

TRENDS OF TRAUMA AT A NEWLY ESTABLISHED MAXILLOFACIAL CENTRE IN A TEACHING HOSPITAL

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ABSTRACT

Objective: The objectives of this study is to review the maxillofacial surgery practice in our institution, its pattern and gaps in our practice.

Material and Methods: This was a retrospective descriptive study performed at the Department of oral and maxillofacial surgery at Hayatabad Medical Complex, Khyber Girls Medical college Peshawar Pakistan from 22nd October 2013 to 31st December 2016. Five hundred and thirty patients of facial trauma were included in this study. Patients with isolated cases of dentoalveolar and nasal bone fractures or only facial lacerations were excluded from this study as these are treated in emergency department and ENT department. Information and data was collected from indoor medical treatment charts of each patient.

Results: Among 530 cases there were 453 males and 77 females with a male to female ratio of 5.88: 1. The overall mean age was 23.40 with standard deviation of 14.75. Age 2- 20 years was most common 51.7%. Among 530 cases there were 478 (90.2%) Pakistani and 52 (9.8%) Afghani. A total of 345 patients (65.1%) were admitted through accident and emergency department and 185 through out patient department (34.9%). The most common bone involved was Mandible (49.1%) followed by zygomatic bone (16.4%) and maxilla (14.5%). Road traffic accident was the most common mode of presentation (68.9%) followed by fall (17.0%) and gun shot wound (5.1%).

Conclusions: It was concluded that road traffic accident was the most common etiological factor of maxillofacial skeletal trauma. The common mode of transport was two wheeler motor bike. The most common bone involved was Mandible.

Key words: Maxillofacial trauma, Hayatabad medical complex, Maxillofacial fractures

INTRODUCTION

All parts of the body are vulnerable to trauma in daily life but face is most exposed part. The face is composed of complex osseous structure and play important role in both esthetics and functions like chewing, speaking, sight and smell. Therefore maxillofacial trauma can severely compromise mastication and beauty making the patients handicap both physically, socially and psychologically¹.

Maxillofacial injuries are one of the main important cause of medico-legal cases and the maxillofacial surgeons face great challenge to treat it in a proper way especially in developing countries where there is more number of trauma and less expertise and resources².

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The treatment of maxillofacial injuries is very complex in terms of complex anatomy, time required for surgery, and cost involved. As the treatment provided here in this center is free of cost posing much economical consequences to the Government resources.

Road traffic accident is still the main cause of maxillofacial trauma in developing countries and this may be due to lack of proper motor vehicle driving legislation or their enforcement by law enforcing agencies or insufficient knowledge of people who use vehicles. Poor infra structure and randomly increase in number of vehicles specially motor bike^{3,4}. Motor cycle two-wheeler is the most common type of transport among those with facial fractures⁵. Male predominance in age group 21-30 years, is commonly seen⁶. The most common bone involved in trauma was mandible⁷.

Various studies have been carried out in different countries including different parts of Pakistan to understand the demographics and epidemiology so as to improve management and have an impact in

creating public awareness and strengthening legislation to prevent such fractures. The aim of this study was to determine the demographic profile, etiology, and injury characteristics of maxillofacial injuries at our newly established maxillofacial centre at a teaching hospital in Peshawar. The study may provide the basis for the establishment of treatment guidelines and more reliable planning for prevention and building of future health care strategies for such cases.

METHODS AND MATERIALS

This descriptive, retrospective study was conducted at the newly established Department of maxillofacial surgery at Hayatabad Medical Complex Peshawar, Pakistan. A record of 530 patients was retrieved from the medical record of in door admitted patients during a period from January 2013 to December 2015. Patients with simple soft-tissue injury, dentoalveolar injuries or simple fractures that were treated in outpatient department under local anesthesia without admitting them in hospital, patients treated in other ward like neurosurgery, orthopedics etc- and patients who refused treatment at our center were excluded from the study.

The diagnosis was made by history, clinical examination and radiographs like Orthopentomogram, conventional facial x- rays and CT scan present in the treatment record charts of patients. Fracture sites were classified as mandible fractures, maxilla, zygomatic complex, nasoethmoidal, frontal or their combination.

The data collected was put in SPSS 16 and then analyzed for age, gender, cause of trauma, and pattern and bone involved.

RESULTS

Among 530 cases there were 453 (85.5%) males and 77 (14.5%) females in a male to female ratio of 5.88: 1. The age range was from 2-72 years with mean age was 23.40 and standard deviation of 14.75 . Age range 2- 20 years was most common 51.7% followed by 21 – 40 years(36.4%). (Detail is given in table 1)

Among 530 cases, 478 (90.2%) were from Pakistan and 52 (9.8%) from Afghanistan in a ratio of 9.19: 1. (Figure 1) A total of 345 patients (65.1%) were admitted through accident & emergency department and 185 through outdoor patient department (34.9%). (Figure 2)

Mandible was the most common bone involved

(49.06%) followed by zygomatic bone (16.42%) and maxilla (14.53%). (Detail is given in table 2) Soft tissue laceration was involved in 75.5 % cases. Road traffic accident was the most common mode of presentation (68.9%) followed by fall (17.0%) and gunshot wound (5.1%). (Detail is given in table 3)

DISCUSSION

Certain important factors like geographical environmental location of the survey area, culture, and socioeconomic status of the inhabitants influence the epidemiology like age, genders, aetiology and incidence of maxillofacial trauma⁹. In the present study, the most commonly affected age group was below 20 years (51.70%) as compared to age group 21-40 which is (36.41%). This is supported by the study conducted by Ahmad S⁴ and contrary to the study carried out by Shankar NA¹⁰, Kamath RA¹¹ and Thadani S¹² where peak incidence age group involved was 21- 40 years. This may be due to the type of transport used here in Pakistan as compared to India in young age. In Pakistan due to very cheap cost of two wheeler motorcycle, most of the teenagers not having driving license use this very carelessly without using any preventive measures like helmet. Poor traffic legislation implementation and very poor condition of the roads make the teenagers drivers more prone to road traffic accidents. Fall was the second most common cause in our study and it usually occurs in first few years of childhood due to less maturation of motor skill. Another study conducted by Khan¹³ in Pakistan shows greater incidence of maxillofacial trauma in 3rd decade which is contrary to this study. This may be due to the fact that, the survey was done in armed forces hospital where most of the patients are soldier and of older age.

