the ears, nose and throat were treated as an outpatient and only patients with moderate to severe injuries and associated injuries required admission to the ENT wards after definitive treatment in theatre. Routine investigations like Blood examination, bleeding time, clotting time, chest x ray, X-ray PNS, liver function tests, kidney function tests with NCCT PNS were done in all cases of road traffic accidents. The patients were treated either conservatively or by surgically. Treat as per Soft tissue injuries/ wound, external and internal bleeding guidelines. Treatment should focus on maintaining a patent airway, breathing and circulation. Avulsed ear, locate and save avulsed part. Nasal injuries , apply cold packs to the nose, not allow patient to blow nose, instruct to avoid swallowing, suction may be required to keep airway clear and fracture nasal bone reduction. All the patients were followed up till discharged or death. This information was collected using a pre-tested questionnaire. Included in the questionnaire were socio-demographic data, mechanism of injury, pre-hospital care, injury-arrival interval, type and pattern of injury, body region injured (ENT), presence or absence of associated injuries, treatment offered, complications of treatment. Outcome variables were length of hospital stay, mortality and disability. The term disability was defined according to the World Health Organization as "any restriction or lack (resulting from any impairment) of ability to perform an activity in the manner or within the range considered normal for a human being". Data collected were analysed by using SPSS software version 22.

III. Results

A total of 100 patients were studied. The median age of patients at presentations was 18 years. There were 80 males and 20 female with male to female ratio was 4:1 with range of 1 to 72 years. The majority of patients, 70.4% came from the urban areas. The majority of injuries, 95.1% were unintentional and the remaining 4.9% injuries were intentional mainly due to assault and suicidal attempt.

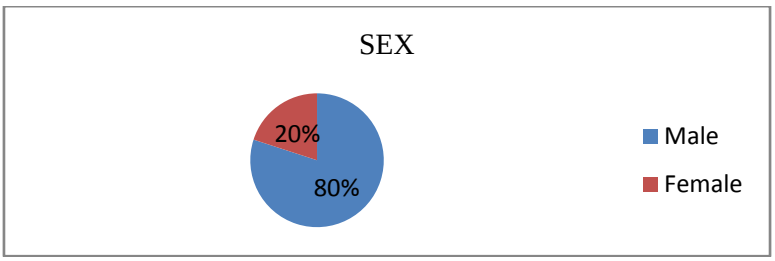

Fig:1- Pie chart showing sex wise distribution of study population.

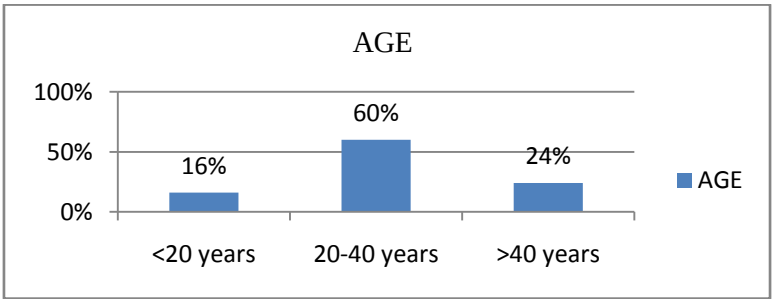

Fig: 2- Bar chart showing age group wise distribution of the study population

Table 1: Showing site of injury of the study population

Site of injury	Male	Female	Total No
Nose	43	7	50
Ear	25	10	35
Throat	12	3	15

The majority of patients, 84.6% were attended to within 1–4 hours of arrival to the Emergency department. The remaining 15.4% patients had delayed definitive treatment. Out of the 80 male patients 20 were alcoholic. Isolated ENT injuries were reported in 87.2% patients while 13.8% patients had multiple injuries. Associated injuries were reported in 11.8% patients and out of these, head and musculoskeletal injuries were the most common associated injuries accounting for 51.6% and 22.1% respectively. Other associated injuries included chest, abdominal and spinal injuries. The nose was the most common body region injured accounting for 50% followed by ear (35%) and throat (15%). Nasal bleeding (50%), soft tissue injury (30%) and fracture nasal bone (20%) are the most common nasal presentation following road traffic accident. Bleeding from ear (57%) pinna injury (20%), tympanic membrane perforation (17.1%) and temporal bone fracture (2.8%) are the most common ear presentation and soft tissue injury (80%) and cut injury (20%) are the most common throat presentation. The majority of patients (71.1%) were treated as an outpatient and only (28.9%) patients required admission to the ENT wards after definitive treatment. Surgical wound debridement were the most common treatment modalities performed in 61.9% and 16.2% of cases respectively. Associated injuries were treated accordingly. Complication rate was 14.9%. Sinusitis 10%, suppurative otitis media (4%), external deformity of ear and nose (1%) was the commonest complication.

