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Original Research

Retrospective assessment of 114 mandibular fracture cases among known population

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ABSTRACT:

Background: Mandibular fractures can involve any of the anatomic sub-sites with simultaneous multiple sites involvement. Hence; under the light of above mentioned data, the present study was undertaken for assessment of 114 mandibular fracture cases among known population. **Materials & methods:** A total of 114 cases of mandibular fracture were analysed. A master chart was prepared and complete clinical and demographic details of all the patients were obtained from the data record files. Retrospective radiological examination was carried out in all the patients for analysing the clinical site and pattern of injuries involving the mandible. Also detail description of the clinical pattern of fracture cases was obtained from the record files. All the results were recorded in Microsoft excel sheet and was analysed by SPSS software. **Results:** Ramus was the most site of mandibular fracture found to be present in 20.18 percent of the cases. Fracture of coronoid process and condyle was found to be present in 19.30 percent and 18.42 percent of the cases. Fracture of body of mandible and angle of mandible was found to be present in 13.16 percent and 16.67 percent of the cases. Open fractures were found to be present in 20.18 percent of the patients while closed fractures were found to be present in 79.82 percent of the patients. **Conclusion:** Mandibular fractures are most common among middle aged males at ramus, coronoid process and condylar region.

Key words: Mandibular, Fractures

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INTRODUCTION

Mandibular fractures can involve any of the anatomic sub-sites with simultaneous multiple sites involvement.[1] Literature was scant regarding multiple site fractures (double unilateral, contralateral and triple unilateral fractures) in mandible. The patterns and etiology of mandible fractures varied considerably among different study populations. There was an increase in the frequency of fractures due to violent mechanisms along with an increase in incidence of these injuries in adolescents and young adults, especially in urban areas.[1-3]

RTA is the leading cause of mandibular fracture in developing countries owing to poor enforcement of law and ensuring the abidance by the existing traffic and speed limit regulations, while interpersonal violence is the leading cause in developed countries.[4,5] Hence; under the light of above mentioned data, the present study was undertaken for assessment of 114 mandibular fracture cases among known population

MATERIALS & METHODS

The present study was conducted with the aim of analysing 114 mandibular fracture cases among known population. Ethical approval was obtained from the ethical committee of the institution. A master chart was prepared and complete clinical and demographic details of all the patients were obtained from the data record files. Retrospective radiological examination was carried out in all the patients for analysing the clinical site and pattern of injuries

involving the mandible. Also detail description of the clinical pattern of fracture cases was obtained from the record files. All the results were recorded in Microsoft excel sheet and was analysed by SPSS software. Chi- square test was used for assessment of level of significance.

RESULTS

In the present study, data records of a total of 114 patients were analysed. Mean age of the patients of the present study was 38.4 years. 54 patients belonged to the age group of 30 to 45 years. 63 patients were males while the remaining 51 were females. Road traffic accident was the major etiologic factor found to be present in 56 patients. In 43 patients, aetiology was fall from height.

In the present study, ramus was the most site of mandibular fracture found to be present in 20.18 percent of the cases. Fracture of coronoid process and condyle was found to be present in 19.30 percent and 18.42 percent of the cases. Fracture of body of mandible and angle of mandible was found to be present in 13.16 percent and 16.67 percent of the cases. Open fractures were found to be present in 20.18 percent of the patients while closed fractures were found to be present in 79.82 percent of the patients.

Table 1: Descriptive results

Parameter		Number of patients
Gender	Males	63
	Females	51
Age group (years)	Less than 30	40
	30 to 45	54
	More than 45	20
Aetiology	Road traffic accident	56
	Fall from height	43
	Gunshot	6
	Others	9

Table 2: Location

Location	Number of patients	Percentage of patients
Body of mandible	15	13.16
Angle of mandible	19	16.67
Condyle	21	18.42
Symphysis	14	12.28
Ramus	23	20.18
Coronoid process	22	19.30

