Original Article

Maxillofacial Surgery

Pattern of Mandibular Fractures Reported at Liaquat University Hospital Hyderabad

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ABSTRACT

Objective: The study was conducted to analyze the frequency, gender distribution, age groups, mechanism of accident and site involvement of mandibular fractures reported at liaquat university hospital Hyderabad.

Study Design: Retrospective study.

Place and Duration of Study: The study was conducted in Department of Oral & Maxillofacial Surgery Liaquat University Hospital Hyderabad from March 2012 to March 2013.

Materials and Methods: A data of 228 of patients who had been diagnosed with a mandibular fracture between March 2012 and March 2013 at the Liaquat University Hospital of Hyderabad, Oral & Maxillofacial Surgery Department was retrospectively reviewed. Patients data including gender, age, mechanism of accident, fracture sites were analysed.

Results: 166 (72%) male patients and 62(27%) female patients were reported with mandibular fracture. Most common age group was between 30-40 years. Most common mechanism of accident was RTA in 153 (67%)cases followed by fall from height 42(18%) cases. Most common site involved was Parasymphysis in 112(49%) cases followed by angle in 51(22%) cases.

Conclusion: The result of this study shows that road traffic accident is most common cause of mandibular fractures in this region.

Key Words: Mandibular Fracture, Road traffic accident, Parasymphysis.

INTRODUCTION

The fracture is defined as "breach in the continuity ofbone"[1].Facial injuries are among the most common types of trauma treated at emergency departments[2].Facial area is one of the most frequently injuredarea of the body, accounting for 23–97% of all facial fractures[3]. Maxillofacial trauma is a major cause of mortality and morbidity world wide[4]. It not only hampers the function but also causes grim psychological and cosmetic insufficiencies[5] The occurrence of facial injuries tends to be high compared to injuries in other body areas because the face is without protective covering.Mandible is a very prominent and vulnerable boneon the face[6].

Mandible is the only mobile bone of the facial skeleton which plays a major role in mastication, speech and deglutition[7]. The mandible is the most prominent bone in the face, suspended on two hinge joints on both sides of the skull. The incidence of occurrence of mandibular fractures is always on the increase because of the fast pace of life, increased violence and advent of rapid modes of transportation. Fractures of the mandible are therefore relatively common injuries caused by trauma. Mandibular fractures are the second, most-frequent facial injuries treated at a trauma centre[8].[9]. According to severalstudies, they account for 15.5% to 59% of all facial fractures[10,11,12]. Causes of mandibular fracture are road trafficaccidents, interpersonal violence, gun shots, accidental falls,sports injuries, industrial trauma, pathologicalfracture etc[13,14,15]. In third world countries road traffic accidentis theCommon cause ofmandibular fractures due to lack ofimplementation of the traffic laws, while in developingcountries alcohol related interpersonal violence is theleading cause[16,17]. Thedifferences reflect a lack of traffic regulations includingseat belt and helmet enforcements, absence of air bagsin the vehicles and poor road infrastructure in theunderdeveloped and alcohol abuse in the developed countries[18].

MATERIALS AND METHODS

This study was a retrospective carried out at the Oral and Maxillofacial Surgery unit o f Liaquat University Hospital Hyderabad for a period of one year from March 2012 to March 2013.

The hospital records 228 patients who had been diagnosed with mandibular fractures were reviewed. The patient's age group, gender, site involvement and mechanism of accident for mandibular fracture were recorded. The fracture was diagnosed with the help of

history and clinical examination .conventional radiographs like orthopantogram(OPG), poster anterior view of the mandible (PA- mandible), rightand left lateral oblique view of the mandible.

RESULTS

A total of 228 patients were diagnosed with mandibular fracture in one year period. 166 (72%) male patients and 62 (27%)female patients. Shown in figure:1: Mechanism of Accident table no1. Most common age group was 30-40 years of age. Table no 2. Most common site involved was parasymphysis in 112 (49%) cases, followed by angle 51(22%) in cases. Shown in Figure 2.

Road traffic accident was the most common mechanism of accident. Shown in figure 1.

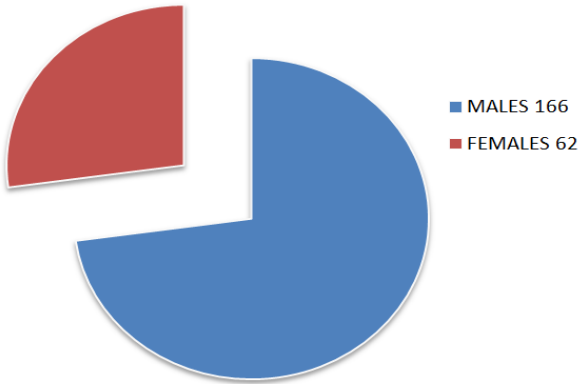

Figure No.1: Male to female ratio

Table No.1: Mechanism of Accident

Mechanism of accident	No. of patients	percentage
RTA	153	67%
Fall	42	18%
Assault	10	4%
Gun shot	09	3%
Sports injury	05	2%
Industrial trauma	05	2%
Pathological fracture	04	1%
Total	228	

