Road Traffic Accidents: Site Of Fracture Of The Mandible

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Citation

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Abstract

The incidence of maxillofacial trauma is constantly increasing with modernization of the society and the preference for high speed. This is a retrospective study done to determine of mandible fractures due to Road traffic accident. The study is based on the history recorded from case files of patients who reported to Dept. of Oral and Maxillofacial surgery in Govt. Dental College; Post Graduate Institute of Medical Science, Rohtak (India). Our study indicates that incidence of mandible fractures is common in age group in 21–30 years, canine is more affected and usual method of treatment is closed reduction.

INTRODUCTION

Road traffic accidents are defined as an unforeseen occurrence specially one of an injurious character.[1] The mandible fractures used to be more common than middle third Facial injuries. Schuchardt et al (1966)[2] found that the mandible was fractured wither alone or in combination in no less than 2103 out of 2901 facial bone injuries. Oikarinen and Lindqvist (1975)[3] studied 729 patients with multiple injuries & unstained in traffic accidents; 11% of the patients had fracture of facial bones. The most common facial fractures were in mandible (61%), followed by the maxilla (46%), the zygoma (27%) and the nasal bones (19.5%). Book and wood (1983)[4] has examined this trend over four decades in retrospective study. During this period personal assaults increased by 75% and fractures of the Zygoma become more common than fractures of the mandible, facts which may well be related. Although fracture of the mandible condyle is the commonest site for mandible fracture, the angle fracture is the frequent site when only one fracture is present Halazonetis (1968)[5] Ellis, Moos and EI Attar (1985)[6]. Among patients sustaining general injury as a result of personal assault, shepherd et al (1990)[7] found that 83% of all fractures and 68% of all lacerations were facial.

The pattern of Road traffic accidents (RTA) and types of mandible fractures are quite different in developed sand undeveloped countries.

The objective of this study is to find out the pattern of mandible fracture due to RTA, their age, sex and site wise distribution. An important factor considered in the study was preferred choice treatment in terms of inter maxillary fixation and bone plating.

MATERIAL AND METHODS

This is a retrospective study of the patients who reported to Govt. Dental college; Pt. B.D. Sharma, Post Graduate Institutes of Medical Science, Rohtak (Haryana) with cranio maxilofacial injuries in the Department of Oral and Maxillofacial surgery from 2002 to 10 Oct. 2005 (M: F: 102:12). In this study details of history of road traffic accident include mode of trauma, clinical examination, investigation and treatment given were recorded from case files.

RESULTS

Figure 1

Table 1 : Age and sex distribution of fractures of mandible

Sr. No.	Age group	Male	Female
1	0–10	4	0
2	11–20	15	2
3	21–30	62	5
4	31–40	16	2
5	41–50	7	1
6	51–60	5	1
7	61–70	3	0

Figure 2

Table 2: Fracture site and number of cases

Sr. No.	Fracture Site	No. Of case (In percentage)
1	Dento alvelor Region	7
2	Symphysis region	6
3	Canine Region	46
4	Body (excluding symphaysis and canine region)	6
5	Angle	18
6	Ramus	3
7	Condyle (sub–condylar region)	12
8	Coroniod region	2

Figure 3

Table 3: Incidence of Bilateral fracture in mandible

Sr. No.	Fractures Sites	No. Of Cases(in Percentage)
1	Bilateral canine region	2
2	Angle and canine region(opposite site)	8
3	Angle and sub condylar region	3
4	Bilateral sub condylar fracture.	5

Figure 4

Table 4 : Treatment modalities

Sr. No.	Method	No. of Cases(%)
1	Open reduction (A) Bone plating (B) Interosseous wiring	 17% 5%
2	Closed reduction Intermaxillarf friction Brach wires etc.	78%

DISCUSSION

Van hoof et al (1977)$_8$ analyzed the differing patterns of fracture of the facial skeleton in four European countries and observed considerable variation in the experience of the treatment centers from which they collected statistics. Injuries caused by fights were commoner in German Urban areas than a unit in Holland, where as the latter center experienced a much higher incidence of road traffic trauma. In developing countries with a rapid increase in road traffic, motor vehicle trauma is the major cause of fractures (Adekeye, 1980)$_9$.> Sandhu et al (1981)$_{10}$ found that the fracture of mandible was commonest (64.37%) followed by maxilla (21.84%), malar bone 5.75%, Nasal bone 4.59%, and Zygomatic arch 3.45%. Oikarinen and linqvist (1975)$_3$ studied 729 patients with multiple injuries sustained in traffic accident, 11% of patients had fractures of facial bones. The most common facial fractures were in mandible (61%) followed by the maxilla (46%), the Zygoma (27%) and the nasal bone (19.5%). Peter Banks (1988)$_{11}$ has emphasized the relative importance of various factors which effect the incidence of mandibular fracture and they are geography, Social trends, road traffic legislation and seasons.

In this study it was observed that the maximum number of patients (58%) with mandible fracture were in the age group of 21 to 30 years. The results are in accordance with the results of Heimdhal (1973)$_{12}$ Schinder (1975)$_{13}$, Gayatrimalik & Sharma (2000)$_{14}$ and S.S. Ahmed et al (2003).$_{11}$ It was also found that out of 114 patients, 102 patients were male and 12 patients were female as previous studies by Row and Killey (1952)$_{15}$, Turey (1977),$_{16}$ Sandhu (1981)$_{10}$.Oikarinen and Mal mstrom (1969)$_{17}$ analyzed 600 mandibular fractures by taking tracings from orthopantomographs. On analysis it was found that 33.4% of fractures took place in the subcondylar area, 17.4% at the angle; 6.7% alveolar, 5.4% ramus, 2.9% in midline and 1.3% in the coronoid process, while 33.6% occurred in the body of the mandible mostly in canine region. While in current study found that 46% canine region, 18% angle, 12% condyle, 7% dentoalvelor, 6% symphysis region, 6% Body, 3% Ramus and 2% Coronod region mandible fractures in road traffic accident. The study reveals that the closed reduction is a common method (78%) and 22% open reduction for management of facial fractures as previous study$_{10}$.

CONCLUSION

The canine region is the most commonly fractured mandible bone accounting for (46%) and the 21–30 age group is the most affected.

Male and female ratio of patients with mandible fractures during road traffic accident was 11:1.

Closed reduction was most common method of treatment.

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