



Retrospective Study of Maxillofacial Injuries in Patients Managed at Sms Hospital Jaipur

KEYWORDS

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ABSTRACT

Introduction: Oral and maxillofacial injuries have been shown worldwide to be a major cause of disability and orofacial deformity. The magnitude and causes of oral and maxillofacial injuries varies from one country to another or even within the same country depending on prevailing conditions such as socioeconomic, cultural and environmental factors.

Patients and methods: retrospective study of 729 patients with maxillofacial injuries of various etiologies that were treated at the SMS Hospital, Jaipur from November 2013 to February 2015.

Results : Males outnumbered females by a ratio of 14:1. The most common age group affected was 21-30 years (42.5%). Most injuries were caused by road traffic accidents(91.2%), followed by falls and assaults in 4.1% and 3.5% respectively. The commonest bones fractured were zygoma (46.2%). Among fractures of mandible parasymphysis was most commonly fractured (39.1%).

Conclusion: Road Traffic Accident accounted for most of the injuries in the study population. Prevention strategies of maxillofacial injuries among others should emphasize on reduction of road traffic accidents with particular attention to motorcycle and motor vehicle accidents.

INTRODUCTION

Oral and maxillofacial injuries refer to injuries of the orofacial soft tissues, facial skeleton, teeth and associated specialized soft tissues within the head and neck region as a result of wounding or external violence. These injuries can lead to orofacial deformity and malfunction greatly diminishing quality of life and worker productivity. [1]The etiology of maxillofacial injuries varies from one country to another and even within the same country depending on the prevailing socioeconomic, cultural and environmental factors [2,3,4]The severity and pattern of the fracture will depend on the magnitude of the causative force, impact duration, the acceleration imparted by it to the part of the body struck and the rate of acceleration change. The surface area on which the impact strikes is also relevant.[5]The aim of the present study is to analyze retrospectively the age and sex distribution, aetiology and location of maxillofacial fractures in a sample of patients visited in sms hospital, Jaipur (Rajasthan) between november 2013 to january 2015.

MATERIAL AND METHODS

We conducted a retrospective study of patients with maxillofacial injuries presented in the emergency or out-patient department of the SMS Hospital, Jaipur (Rajasthan) and treated in department of plastic surgery over a period of 15 months between november 2013 and january 2015. A total of 729 patients were included in the study. This data was analyzed for age, gender, mode of injury, types and sites of fracture and treatment provided. The diagnosis of a fracture was

based on the history, signs and symptoms, clinical examination and findings of the CT scan of face with 3D reconstruction in all cases. The pattern of facial fractures was determined according to the fractures of mandible, and mid face in relation to the different etiological factors. For this study, the mandible was divided into condylar, coronoid, angle, body, symphyseal, and Dentoalveolar regions. In the middle-third of the face, fractures were recorded as Le Fort, I, II, and III types, zygomatic bones, nasal bones, naso-orbito-ethmoidal complex, and palatal fractures Etiological factors were classified as road traffic accidents, fall from height and assault and other injuries (sports, animal attack). Soft tissue lacerations were not recorded as associated injuries.

RESULTS

From november 2013 to january 2015, a total of 729 patients were included in this study. 681 (93.4%) patients were males and 48 were females (6.6%) with a male to female ratio of 14:1 (figure 1). Their ages ranged from 4 to 62 years with an average of 27.89 years. Most common age group for maxillofacial injuries was 21-30 years (42.5%, n = 311). Road traffic accidents were the most common cause of the maxillofacial injuries accounting for 91.2% (n = 665) of all injuries. Out of these, 646 (88.6%) injuries were found in two-wheeler riders and rest of the patients (2.6%, n = 19) were travelling in four-wheeler. Among the 0-10 year age group fall from height was the most common cause of maxillofacial injuries (n = 12, 66.6%) (figure 2).

Figure1: Gender distribution of patients

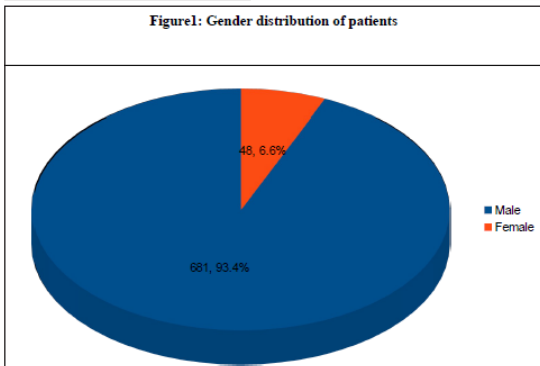


Figure2 : Age distribution of the amxillo-facial injuries

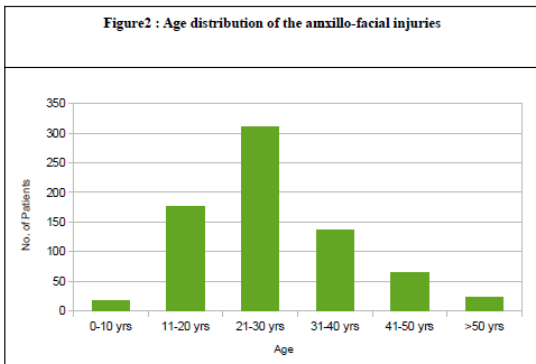
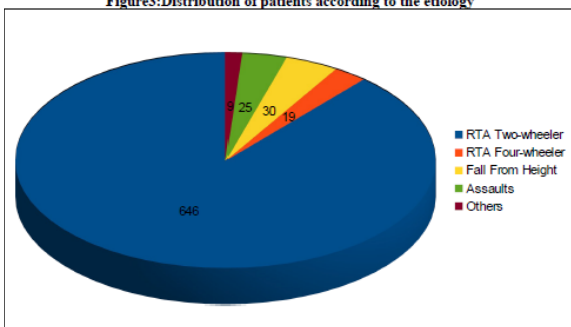


