

Assessment of Mandibular Fractures In a Known Population

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ABSTRACT

Background: Mandibular fractures are two times as common as mid face fractures and majority of injuries are managed by an oral and maxillofacial surgeon. Fractures of mandible can consist of any of the anatomic sub-sites with concurrent multiple regions of involvement. The present study was conducted with the aim to assess the forms and distribution of mandibular fractures amongst patients reporting to the hospital.

Materials and methods: The present retrospective study was conducted in the department of oral and maxillofacial surgery enrolling all the patients that were referred to the Department with mandibular fractures for a period of 2 years. Patient's records were evaluated for completeness regarding demographic information, site of fracture, mechanism of injury etc. All the data was recorded in a pre designed proforma and subjects with incomplete data were excluded from the study. All the data thus obtained was arranged in a tabulated form and analyzed using SPSS software.

Results: There were 20% males and 2% females with age 41-60 years. There were 2.4% males and 1.2% females with age 61-80 years. There were 38% subjects with parasymphysis fracture, 16% with symphysis fracture, 13.2% with body fracture, 0.8% with ramal fracture. There were 80% with road traffic accident, 9% with sports injury.

Conclusion: It is common amongst all age groups and parasymphysis is the most common site of fracture.

Keywords: Parasymphysis, ramal, mandible, fracture.

INTRODUCTION

The first ever description on fractures of mandible dates to 1650 BC ⁽¹⁾. Mandibular fractures are two times as common as mid face fractures and majority of injuries are managed by an oral and maxillofacial surgeon ⁽²⁻⁴⁾. King et al., described that parasymphyseal fractures were most recurrent (35%), while the least frequent were dentoalveolar (1.3%) and ramal fractures (5.7%)⁽⁵⁾. As per a retrospective study by de Matos et al., and Elgehani and Orafi, it was found that condylar, body,

symphysis and parasymphysis were the commonest mandibular fractures, while ramal (4%) and coronoid (2%) were the least frequent fractures ^(6, 7). Galvan stated that body fractures (28%) followed by parasymphysis (24%) were the commonest sites of fracture while alveolus (3%) and the coronoid (1%) were the least affected areas ⁽⁸⁾. Other researches on mandibular fractures demonstrated that parasymphysis was the most common site of fracture ^(9, 10) whereas the coronoid was the least

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commonly affected⁽¹⁰⁾. Fractures of mandible can consist of any of the anatomic sub-sites with concurrent multiple regions of involvement⁽⁵⁾. Literature was negligible with respect to multiple sites of fractures in mandible. The patterns and cause of mandibular fractures varies considerably amongst different study subgroups. The present study was conducted with the aim to assess the forms and distribution of mandibular fractures amongst patients reporting to the hospital.

MATERIALS AND METHODS

The present retrospective study was conducted in the department of oral and maxillofacial surgery enrolling all the patients that were referred to the Department with mandibular fractures for a period of 2 years. The study included 500 patients whose data was obtained from the medical records by two investigators. All the subjects who underwent a thorough radiographic assessment to determine the pattern and extent of fracture were enrolled in the study. Patients who reported with maxillofacial trauma were 2000, they were screened for mandibular fractures by the resident doctors well versed with the terminologies. Patient's records were evaluated for completeness regarding demographic information, site of fracture, mechanism of injury etc. All the data was recorded in a pre designed proforma and subjects with incomplete data were excluded from the study. All the data thus obtained was arranged in a tabulated form and analyzed using SPSS software.

Table 1: distribution according to age and gender

Age group	Male	Female
<20	80(16%)	20(4%)
21-40	226(45.2%)	46(9.2%)
41-60	100(20%)	10(2%)
61-80	12(2.4%)	6(1.2%)
Total	418(83.6%)	82(16.4%)

RESULTS

Out of 2000 patients reporting with maxillofacial injuries, 500 patients had mandibular fractures. Table 1 shows the distribution of as per age and gender of the patients. There were 45.2% males and 9.2% females with age 21-40 years. There were

20% males and 2% females with age 41-60 years. There were 2.4% males and 1.2% females with age 61-80 years.

