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Original Research Article

The alcoholic individual and facial trauma: a 3 years survey

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ABSTRACT

Background: Road traffic accidents, under the influence of alcohol constitute a majority of patients in the emergency trauma services in tertiary health care facilities. The incidence of the same and the region predominantly involved was analysed.
Methods: 61 subjects in the Otorhinolaryngology and Maxillofacial trauma services were studied, during a period of 2 years, at Dayanand medical college, Ludhiana, Punjab. In this prospective study the admission records were analysed in context to alcohol intake prior to the trauma.
Results: The incidence of facial fractures, attributed to road-side accidents was the highest i.e. 72%. Other antecedent events were, assaults in 15%, fall from heights in 8% and due to sport injuries in 3.2%. 34% of our patients were under the influence of alcohol at the time of injury. Incidence of facial fracture in our series were fracture mandible, 39.3%, zygomatic 23.5%, Le Fort II 17.9% and nasoethmoid 12.3%. One case of Le Fort I, orbital and alveolar fracture was seen.
Conclusions: Drunken driving in Punjab was behind one third i.e. 34% of the trauma patients in our casualty services.

INTRODUCTION

Maneuvering a two or four-wheeler requires excellent hand-eye-foot coordination. This further is controlled by the cerebral cortex and fine reflexes initiated at the brain stem. Maran et al 1988 emphasized that the four main causes of nasal trauma to be personal assaults, sports injuries, personal accidents and road traffic accidents.[1]

Alcohol effects the arousal of the cerebral cortex and also reduces the reflexes. This affects the fine control of the vehicle and makes one vulnerable to collision or off roading. The vertical buttresses nasomaxillary, zygomatomaxillary and pterygomaxillary and the mandible are likely to give away in isolation or in association.

Therapeutic modality carries a statistically significant association with outcome, social variables; including gender, tobacco use, intoxication, and low socioeconomic status, produce dramatic worsening of both injury incidence and outcome.[2]

Aim of the study

Aim of the study was to study the incidence of facial fractures in alcoholics and the predominant site of facial fracture.

METHODS

A prospective study of 61 subjects admitted in the Otorhinolaryngology and Maxillofacial trauma services was undertaken, during a period of 2 years (June 2008 to June 2010), at Dayanand Medical College, Ludhiana,

Punjab. The patients were analysed, with respect to: type of trauma, relation of alcohol intake to injury and type of facial fractures

Inclusion criteria

Patients with facial trauma were included in the study.

Exclusion criteria

Patients who were declared dead on admission (DOA) patients.

Statistical analysis

All statistical calculations were done using Statistical package of social sciences (SPSS) 17 version statistical program for Microsoft windows (SPSS Inc. released 2008. SPSS statistic for windows, version 17.0, Chicago). Ethical approval of the study was taken from the Institutional ethics committee.

RESULTS

The under mentioned observations were recorded in the patients.

Table 1: Aetiology of trauma (n=61).

Aetiology	Total	Males (%)	Females (%)	%
Road-side accidents	44	37 (60.6)	7 (11.4)	72.13
Assaults	9	7 (11.4)	2 (3.2)	14.75
Falls	5	4 (6.5)	1 (1.6)	8.19
Sports	2	2 (3.2)	-	3.2
Miscellaneous	1	1 (1.6)	-	1.6
Total	61	51	10	

Table 2: Relation of alcohol intake to injury (n=61).

Aetiology	Total	Alcohol consumed	Percentage
Roadside accidents	44	18	29.5
Assault	9	2	3.2
Falls	5	1	1.6
Sports	2	-	-
Others	1	-	-
Total	61	21	34.4

The commonest cause of fractures were road-side accidents which were observed in 44 patients (72.13%). In 9 patients (14.75 %), these were due to assaults, in 5 (8.19%) due to falls and only in 2 (3.2%) due to sport injuries. A little over one-third 21 patients (34.4%) were under the influence of alcohol at that the time of the accident. Out of 61 patients, 17 patients had more than one fracture so the total number of fractures available for management was 89. The commonest involvement was of mandible in 39% of fractures. The next in frequency was zygomatic in 22.4%. Nasoethmoid fractures constituted 12.3% and Le Fort II 17.9%. Le Fort I, orbital and alveolar fracture was seen in one each.