IV. Discussion

Injuries to the ear, nose and throat regions are a common but neglected form of trauma and constitute a significant cause of morbidity and mortality worldwide.[19,20,21] In this review, ENT injuries were found to be most common in the first decade of life and tended to affect more males than females. Similar demographic observation was also reported by other authors.[19,22] This could be explained by the fact that these were the active and assertive age group that can be involved in high risk activities such as insertion/ingestion of foreign bodies, fights, climbing or jumping from heights. In our study, males were more affected than females with a male to female ratio of 4:1 and other studies shows male to female ratio is 2:1.[23,24] The reasons for the male preponderance in our series may be attributed to the overactive nature of males as compared to their female counterparts. Most of the patients in the present study came from the urban areas Similar observation was also reported by Aremu et al,[19] but at variant with Singhet al.[20] who reported that most of patients were from rural areas. The reason for high number of patients from urban areas in our study may be attributed to the fact that our hospital is located in the urban area. The lack of advanced pre-hospital care in our environment coupled with ineffective ambulance system for transportation of patients to hospitals are a major challenges in providing care for trauma patients including ENT trauma. More than 82.7% of patients reported to the emergency department later than 24 hours after injury which is in keeping with other study done elsewhere.[24,25] Late presentation in the present study may be attributed to delay in referral from private and public clinics, dispensaries and health centers, self-treatment at home, consultation with traditional healers and transport costs. Delayed presentation following trauma increases the likelihood of death, complications as well as prolonged hospital stay. In agreement with Arif & Saatea[24] report, nasal trauma was the commonest type of injury. In other studies[22,25] the ear was the most common body region injured. In this study, clinical presentations did not differ significantly from other studies.[22,25] ENT injuries are commonly associated with other injuries and these may complicate the management and affect the outcome.[19,26] Early recognition and treatment of associated injuries is important in order to reduce mortality and morbidity associated with ENT injuries. In this study, minor ENT injuries were treated as outpatients and only 28.9% of patients required admission to the ENT wards after definitive treatment. Surgical wound debridement were the most common treatment modalities performed. The reasons for the low rate of ENT admissions in this study may be attributed to the fact that the majority of our patients presented with minor injuries that did not require admission following definitive treatment. Only patients with moderate to severe injuries and those with associated and multiple injuries were admitted. The presence of complications has an impact on the final outcome of patients presenting with ENT injuries as supported by the present study. The pattern of complications in the present study is similar to what was reported by others.[25,24,26] In our study, sinusitis was the commonest complication in the nose while suppurative otitis media and soft tissue injury were the commonest complications in the ear and throat respectively. Prolonged hospitalization is associated with an

unacceptable burden on resources for health and undermines the productive capacity of the population through time lost during hospitalization and disability.[27] No mortality related to isolated ENT injuries in the present study. Matilda et al.[25] reported no mortality in their series. This low mortality rate in our study may be attributed to the large number of patients with mild injuries. Generally, the outcome of patients in this study was satisfactory as more than 97 percent of patients were treated successively and discharge well with no permanent disabilities.

V. Conclusions

Injuries to the ear, nose and throat constitute a major cause of ENT admissions in this environment. . The severity of facial injuries due to road trauma is frequently greater than lower velocity mechanisms of injury. In addition they may suffer injuries to multiple organ systems particularly orthopaedic, neurologic, abdominal and thoracic. The young adults that represent the workforce are the population mainly affected. Most of patients in our local setting present late with increased risk of complications. The management of the multiply injured patient requires close interaction between various specialities and communication is essential to provide optimal management. Majority of these injuries can be prevented through public enlightenment campaigns. Early recognition and treatment of ENT injuries is important in order to reduce mortality and morbidity associated with these injuries. The limitations of retrospective studies prevent comment on the exact problems in inter speciality coordination though it is suspected that poor communication and low perception of maxillofacial injury severity occur.