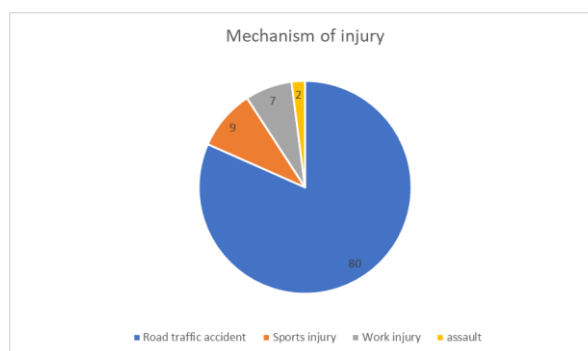
Table 2 shows the site of mandibular fracture. There were 38% subjects with parasymphysis fracture, 16% with symphysis fracture, 13.2% with body fracture, 0.8% with ramal fracture, 14% with angle fracture, 16.4% with condylar or subcondylar fracture and 1.6% with coronoid fracture.

Table 2: distribution of subjects according to site of injury

Site of fracture	frequency	percentage
Parasymphysis	190	38
symphysis	80	16
Body	66	13.2
Ramus	4	0.8
angle	70	14
condyle/ sub condyle	82	16.4
coronoid	8	1.6

Graph 1 shows the mechanism of injury amongst subjects with mandibular fracture. There were 80% with road traffic accident, 9% with sports injury, 7% had work related injury and 2% had fractures due to interpersonal violence.

Graph 1: Showing the mechanism of injury.



DISCUSSION

There was an elevation in the incidence of fractures because of violent techniques along with an rise in incidence of injuries amongst adolescents and young adults, majorly residing in urban areas⁽¹¹⁻¹³⁾.Significances of facial trauma includeembarrassment to smile, laughter and tuffness in maintaining social relationships,

irritation and an incapacity to uphold a healthy emotional condition and negative effect on the life quality⁽¹⁴⁻¹⁶⁾. Outcome of present study demonstrate male predominance in fractures of mandible. It was also discovered that the majority of the fractures amongst both males and females were in the age range of 21 to 40 years, which were consistent with previous studies. The reasons behind this were that men in this age range take interest in dangerous activities and sports, are careless while driving, and are most importantly involved in violence⁽¹⁷⁻²⁰⁾. Our study indicated that road traffic accidents were the most common reason of injury, that were consistent with past studies^(2, 5, 21). Road traffic accidents deemed to be the most frequent reason of injury amongst the rural suburbs whereas in urban suburbs assault, interpersonal violence, gunshot injuries, and other forms of violence are amongst the largest reasons for these injuries⁽⁵⁾. Sports and Gunshot injuries were the least frequent reasons of mode of injury in the present study. In the present study, parasymphysis region fracture was the commonest followed by angle region and condylar fractures, that were similar to that found by Sirimaharaj and Pyungtanasup⁽⁹⁾. Contrary to this, Galvan found that body fractures were commonest followed by parasymphysis region fracture⁽⁸⁾. Fractures of coronoid were the least common forms found in our study. This agreed with the researches by Galvan⁽⁸⁾ and Khan et al.⁽¹⁰⁾ Overall, the patterns of fracture in our study were similar with past studies. Galvan elaborated that mandibular fracture area was dependent upon different factors like mode of injury, magnitude and direction of force, prominence and anatomy of the site⁽⁸⁾. Also, it was dependent upon the direction of the victim's head along with physical features of the mandible.

CONCLUSION

Fractures of mandible are complicated and need immediate intervention, otherwise they have great impact on subject's life. It is common amongst all age groups and parasymphysis is the most common site of fracture.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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