TABLE 1 : Distribution of patients according to the etiology

S. No.	Etiology	No. of Patients	Percentage (%)
1.	Road traffic accidents (Two-wheeler)	646	88.6
2.	Road traffic accidents (Four-wheelers)	19	2.6
3.	Fall from height	30	4.1
4.	Assaults	25	3.5
5.	Others (Sports injuries, Animal rage)	9	1.2

Figure3:Distribution of patients according to the etiology



42.6% (n = 311) of the cases had isolated mid-face fracture where as 34.7%(n = 253) had isolated mandibular fractures and 22.7% (n = 165) had combined injuries. In mandibular fractures data shows parasymphysis area were the most common site for fracture (39.1%) followed by the mandibular condyle (21.3%).In this study total 911 mid face fractures in 476 patients were analyzed. In the middle third of facial skeleton zygoma fracture was most common (46.21%)

followed with Lefort I fractures (26.27%)

TABLE 2: Distribution of patients according to the pattern of mandibular fractures

S. No.	Pattern of fracture in mandible	No. of fractures	Percentage
1.	Symphysis	106	17.2%
2.	Parasymphysis	241	39.1%
3.	Body	44	7.1%
4.	Angle	94	15.3%
5.	Condyle	131	21.3%
Total no. of Mandibular fractures		616	

TABLE 3: Distribution of patients according to the pattern of Midface fractures

S. No.	Pattern of fracture in midface	No. of fractures	Percentage
1.	Le Forte I	239	26.2%
2.	Le Forte II	94	10.3%
3.	Le Forte III	28	3.1%
4.	Zygoma	421	46.2%
5.	NOE complex	83	9.1%
6.	Palatal Split	46	5.1%
Total no. of Mid-face fractures		911	

DISCUSSION

Multiple studies has been conducted before to determine the various demographic and etiological factors affecting the maxillofacial injuries in the different parts of the world. Long-term collection and analysis of epidemiologic data regarding facial fractures in severely injured patients is an important step in the evaluation of conventional preventative measures. [6] It is also necessary to determine trends to help guide the development of new methods of injury prevention. [6] In the present study we found that males are more commonly affected than female (14:1)which is consistent with the other studies.Males are at greater risk due to their greater participation in high risk activities which increases their exposure to risk factors such as driving vehicles, sports that involve physical contact, an active social life and drug use, including alcohol.

The pattern of age distribution in maxillofacial injuries reflected that no age was exempted for these injuries but the most common age group affected was 21-30 years. This finding is in accordance with a number of previous studies conducted elsewhere in the world. [7,8,9,10]. The possible reasons for the higher frequency of maxillofacial injuries in third decade may be attributed to the fact that people in this period of life are more active regarding sports, fights, violent activities, industry and high speed transportation. The low frequencies in the very young and old age groups are due to the low activities of these age groups.

Road traffic accidents are the main cause of maxillofacial trauma. The reasons for higher frequency of RTA in developing countries are inadequate road safety awareness, unsuitable road conditions without expansion of the motorway network, violation of speed limit, old vehicles without safety features, not wearing seat belts or helmets, violation of highway code and use of alcohol or other intoxicating agents.[11] Two wheelers were responsible for the majority of road

traffic accidents probably because two wheelers are very popular as a mode of transport due to their fuel efficien-

cy and ease of use in congested traffic [12] Midface fractures (59.66%) contributed for highest number of fractures due to Road Traffic Accidents followed by mandibular fractures (40.34%) in our study. This finding is in contrast with the other studies conducted in india by Rajanikanth K [13] Lida et al. [14] in Japan, Motamedi [15] in Iran, and of Erol et al. [16] in Turkey which shows the higher number of mandibular fractures than the midface fractures. Among the fractures involving the middle third of the face the zygomatic complex bone was most commonly involved. Because of its prominent position, it is frequently fractured either alone or in combination with other bony structures such as the maxilla or nasal complex. [17] In this study, among the mandibular fracture sites, parasymphysis (39.1%) was the most common fracture site followed by the condyle (21.3%).

CONCLUSION

The results of present study demonstrated that road traffic accidents are the main causative factor for occurrence of maxillofacial injuries and young adult males were mostly affected. Fall was the commonest cause in the 0-10 years age group. Zygoma was the most common bone to be fractured followed by the mandibular parasymphysis. The understanding of the epidemiology of maxillo-facial injuries is useful not only for developing prevention strategies but also for decisions with regard to patient care, development of optimal treatment regimens and appropriate resource allocation. Furthermore, treatment evaluation and complication rate analysis permits a more realistic interpretation of how patients should be managed. Preventive strategies of oral and maxillofacial injuries among others should emphasize on reduction of road traffic accidents particularly motorcycle and motor vehicle accidents through intentional reinforcement of strategies for implementation of road safety rules by traffic police. To reduce the incidence of RTA, the laws regarding the precautions like seat belts, helmets, speed limits and traffic rules must be observed strictly. An awareness campaign to educate the public especially the drivers about the importance of restraints and protective measures in motor vehicles should be started.

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