PATTERN AND AETIOLOGY OF MAXILLOFACIAL INJURY AT TEACHING HOSPITALS AT KOHAT, KHYBER PAKHTUNKHWA PAKISTAN

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ABSTRACT

Maxillofacial, plastic and trauma surgeons come across maxillofacial injuries in the developing as well as in the developed countries world wide. Injury to this region of human body poses a challenge to the surgical team. This study was aimed to determine, the aetiology, the demographic distribution, the type of tissue involvement and the portion of face affected by injuries. This descriptive study was conducted at two teaching hospitals (DHQ Teaching Hospital KDA, Liaqat Memorial Hospital) at Kohat, Pakistan, during the period between December 2010 to June 2012. A specially designed proforma was used to recod biographic data of patients, aetiologic factors and region of the face involved. A total of 639 patients were studied. Males dominated females by a ration of 4.03:1. The mean age was 30.35± 5.6. Most of the injuries were caused by Road traffic accidents n=224 (35.05%), Fire arm injury n=128 (20.03%) and Bomb blasts injury n=96 (15.02%). Soft tissues injury n=414 (64.78%) were greater than hard tissues n=225 (35.21%). The upper third of the face n=110 (17.21%) was quite less when compared to the injuries of middle third n=284 (44.44%) and lower face n=245 (38.34%) respectively. Road traffic accidents, fire arm and bomb blasts are the major etiological factors of maxillofacial injury in the area of this study.

Key Words: Aetiology, Maxillofacial injury, bomb blast, Kohat

INTRODUCTION

Prominent position of maxillofacial region of the human body makes it prone to sustain injury. Emergency units of all tertiary care hospitals receive patients of maxillofacial injuries commonly with high morbidity and varying intensity of facial discrepancies.[1,2,3,4,5,6,7,8,9] Occurrence of maxillofacial injuries may be isolated but concomitant injuries to the head, throat, abdomen, spine and extremities are not uncommon.[10,11] Maxillofacial injuries are associated with morbidity, disfigurement of face, functional discrepancy and indeed treated with high cost.[1,2,3,]

The etiology of maxillofacial injuries has been changing over the past three decades and this change is continued. In the developing countries road traffic accidents are the main causes of Orofacial injuries while the developed world has high rate of inter personal violence.[1,2,3,7,10.] The causes of maxillofacial injuries are even changing within the same country, depending on the cultural, environmental and social economic factors.[4] Alcohol consumption has also been one of the causes of such injuries in western countries.[7]

Maxillofacial injuries involve both hard soft tissues of the face extending superiorly from forehead to the chin inferiorly and vary from lacerations to complicated fractures of this region of the face. These injuries depend upon the mechanism, magnitude, direction of impact force and the anatomical site involved.[12,13,14] Management of maxillofacial injuries has been remained a challenge for Oral and Maxillofacial surgeons.[15,16,17] This is the first ever study conducted in this region, therefore it will bring change in the awareness of public and the traffic police would be able to implement traffic regulations.

MATERIAL AND METHODS

This descriptive study was carried out at the emergency units of two teaching hospitals (District Head Quarter Kohat development authority(KDA) ,Liaqat Memorial Hospital (LMH) Kohat. A total of 639 patients with maxillofacial injuries alone or in combination with other body injuries were included in the study. A specially designed Proforma/Questionnaire was used to collect the data regarding demographic profile (age, sex, address) of the patients, Aetiolog and the involvement of soft and hard tissues of the upper, middle and lower face. Radiographs like Orthopentomogram, Postero-anterior face and Paranasal Sinus view were taken when need.

RESULTS

A total of 639 patients were included in the study,80.12%(n=512) were male and 19.87% (n=

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127). Figure 1. Most of the patients in this study were in the third decade of life and the mean age was 30.35 ± 5.6 years. Table 1 Most of the injuries were caused by Road traffic accidents n=224 (35.05%), Fire arm injury n=128 (20.03%) and Bomb blasts injury n=96 (15.02%). Table-2 Soft tissues injury n=414 (64.78%) were greater than hard tissues n=225 (35.21%). Fig-2 The upper third of the face n=110 (17.21%) was quite less when compared to the injuries of middle third n=284 (44.44%) and lower face n=245 (38.34%) respectively. Fig-3

DISCUSSION

The male to female ratio in this study was (4.03; 1) which is not in accordance with other studies.[1,2,3] This may be due the fact that this study is carried out in periphery where both gender report to these hospital

Table 1: Maxillofacial injury distribution with respect to age

Age range in years	No. of patients	Percentage
5-15	39	6.10
16-25	229	35.83
26 – 35	225	35.21
36 – 45	113	17.68
46 – 55	25	03.91
56 – 65	05	0.7
66 – 75	03	0.4
Total	639	100

