

Frequency of maxillofacial skeletal injuries according to age site and cause

Nizam Ul Mulk^a, Mirza Tareen^b, Jahangir Hamad^c, Habib Ur Rehman (late)^d, Changaiz Khan^e

Abstract

Introduction: The trends of maxillofacial injuries have changed over recent years with the changing prevailing factors of the society and environment. Pakistan has seen a societal, cultural and environmental change over the last fifty years and the pattern and reasons of injuries have changed over the years. There's a need to ascertain the reasons behind changing environment as well as the frequency of these injuries so as to better formulate policies for their prevention.

Material and methods: This retrospective study was conducted on 316 patients reporting to Oral and Maxillofacial Surgery Department (OMFS) of Civil Hospital, Quetta (SPH) with presenting history of facial damage between periods from January to December 2016. Out of the total sample of 316, 281 patients (88.92%) were males and 35 (11.07%) were females. Results of frequency were derived on the basis of history, clinical and radiological examination.

Results: A large portion of the patients were in their third decade of life. The most widely recognized reason for damage was RTA (43.35%), inter-personal violence was (22.15%) and work related / sports injuries were 45 (14.24%). The most common bone to be broken was mandible (50.62%) that trailed by zygomatic bone (28.16%) and maxilla (21.19%).

Conclusions: Trauma to the facial region is considered to be mainstay of treatments provided in the Maxillofacial domains that might need Orthodontic assistance in cases ending up in disfigurement. Legislation needs to be in place for reduction in these incidences.

Keywords: Facial trauma; fractures; facial asymmetry

Introduction

The frequency and trends of maxillofacial wounds / injuries have changed over recent years. Road traffic accidents are a primary cause.^{1,2} Other causes might incorporate interpersonal violence, fall from height, mechanical injury and sports related trauma.³ The etiological reasons can be attributed to various geological areas of the world with their peculiar socio-economic and cultural values and situations.^{4,9} Socio

economic condition, social conduct, driving aptitudes and utilization of liquor have their impact in building up the occurrence of different causes.^{3,4}

The main reason behind epidemiological studies is to record frequency and reasons behind any particular injuries so as to make policies in line with the most frequent happening. Vital measures are then taken and finances allocated by governments to avert or limit such occurrences e.g. road traffic rules, development of buildings as indicated by engineering rules, limiting ownership of arms in the public so on and so forth.

The present study aimed at identifying and reporting the frequency of reporting maxillofacial injuries in a tertiary care hospital

^a Assistant Professor, Oral and Maxillofacial Surgery, Bolan University of Health Sciences, Civil Hospital, Quetta.

^b Professor, Oral and Maxillofacial Surgery, Bolan University of Health Sciences, Civil Hospital, Quetta.

^c Associate Professor, Oral and Maxillofacial Surgery, Bolan University of Health Sciences, Civil Hospital, Quetta.

^d Assistant Professor, Oral and Maxillofacial Surgery, Bolan University of Health Sciences, Civil Hospital, Quetta.

^e Senior Registrar, Oral and Maxillofacial Surgery, Bolan University of Health Sciences, Civil Hospital, Quetta.

Material and Methods

The approval to conduct the study was obtained from the ethical review board of the institute. The sample consisted of 316 patients reporting to Oral and Maxillofacial Surgery Department, Civil Hospital, Quetta. The sample was selected via convenience sampling technique. Patients that reported to the out-patient Department with a history or complaint of maxillofacial trauma were included in the study. Consent was obtained from each patient and in case of an unconscious patient, history was obtained later i.e. once the patient gained consciousness. Each one of the 316 patients were admitted for the treatment of maxillofacial wounds between Jan to Dec 2016. The results were ascertained on the basis of history, clinical examination. These were affirmed by radiological examination. Age, gender, aetiology of the injury, treatment requested and length of time of treatment were recorded on a Performa. SPSS version 20 was used to assess the frequency of each variable and percentages were calculated.

Results

Out of the total sample of 316 patients, 281 (88.92%) were males and 35 (11.07%) were females. Peak incidence of trauma was to the patients falling in the age group of 3rd decade (Table I).