Graph 1: Location of fracture

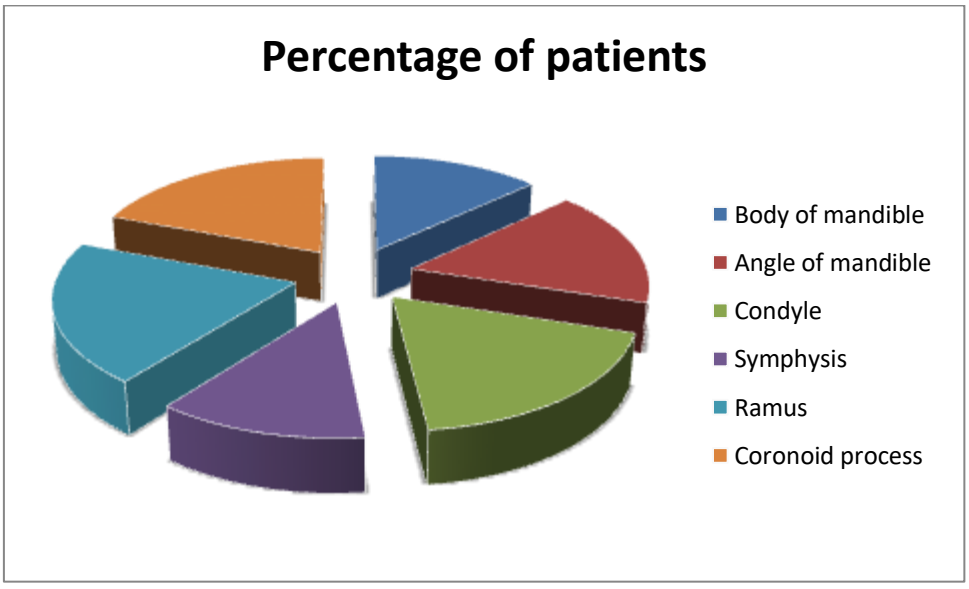

Table 3: Clinical profile of fractures

Clinical profile	Number of patients	Percentage of patients
Open fracture	23	20.18
Closed fracture	91	79.82

DISCUSSION

The mandible is particularly more prone for maxillofacial trauma and fractures due to its unique mobility, shape, and chin prominence in the facial skeleton. It is the second most frequent of the facial bones affected by traumatic injuries and shown to account for 15.5%–59% of all facial fractures. The mandible can be seen fractured alone or in combination with a fracture of other bones in the maxillofacial region. A broken lower jaw is accompanied by pain, deranged occlusion and loss of masticatory function, speech impairment, and esthetic disfigurement with psychological effects apart from significant financial cost.[6- 9] Hence; under the light of above mentioned data, the present study was undertaken for assessing the

In the present study, data records of a total of 114 patients were analysed. Mean age of the patients of the present study was 38.4 years. 54 patients belonged to the age group of 30 to 45 years. 63 patients were males while the remaining 51 were females. Road traffic accident was the major etiologic factor found to be present in 56 patients. In 43 patients, aetiology was fall from height. Paza AO et al reviewed cases of fractures of the mandibular angle to identify personal data, social traits, fracture characteristics, treatment modalities, and postoperative complications. 114 patients were treated for 115 fractures of the mandibular angle. More angle fractures were observed in Caucasian (55%) men (89%) with some kind of drug addiction (62%). Patient mean age was 27 years. The majority of fractures in this study were sustained in altercations, including gunshot wounds (43%), followed by vehicle accidents, including bicycles and being struck by a car (39%). Open fractures were the most frequent (90%), with prevalence of the left side (57%). Only 1 patient sustained bilateral angle fractures. Ninety-seven patients (85%) underwent open reduction. Complications occurred in 19 patients (17%); 10 (9%) were infections. Of the total number of complications, 3 underwent another surgical intervention for refixation. The factors that contributed to the development of postoperative complications were social risks that included alcohol abuse, smoking, and intravenous and nonintravenous drug abuse. Angle fracture management outcomes are affected by many factors beyond method of fixation.[11]

In the present study, ramus was the most site of mandibular fracture found to be present in 20.18 percent of the cases. Fracture of coronoid process and condyle was found to be present in 19.30 percent and 18.42 percent of the cases. Fracture of body of mandible and angle of mandible was found to be present in 13.16 percent and 16.67 percent of the cases. Open fractures were found to be present in 20.18 percent of the patients while closed fractures were found to be present in 79.82 percent of the patients. Giri KY et al evaluated the significance of various aetiological factors in determining the incidence and dictating the patterns of mandibular fractures in Rohilkhand region. The patient records and radiographs for 144 patients treated for mandibular fractures were reviewed. Data on age, gender, aetiology, use of intoxicants, head injury, associated injuries, days of the week, anatomic site and multiple fractures within the mandible were recorded and assessed. Maximum incidence of fractures was observed among the individuals in 3rd decade (35.4%) followed by 2nd and 4th decades, which exhibited 32 and 30 cases (22.2% and 20.8%), respectively. Male to female ratio was biased (4:1) portraying a male predominance. Road traffic accidents (RTAs) were observed to be the predominant aetiological factor responsible accounting for 79.2% of the total injuries followed by assaults (11.8%) and falls (9%). Parasymphysis exhibited the highest incidence (32.63%) amongst the anatomic sites, followed by body (18.75%), angle (16.66%), condyle (15.27%), symphysis (12.50%), ramus (2.77%) and coronoid (1.38%). The study revealed that majority of affected patients was in the 2nd and 3rd decades. A definitive relationship existed between RTA and the incidence of mandibular fractures.[12] Samman M et al assessed the incidence and pattern of mandible fractures. The age, gender, etiology, role of the patient, site, and number of fractures in the patients were evaluated. The data were analyzed by standard statistical methods. A total of 197 patients with fracture of the mandible were admitted. There were 165 male and 32 female patients. The ages ranged from 3 to 86 years with a mean of 24 years. A total of 260 fractures of Mandible were documented. The condylar anatomical site of mandible was most frequently affected and constituted the largest number (103) of fractures followed by the angle (51), parasymphysis (45), and then by the body (23) of the mandible. Dentoalveolar fractures were present in 22 cases. Very less number of coronoid fractures (7), followed by those of the ramus (5), and least number at the symphysis (4) of the mandible were found. RTA was the most common etiology for trauma and fracture of the mandible.[13]

CONCLUSION

From the above results, the authors conclude that mandibular fractures are most common among middle aged males at ramus, coronoid process and condylar region.

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