References

[1]. Aremu SK, Alabi BS, Segun-Busari SW, Omotoso SW: Audit of Pediatric ENT Injuries. Int J Biomed Sci. 2011, 7: 218-221.
[2]. Singh I, Gathwala G, Gathwala L, Yadav SPS, Wig U: Ear, Nose and Throat injuries in children. Pak J Otolaryngol. 1993, 9: 133-135.
[3]. Matilda I, Lucky O, Chibuike N: Ear, nose and throat injuries in a tertiary institution in Niger delta region Nigeria. J Med Res Prac. 2012, 1: 59-62.
[4]. Arif RK, Naseem U, Inayat U, Shah ED, Noor SK: Causes and complications of ear, nose and throat injuries in children. A study of 80 cases. J Med Sc. 2006, 14 (1): 57-59.
[5]. Sogebi OA, Olaosun AO, Tobih JE, Adedeji TO, Adebola SO: Pattern of ear, nose and throat injuries in children at Ladoke Akintola.
[6]. The pattern of maxillofacial fractures in Kaduna, Nigeria. British Journal of Oral and Maxillofacial Surgery, 41 (6) (2003), pp. 396-400
[7]. A.O. Fasola, J.O. Lawoyin, A.E. Obiechina, J.T. Arotiba. Inner city maxillofacial fractures due to road traffic accidents. Dental Traumatology, 19 (1) (2003), pp. 2-5.
[8]. G. Klenk, A. Kovacs. Etiology and patterns of facial fractures in the United Arab Emirates. Journal of Craniofacial Surgery, 14 (1) (2003), pp. 78-84.
[9]. R. Mayou, B. Bryant. Consequences of road traffic accidents for different types of road user. Injury, 34 (3) (2003), pp. 197-202.
[10]. I.L. Hutchison, P. Magennis, J.P. Shepherd, A.E. Brown. The BAOMS United Kingdom survey of facial injuries part 1: aetiology and the association with alcohol consumption. British Association of Oral and Maxillofacial Surgeons. British Journal of Oral and Maxillofacial Surgery, 36 (1) (1998), pp. 3-13
[11]. Gilyoma JM, Chalya PL: Endoscopic procedures for removal of foreign bodies of the aerodigestive tract: The Bugando Medical Centre experience. BMC Ear, Nose Throat Disorders. 2011, 11: 2-10.1186/1472-6815-11-2.
[12]. Arif RK, Saatea A: Ear, nose and throat injuries in children. Ayub med Coll Abbottabad. 2005, 17: 54-56.
[13]. Alvi, T. Doherty, G. LewenFacial fractures and concomitant injuries in trauma patients. The Laryngoscope, 113 (1) (2003), pp. 102-106.
[14]. M. Hohlrieder, J. Hinterhoelzl, H. Ulmer, W. Hackl, E. Schmutzhard, R. GassnerMaxillofacial fractures masking traumatic intracranial haemorrhages. International Journal of Oral and Maxillofacial Surgery, 33 (4) (2004), pp. 389-395.
[15]. B.J. Touma, H.H. Ramadan, J.J. Bringman, S. RodmanMaxillofacial injuries caused by all-terrain vehicle accident. Otolaryngology, Head and Neck Surgery, 121 (6) (1999), pp. 736-739.
[16]. Z. Lalani, K.M. BonanthayaCervical spine injury in maxillofacial trauma. British Journal of Oral and Maxillofacial Surgery, 35 (4) (1997), pp. 243-245.
[17]. P. Magennis, J. Shepherd, I. Hutchison, A. BrownTrends in facial injury. British Medical Journal, 316 (7128) (1998), pp. 325-326.
[18]. M.R. Telfer, G.M. Jones, J.P. ShepherdTrends in the aetiology of maxillofacial fractures in the United Kingdom (1977–1987). British Journal of Oral and Maxillofacial Surgery, 29 (4) (1991), pp. 250-255.
[19]. Aremu SK, Alabi BS, Segun-Busari SW, Omotoso SW: Audit of Pediatric ENT Injuries. Int J Biomed Sci. 2011, 7: 218-221.
[20]. Singh I, Gathwala G, Gathwala L, Yadav SPS, Wig U: Ear, Nose and Throat injuries in children. Pak J Otolaryngol. 1993, 9: 133-135.
[21]. Gilyoma JM, Chalya PL: Endoscopic procedures for removal of foreign bodies of the aerodigestive tract: The Bugando Medical Centre experience. BMC Ear, Nose Throat Disorders. 2011, 11: 2-10.1186/1472-6815-11-2.
[22]. Sogebi OA, Olaosun AO, Tobih JE, Adedeji TO, Adebola SO: Pattern of ear, nose and throat injuries in children at Ladoke Akintola University of technology teaching hospital, Osogbo, Nigeria. Afric J. Pediatr Surg. 2006, 3: 61-63.
[23]. Endican S, Garap JP, Dubey SP: Ear, nose and throat foreign body in Melanesian children: an analysis of 1037 cases. Int J Pediatr Otorhinolaryngol. 2006, 70: 1539-1545.
[24]. Arif RK, Saatea A: Ear, nose and throat injuries in children. Ayub med Coll Abbottabad. 2005, 17: 54-56.
[25]. Matilda I, Lucky O, Chibuike N: Ear, nose and throat injuries in a tertiary institution in Niger delta region Nigeria. J Med Res Prac. 2012, 1: 59-62.
[26]. Figueriedo RR, Azevedo AA, Kos AO, Tomita S: Complications of Ear, nose and throat foreign bodies. Braz J Otorhinolaryngol. 2008, 74: 7-15.
[27]. Kang EG, Sharma GK, Lozano R: The global burden of injuries. Am J Public Health. 2000, 90: 523-526.

Picture1: Showing pinna injury

Picture2: Showing nose injury

Dr. Bidhan Das." "Study On Ear, Nose, Throat & Facial Injuries Following Road Traffic Accident, Attending Tripura Medical College & Dr. Bram Teaching Hospital"- A Tertiary Care Centre, North Eastern State Of India."IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 4, 2018, pp 49-53.