Table 3: Type of fractures (n=89).

Type of fracture	Total	Males	Females	%
Alveolar	1	1	-	1.1
Le Fort I	1	1	-	1.1
Le Fort II	16	13	3	17.9
Le Fort III	3	3	-	3.3
Orbital floor	1	1	-	1.1
Zygomatic	21	17	4	22.4
Mandibular	35	28	7	39.3
Nasoethmoid	11	9	2	12.3
Total	89	73	16	-

DISCUSSION

Maran 1988 emphasised the four main causes of nasal trauma to be personal assaults, sports injuries, personal accidents and road traffic accidents.[1]

Greene et al 1997 observed that men were more likely to be involved in an altercation, attacked with a weapon and admitted with a fracture. In his study of 802 patients admitted with blunt assault facial injury, 85% had fractures and this included 46% who suffered multiple fractures.[2]

According to Greene al 1997, alcohol and tobacco use was similar for both genders. However, men were significantly more likely to be intoxicated (28.2%) at the time of injury than women (1.5%). Intoxication at the time of injury correlated with loss of consciousness and presence of an associated injury. They did not find any association between intoxication and complication rate, number of fractures per case, duration of hospitalization or need for external fixation.[2]

Punjab being a state where land disputes are very common and since these are mainly male dominated, the males are more commonly involved. The lower incidence in females is related to their less outdoor activity and less physical assaults among them (their assaults are more verbal). Most of the activities associated with trauma like driving, assaults and sports are male dominated in our society.

Almost one third (34.4%) of our patients were under the influence of alcohol at the time of sustaining facial trauma. Similar figures of 28-49% are reported by Voss 1980, though higher figures of 50% and 70% have been reported by Edgerton 1952 and Mayell 1973 respectively.[8,3,5] Green et al 1997 reported that 28.2% of male victims were intoxicated at the scene compared with 1.5% females.[2]

Facial fractures are exceedingly common, and fractures of the mandible are the most common facial fracture. Over

the past two decades a changing trend in the aetiology of these fractures has been apparent, with a decline in the percentage resulting from motor vehicle trauma, and an increase in the percentage resulting from assaults. A 3 years prospective study of 324 patients presenting to the Royal Adelaide Hospital with mandibular fractures was conducted, and the patient groups, influence of alcohol, aetiology and type of fracture was documented.[10]

The Carvalho et al study reported that most patients are young adult males with a male: female ratio of 4:1. Interpersonal violence is the most prevalent cause of facial trauma (27.9%), followed by motor vehicle accidents (16.6%). The mandible is the most prevalent facial bone fractured (44.2%), followed by nasal fracture (18.9%). 41.1% were under influence of alcohol with a male: female ratio of 11.2:1. Seventy-seven percent of the patients required surgical intervention and 84.5% were hospitalized.[12]

Nakhgevany et al, 185 patient analyses reported 78% with major soft tissue injury and 22% with facial bone fractures. 18% with facial trauma were wearing seat belts compared with 33% without facial trauma who were wearing seat belts at the time of the accident. 24% without facial trauma and 51% with facial trauma tested positive for alcohol or drugs. Blood alcohol levels were usually more than 100 mg/dL. Head injuries and blunt chest trauma were commonly associated injuries in these patients. This study suggests that use of alcohol and drugs in occupants of the motor vehicle had a major effect on the aetiology of facial trauma. Also it supports the use of seat belts that prevents a wide range of injuries including facial trauma.[13]

In the over 15 age group, alcohol consumption is associated with 90% of facial injuries occurring in bars, 45% on the street, and 25% at home. Assault, road traffic accidents and alcohol consumption convey an increased risk of serious facial injury.[14]

There is a high prevalence of surgical facial fractures in male patients between 20 and 30 years of age, caused by motorcycle accidents, and that there is a strong association between the consumption of alcohol, failure to wear a helmet, and the presence of surgical facial multiple fractures.[15]

CONCLUSION

Road side motor vehicular trauma due to driving under alcohol intoxication in Punjab is behind one third i.e. 34 % of facial trauma patients in our casualty services. This highlights the necessity of stringent implementation of checks on driving in inebriated states.

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