MAXILLOFACIAL FRACTURES: ANALYSIS OF DEMOGRAPHIC DISTRIBUTION IN 320 PATIENTS

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ABSTRACT

The descriptive study was undertaken to analyze the demographic distribution of maxillofacial fractures in 320 patients reported to the department of Oral & Maxillofacial Surgery, Montmorency College of Dentistry, Punjab Dental Hospital, Lahore from June 2001 to Dec 2002. A review of patients records and radiographs was conducted. Data regarding age, gender and cause of fracture were reviewed. The age range was 2-76 years (mean 25 yrs) with peak frequency occurring in age group 21-30 yrs. The male to female ratio was 5.4:1. The study indicated that 64.7% (n=206) resulted from road traffic accidents (RTAs) followed by fall (n=60; 18.8%), assault (n=26; 8.1%), sports (n=17; 5.3%), firearm injury [FM (n=3; 0.9%)], industrial trauma (n=2; 0.6%) while 5 cases (1.65%) were associated with other causes such as bomb blast, animal injury etc. This study can provide a guide to the design of programs geared toward prevention and treatment.

Key words: Trauma, facial fractures, etiology, road traffic accidents.

INTRODUCTION

The face, as most exposed part of the body, is particularly vulnerable to trauma.1 The main causes world wide are road traffic accidents, falls, assaults, sports, fire arm injuries and industrial trauma.2,3 Clearly the etiology would be expected to influence the degree and type of injury sustained.4 Data collected from 1960s and early 1970s have indicated that 20%-60% of all people injured in R.T.As has some degree of maxillofacial injury.5 A high incidence of maxillofacial injuries due to R.T.As is reported in developing nations6,7, while incidence due to personal violence is more in developed countries.8,9 Introduction of compulsory seat belts and drink-drive legislation10,11 have significantly reduced both the number and severity of injuries sustained following road traffic accidents by 25%, and the more serious facial injuries reduced in severity by two-third.12 It is found that falls were the 2nd most common cause after assault though it is recognized that many patients who have assaulted reported that their injuries were due to falls.4 The constant improvement in the quality of individual life and growing interest in sporting activities have resulted in an increased use of sport in free time at amateur level. As a result, sports injuries have steadily increased since the late 1980s.13 Maxillofacial trauma due to firearm injuries have been increasing during the past decades, being one of the greatest challenges for oral maxillofacial surgeons.14 Greater industrial trauma is reported in industrialized cities.

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235
Age and sex have been cited as important factors that influence the occurrence of maxillofacial injuries. The highest incidence is seen in the age group 21-30 years. The lowest incidence is observed in the age group above 60 years and below 5 years. Most of the patients are male with a male: female ratio of approximately 3:1.

Over the past 100 years major developments have been made in the care of victims of maxillofacial trauma such as external skeletal fixation, open reduction, craniofacial exposure, internal wire fixation, primary bone grafting, miniplates and orbital reconstruction. Therefore, such injuries adversely affects the quality of life less frequently today than once did, due to the advances that have been made by countless individuals from diverse disciplinary backgrounds. Collectively, these advances have provided great improvement in the primary and secondary correction of traumatic maxillofacial deformities.

**MATERIALS AND METHODS**

The information obtained was based upon analysis of maxillofacial injuries recorded from the department of oral & maxillofacial surgery, de, Montmorency College of Dentistry, Lahore. The study was conducted from June 2001 to Dec 2002. This randomized study was conducted on 320 consecutive patients as having received maxillofacial injuries. All patients of any age and either sex presenting with maxillofacial trauma to the department were included in the study. A detailed history of the patient was taken and thorough clinical examination was carried out. Basic investigations and specific investigations like radiograph were carried out to confirm the bony trauma. The maxillofacial fractures were assessed according to the etiology, age, and gender.

**RESULTS**

During the period from June 2001 to Dec 2002, 320 patients with different types of maxillofacial fractures were treated. The most common cause of maxillofacial trauma was RTAs (n=207; 64.7%), followed by accidental fall (n=60; 18.8%) and injuries associated with fight (n=26; 8.1%); sports related injuries in 17 cases (5.3%). FAI (n=3; 0.9%) Industrial (n=2; 0.6%). The causes of injuries are listed in table 1. The remaining fractures were due to a variety of causes (n=5: 1.6%) such as bomb blast, animal injury etc.

The age of patient at the time of injury ranged from 2-76 years, with a mean age of 25 years +1- 13 years. In most cases the patient was between the age of 21-30 years (n=105;32.8%). Only 12.8% of patients were less than 11 years of age, and 1.3% were more than 60 years of age (table 3). In virtually all age groups, more men than women were affected, the overall ratio being 5.4:1 (table 2).

**DISCUSSION**

The result of epidemiological surveys on the causes and incidence of maxillofacial fractures tend to vary with geographic region, socioeconomic status, culture, religion and era. The predominance of maxillofacial
trauma in the age group 21-30 years is consistent with the findings of previous published work. But contrasts with the report of Karyouti, who gave the age group of 0-5 years as having the highest incidence. The possible explanation for the high frequency of the 21-30 year age group is that people in this age group take part in dangerous exercises and sports, drive motor vehicles carelessly, and are most likely to be involved in violence. The lowest frequency was observed in the age group above 60 years (1.3%) contrary to the study of Kapoor and Srivastava in which it was 0-5 years. The limited outdoor activities in old age would be the possible reason.

Previous studies have shown a lower incidence of maxillofacial fractures in females with male, female ratios ranging from 5.2:1 to 5.4:1. In this study it remained 5.4:1. The higher age of man could be because men are mostly involved in out door activities and are also exposed to violent interaction. Male drivers are more as compared to female.

In most previous epidemiological studies traffic accidents were the most common cause of mandibular fractures, and the present study supports these findings. In England it has been reported that the introduction of the compulsory use of seat belts is having a significant effect with respect to reducing the number of facial injuries. In Pakistan a law making the use of seat belts compulsory has not been implemented properly. While interviewing the victims of facial trauma due to RTAs, it was observed that the carelessness of many drivers, failure to give the right of way, excessive speed on highways for competition among addict drivers, were responsible for increase in number of mandibular fractures due to R.T.As.

Hill et al and Voss reported assault as the predominant cause of maxillofacial fractures in England and Norway, respectively. The frequency of 8.1% in this study caused by fighting contrast vividly with the figure of 55% reported from Scotland, a finding that may be related to differences in social customs alcohol intake. Because of religious background, Pakistanis do not drink alcohol.

CONCLUSION

The present study revealed that the peak frequency of mandibular fractures occurred in the age group consisting of 21-30 years old and most frequent cause was R.T.As (64.7%). The male to female ratio was 5.4:1. The body of mandibular fractures (30.3%) was the most frequent site followed by condylar region (24.2%).

The findings show that there are causes of concern about the high rate of mandibular injuries caused by R.T.As, as few people use safety belts, an awareness campaign to educate the public especially drivers about the importance of restraints and protective measures in motor-vehicles, should be implemented. These finding should alert the authorities to the need for the enforcement of existing traffic laws to control excessive speed on highways and careless driving, provision of smooth roads and use of safety belts must be made compulsory.

REFERENCES