In this study male gender (85.47%) is predominate as compared to female (14.52%) making ratio of 5.88: 1 and this an agreement with the many previous studies^{2,4,5,6,7}. This is probably due to large no of young male exposure on roads, specially motor bike use, as most of the accidents were due to two wheeler motorbike. In the present study approximately 10 percent of the patients were consisted who come from another country Afghanistan. This may be due to lack of specialized maxillofacial centers in Afghanistan and therefore most of the Afghani patients seek treatment abroad.

In the present study most common mode of injury was road traffic accident (86.7 %) followed by fall

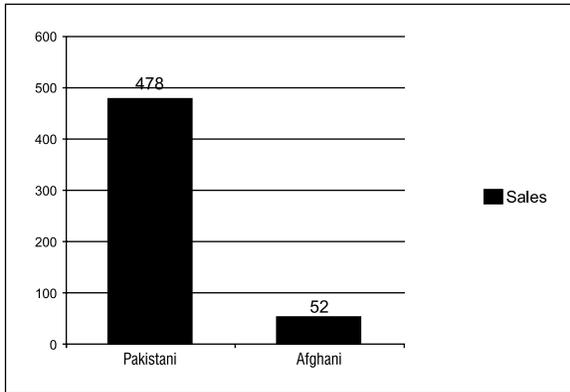


Figure-1. Ethnicity

Table -1. Age distribution

Age (in years)	n	%
2 - 20	274	51.7
21- 40	193	36.4
41-60	53	10
61 +	10	1.9
Total	530	100

Table- 2. Bone involved

Bone involved	No of cases	%
Mandible	260	49.06
Zygomatic complex	87	16.42
Maxilla	77	14.53
Mandible and maxilla	25	4.72
Pan-facial	22	4.15
Mandible and zygomatic bone	20	3.77
Frontal	13	2.45
Orbital floor(blow out)	9	1.70
Maxilla and zygomatic	9	1.70
Nasoethmoidal	8	1.50
Total	530	100

Table- 3. Etiology Of Trauma

Etiology	n	%
Road traffic accidents	365	68.9
Fall	90	17
Gunshot wounds	28	5.3
Assault	10	2
Bomb blast	8	1.5
Sports	5	0.9
Machine injuries	2	0.4
Others	22	4.2
Total	530	100

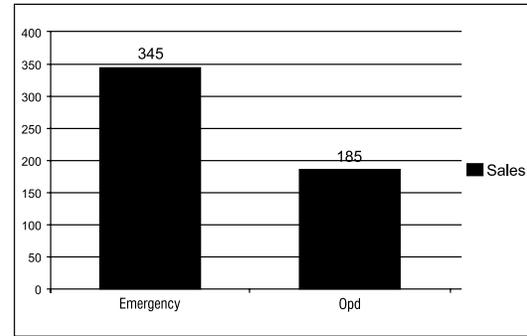


Figure-2:- Nature of cases

(17.1 %). This study is an agreement to many previous studies which shows poor transport traffic regulation implementation in those areas. This is contrary to the some studies where road traffic accidents are less than other causes like interpersonal violence^{14,15,16}. A possible explanation for this may be due to better traffic regulation and legislations implemented and use of safety measures more common in these developed countries. Gunshot wound is 3rd most common cause and more than sports injuries. This expresses the culture and social love of the Phathans with the arms. Second it also represents the easy availability of arms as compared to other developed world where sports are a major cause^{1,6,9}.

In the present study mandible was the most common bone involved (49.1%) followed by zygomatic bone (16.4%) and maxilla (14.5%). This is in agreement with many previous reports^{2,6,17,18,19}. As the mandible is only mobile bone in the face and is also more prominent, therefore it is more endangered and unguarded to trauma. Many factors also make the mandible untenable and implausible like muscle attachment, dentition and thin condylar neck¹⁷. The 2nd most common bone involved was zygomatic bone. This may be due to prominent position of this bone in the face articulation and non wearing of helmet during motorbike riding. As the vehicles used nowadays are very high speed and this is one of the reasons that mandible and zygomatic bones are mostly fractured as they require more force to be fractured.

CONCLUSION & RECOMMENDATION

It is concluded that road traffic accidents is the commonest aetiology of maxillofacial fractures in Pakistan. The most at risk and in jeopardy is the first 20 years of life for maxillofacial trauma incidence. Males are more commonly affected group as compared to

female. Among the facial bones mandible is the most common bone to be involved in trauma. There seems to be an urgent need for enhanced monitoring and regulation on motor vehicles specially two wheeler to reduce the morbidity and mortality associated with RTAs. It is further recommended that there should be complete ban on driving motor bike by younger than 18 years by law enforcing agencies. It is hoped that this epidemiological surveys will open eyes of the policy makers and law enforcing agencies in planning future programs of prevention and treatment.

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