Most common site involved was parasymphysis in 112 (49%) cases, followed by angle 51(22%) in cases. Shown in Figure 2

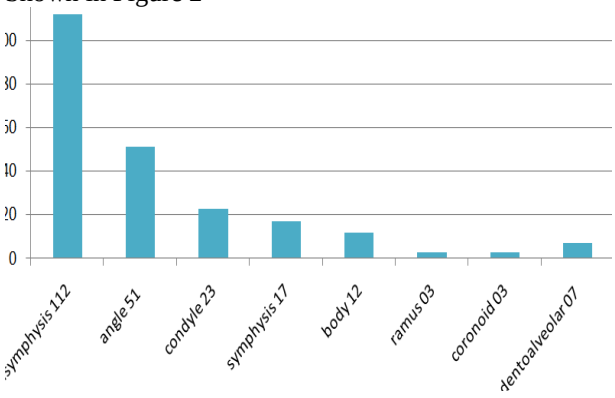

Figure No.2: Site involvement

Table No.2: Age Distribution

Age group	Total	RTA	Fall	Assault	Gunshot	Sports Injury	Industrial Trauma	Pathological Fracture
Less than 10years	28	02	24	00	00	02	00	00
11-20 years	24	09	10	00	00	05	00	00
21-30 years	44	39	00	04	00	00	01	00
31-40 years	92	79	04	03	02	00	04	00
41-50 years	20	12	01	03	03	00	00	01
51-60 years	13	10	01	00	01	00	00	01
More than 60 years	07	02	02	00	01	00	00	02

DISCUSSION

In the maxillofacial region, the mandible is more vulnerable than the zygomaticomaxillary complex perhaps because of its position in the face and its prominence. The osteology of mandible, various muscle attachments and their influence, and the presence of developing or completed dentition all play a role in the mandible's weaknesses[14 15]. In this study males were found to be predominant of Mandible fracture. The percentage of male and female were 72% ratio 27%. Compare to other studies done regional and international same result found.[7,16.17..] Reason of male dominated in this study were keenly busy in outside activities on motorcycle as compared with females who had worked at home. Traffic casualties of motorcyclists and pedestrians are considered a major problem. In this study the most common reason of mandible fracture was establish to be road traffic accident 67% followed by fall, assulat,gunshort, Sport injury, Industrial trauma and Pathological fracture. This judgment has

been established constantly by several further studies[18,19].

In Pakistan also road traffic accident (RTA) was establish to be the chief reason of mandible fracture. In this study on the other hand disagreement to study completed in developed countries.where road trafiic accident (RTA) was second reason after assault.[16,17] In this study falls 18% related fracture of mandible due to motorcyclist were responsible for pedestrians especially in the urban area of Hyderabad, reason of that there is no footpath for pedestrians on the road at city Hyderabad . Over flow of traffic ,congested road, over loading on motor cycle instead of one, three person over one motorcycle and high speed of motorcyclist by teenage group. And new trend of wheeling (one wheel motorcycle riding) on congested and busy road that hit common man on road and cause fracture of mandible by fall on road. compare to this study and ad adhikhari Nepal 2012 in his study fall from height was second reason of manbile fracture instead of assault [20]. contradict to our study that fall on road cause fracture of mandible due to motorcycle hitting.

In this study elevated numbers of gunshort injuries 4% related mandible fracture recoded are due to This changing trend of our society violence aerial firing o n wedding . robbery. Happy new year aerial firing. . continues striking at urban area of sindh . political and ethnicity quarrels of sindh Province of Pakistan, where possession of arms cultural change [21,22, 23].

Mandibular fractures related with sports 4% to be the second most common facial bone fractures after the nasal bones . roccia *et al 2008* have reported sports as the main reason of mandibular followed by road traffic accidents [24]. In fact, our study shows some inconsistencies with data previously published on sport related fracture of mandible..First of all, at Hyderabad sports trends activity is less. So there fore less sport related fracture of mandible.were noted. Compare to other studies dissimilar result were found.[16,17,24]

In this study the mandibular fractures Age was 21-30 years; these answer are similar with the fallout of earlier studies.The main occurrence of fractures was noted in age of 21-30 years[25 26 27]. but contrast with the study Stylogianni in 1991 with had dissimilar result .[28] since people from these age are frequently concerned in studying , aimless walking , job searching works and motorcyclist in our society . In the majority of the cases, road traffic accident occur in these groups during evening when they were wondering

In this study 49% parasymphysis fracture of mandible. Followed by 22% angle . Condyle 10% symphysis 7% body 5 %, ramus 1% coronoid 1%. Nevertheless , fractures taking place in the body, condyle and angle prove a comparatively related occurrence as ramus and coronoid fractures are uncommon.. The results of the present study correlate with the study of khan A et al 2009 [29] where parasymphysis was the common site of fracture accounting for 27%. Similar results are given by Ansari SR et al 20O4 [30] where parasymphysis predominated other sites of mandible.

CONCLUSION

The result of this study shows that road traffic accident is most common cause of mandibular fractures in this region.

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