Table 2: Aetiologic factors

Aetiologic Factor	No. of patients	Percentage
Road traffic accidents (RTA)	224	35.05
Fire arm injury (FAI)	128	20.03
Bomb Blasts (BB)	96	15.02
Interpersonal violence (IPV)	83	12.98
Fall from height (FFH)	64	10.01
Sports injury (SI)	32	05.00
Animal bite injury (ABI)	06	0.93
Human bite Injury (HBI)	03	0.46
Child abuse injury (CAI)	03	0.46
Total	639	100

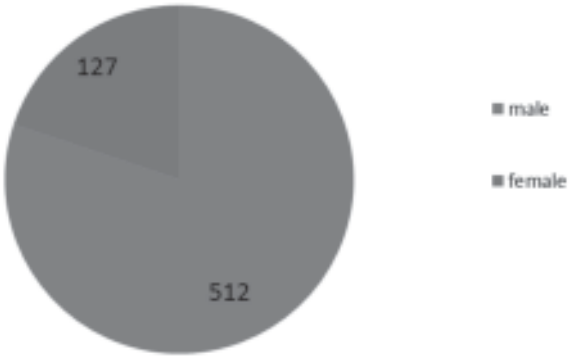

Fig 1: Gender distribution

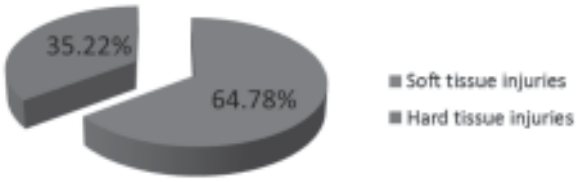

Fig 2: Soft tissues versus hard tissues involvement

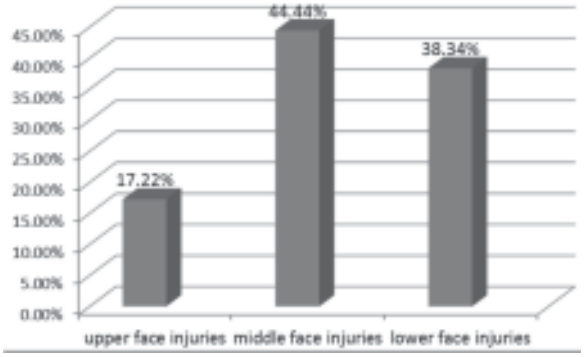

Fig 3: Involvement of part of face in maxillofacial injury:

and there is no other hospital in 70 km area. Almost 70% of the patients were in the range of 15- 35 years old, and this is an agreement with the other studies.[4,5,6,7,8,9,10] this age is the most active period of life where people go outside their shelter for jobs, business and other works. The young individuals are mostly involved in speedy traveling and one wheeling motor bike driving in this area as well as seen in other nations.

In this study Road Traffic Accidents 35.05% is the major cause and this is an agreement with the other studies.[11,12,18] Most of the traffic accidents are because of those patients were not using a seat belt or safety helmet, in spite of the fact that it is mandatory. Likewise, in motor bike accidents 100% of patients were not wearing protective devices. One of the reasons for the road traffic accidents as the leading cause of maxillofacial trauma is that, in the developing countries traffic rules are not properly observed. The 2nd major cause fire arm injury is due to aggressive be-

havior and culture of Pashtoon tribes in this area and this is an agreement with the observations of other authors.[19,20,21,22] Another major cause in this study is bomb blast injuries. This is due to terrorism in this part of country. Another reason is Inter personal violence (IPV). This is same with the observation of the study Wimsons and Kasemak P.[20] Although alcohol consumption in this area is negligible but due to aggressive behavior and short temper of the Phathans IPV is common reason.

Inter personal violence (IPV) is internationally acceptable risk factor for maxillofacial injury but it has increased number than shown in this study n= 83(12.98%) because such patients sometimes attend the near by tertiary care hospitals for treatment purpose having no proper referral system and the 2nd reason is the short temper of the people of this area.

Involvement of the Middle 3rd of the face is 44.44%, lower 3rd of the face 38.34% is more than upper 3rd of the face, and this is an agreement with other studies.[1,2,3,4] This may be due to the fibrous weaker nature and more prominent position of the middle face as compared to upper face. The lower face is most vulnerable to trauma due to its mobile and compact nature.

CONCLUSION

Road traffic accidents, fire arm and bomb blasts are the major etiological factors of maxillofacial injury in this area. Traffic regulations, driver education programs, strengthening the law and its implementation are mandatory measures to be taken for reduction of the occurrence of maxillofacial injuries.

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