Table I

S. NO	Age (Year)	Male	Female	Total
01.	01-10	26	09	35(11.07%)
02.	11-20	53	09	62(19.62%)
03.	21-30	105	08	113(35.75%)
04.	31-40	68	07	75(23.73%)
05.	41-50	12	01	13(4.11%)
06.	51-60	12	00	12(3.79%)
07.	61-70	04	00	04(1.26%)
08.	71-80	01	01	2(0.26%)
	Total	281	35	316(100%)

The most common cause of maxillofacial injury was Road Traffic Accident (RTA) that effected 137 (43.35%) patients. Second most

common reason for this trauma was interpersonal violence 70 (22.15%) followed by sports 43 (10.09%), fall 15 (4.74%), bomb blast and fire arm injuries 49 (15.5%). Rarely industry based injuries, animal bite constituted 15 (4.73%) patients amongst the pool. The most commonly involved bone of the maxillofacial region was the mandible 160 (50.62%), either alone or in association with other facial bones.

Table II

S.NO	Mechanism of injury	NO of fracture	%age
01.	Road traffic accident(RTA)	137	43.35
02.	Interpersonal violence	70	22.15
03.	Fire arm and bomb blast injuries	49	15.5
04.	Sports	30	9.49
05.	Fall	15	4.74
06.	Mines injuries	09	2.84
07.	Others	6	1.89

Table III

S.NO	BONE	Total No of fracture	%age
01.	Mandible	119	37.65
02.	Mandible with other facial bone	41	12.97
03.	Zygoma	58	18.35
04.	Zygoma with other facial bone	31	9.81
05.	Maxilla	43	13..6
06.	Maxilla with other facial bone	24	7.59

Discussion

In the present study, male to female proportion was 8:1. Male predominance in maxillofacial trauma incidence is reported in the literature.^{3,4} Previous studies in Greece, Nigeria, Germany and Japan have also reported a greater incidence in males to a ratio of 2:1 to 3:1.^{3,6} The same ratio has also been reported to an alarming ratio of 32:1 in other regions of Pakistan.^{10,13}

Third decade of life is the most active phase of individuals where they are actively involved in physical activity, driving voyaging, sports and so forth. This predisposes them to having more

maxillofacial injuries. The present study is also comparable with other studies depicting the the same age group to be more prone to such injuries.^{5,7,8,11} However; some of the studies indicate that younger persons are more prone to such injuries.^{2,4}

Most of the injuries are also based on changing environment, socio-economic status and involvement of technology as an integral part of lives of people.^{4,9,12} In developed countries, this incidence is decreased as far as the RTA is concerned and somewhat increased in relation to violence and sports injury.^{1,3}

Baluchistan is a backward province of Pakistan and access to records of various maxillofacial centres is not possible. The results of the present study depict that road traffic accidents were the major reason for facial trauma (44.35%). These can be attributed to recent establishment of wide spread links and network of roads but synonymously educational facilities and illiteracy about traffic rules have not been focused upon. In another study, RTA incidence was reported to be high during the development of this infrastructure of roads in Baluchistan.¹³

The second most common cause of injury was violence (22.15%). This was because of the socio- economic and cultural environment prevalent in the province. It's a common practice to possess arms and ammunition. Recent terrorism activities have additionally played a huge role in these incidences.

In regard to the effected facial structures, isolated mandible was the most commonly involved bone (37.65) or in combination to other facial bones (12.97%). The zygomatic bone was the second most commonly fractured bone in isolation (18.35%). Zygomatic bone received trauma in combination to other facial bones (9.81%). Maxilla alone (13.6%) or in combination with others bone fracture (7.59%) was third most commonly fractured. Previous studies from

Pakistan have also reported similar results.^{2,8,10,13}

Conclusions

In the light of this study and reports from others studies also, it can be suggested that awareness of people about traffic rules specially motor-cyclists must be enforced. Measures must be taken to enforce drivers to use helmets and seat belts in automobiles. Restrictions must be in place regarding the use of cell phones while driving may also improve the conditions and reduce the incidence of injuries.

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