

Original Research

Evaluation of 50 mandibular fracture cases among known population: An observational study

¹Shahid Farooq, ²Hashim Ahad, ³Ajaz Ahmad Shah

¹Senior Resident, ²PG Resident, ³Professor and Head, Department of Oral and Maxillofacial Surgery, Govt Dental College and Hospital, Srinagar, Jammu and Kashmir, India

ABSTRACT:

Background: The present study was undertaken for assessing 50 mandibular fracture cases among known population. **Materials & methods:** A master chart was prepared and complete clinical and demographic details of all the 50 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. **Results:** Body of mandibular was fractured in 18 percent of the patients while angle of mandible was fractured in 16 percent of the patients. Condyle was fractured in 24 percent of the patients while symphysis was fractured in 20 percent of the patients. Ramus and coronoid fracture was seen in 8 percent and 14 percent of the patients respectively. **Conclusion:** Mandibular fractures are most common among middle aged males symphysis, and condylar region.

Key words: Mandibular, Fractures

Received: 15 August, 2021

Accepted: 20 September, 2021

Corresponding author: Dr. Shahid Farooq, Senior Resident, Department of Oral and Maxillofacial Surgery, Govt Dental College and Hospital, Srinagar, Jammu and Kashmir, India, drshahid.533@gmail.com

This article may be cited as: Farooq S, Ahad H, Shah AA. Evaluation of 50 mandibular fracture cases among known population: An observational study. J Adv Med Dent Scie Res 2021;9(10):149-151.

INTRODUCTION

Facial fractures make up a comparatively small proportion of Emergency Department visits, but of these injuries, the most common are nasal and mandible fractures. While the vast majority of nasal fractures can be managed without surgery, operative intervention for mandible fractures is relatively common due to the complexity of the structure's anatomy and function. The mandible is a mobile, ring-like bone that frequently fractures in more than one location; these fractures are at risk for wound contamination with oral flora, may be complicated by teeth in the fracture line, and in some cases, can compromise the patient's airway.^{1,2}

The mandible is one of the most commonly fractured facial bones, along with the nasal and zygomatic bones. Most frequently, fractures are a result of trauma, such as motor vehicle accidents, physical altercations, industrial accidents, falls, and contact sports. For this reason, it is critical to evaluate patients with mandible fractures for other associated traumas, to include cervical spine and traumatic brain injuries.

Vehicular accidents and altercations are the primary causes of mandibular fractures in the United States and throughout the world. In an urban trauma setting, altercations account for most fractures (50%), and motor vehicle accidents are less likely (29%). Males suffer approximately three times as many mandible fractures as females, with the majority occurring in the third decade of life. Mandibular fractures are uncommon in children under the age of six, likely because of the relative prominence of the forehead compared to the chin. When they do occur, they are often greenstick fractures.³⁻⁶ Hence; the present study was undertaken for assessing 50 mandibular fracture cases among known population.

MATERIALS & METHODS

The present study was planned with the aim of analysing 50 mandibular fracture cases among known population. 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

Mean age of the patients was 42.5 years. Out of 50 patients, 29 were males while the remaining were females. In majority of the patients, the etiology of mandibular fracture was road traffic accident. Body of mandibular was fractured in 18 percent of the patients while angle of mandible was fractured in 16 percent of the patients. Condyle was fractured in 24 percent of the patients while symphysis was fractured in 20 percent of the patients. Ramus and coronoid fracture was seen in 8 percent and 14 percent of the patients respectively.

Table 1: Location

Location	Number of patients	Percentage of patients
Body of mandible	9	18
Angle of mandible	8	16
Condyle	12	24
Symphysis	10	20
Ramus	4	8
Coronoid process	7	14

DISCUSSION

Mandible fractures are regularly encountered by plastic surgeons and account for a significant portion of maxillofacial injuries. The majority of adult mandible fractures in the United States are related to interpersonal violence, most frequently in men aged 18 to 24 years old. A review of 13,142 patients noted that men have a fourfold higher incidence of mandibular fractures with nearly 50% arising from assault. In contrast, women sustain mandible fractures more commonly from motor vehicle accidents (MVAs) and falls. It is reported that ~25% of mandible fractures in women are secondary to falls, though domestic violence should be ruled out if the mechanism and fracture location are inconsistent with accidental trauma. In recent years the injury pattern and epidemiology of facial fractures has changed with improved safety technology in passenger vehicles. Recent reports suggest that the combination of a seatbelt and airbags decreases the likelihood of sustaining a facial fracture during a MVA by over 50%.⁷⁻⁹ Hence; the present study was undertaken for assessing 50 mandibular fracture cases among known population.

In the present stud, mean age of the patients was 42.5 years. Out of 50 patients, 29 were males while the remaining were females. In majority of the patients,

the etiology of mandibular fracture was road traffic accident. Body of mandibular was fractured in 18 percent of the patients while angle of mandible was fractured in 16 percent of the patients. Gadicherla S et al evaluated the distribution, etiology and type of mandibular fractures. A retrospective study of 689 subjects with mandibular fractures was conducted. Information on age, gender, mechanism of injury and sites of trauma was obtained from the trauma registry. Data were tabulated and analyzed statistically. A total of 653 subjects had mandibular fractures, out of which 574 were males. The mean age of the participants was 31.54 ± 13.07 . The majority of the subjects were between 21-40 years of age, in both males (61.7%) and females (54.4%). The major cause of fractures was road traffic accidents (87.4%) followed by fall (6.9%) and assault (4%), with the least frequent being gunshot injuries (0.3%). Almost half of the patients had parasymphysis fractures (50.2%), followed by angle (24.3%), condyle (20.4%), ramus (2.3%) and coronoid (2%). A total of 115 patients had bilateral fractures out of which 29 had parasymphysis, 12 had body fractures and 74 had bilateral condylar fractures. Double mandibular fractures were reported in 193 subjects; out of which 151 subjects had double contralateral and 42 had double unilateral fractures. Triple unilateral fracture was reported in only one subject. A total of 338 subjects had multiple fractures among the study population. Mandibular fractures can be complicated and demanding, and have a compelling impact on patients' quality of life.¹⁰

In the present study, Condyle was fractured in 24 percent of the patients while symphysis was fractured in 20 percent of the patients. Ramus and coronoid fracture was seen in 8 percent and 14 percent of the patients respectively. Rashid S et al assessed patterns of mandibular fractures and associated comorbidities. The 138 patients diagnosed with mandibular fractures in 2015 included 108 men (78.3%) and 30 women (21.7%), with a male preponderance of 3.6:1. Most patients (56%) were aged 15-25 years, followed by those aged 26-35 years (26%). The most frequent cause of fractures was road traffic accidents (RTAs; 59.42%), followed by falls (18.8%). RTAs were predominant in men (89%); whereas, falls were predominant in women (80%). Fractures due to firearm injuries and interpersonal violence were more frequent in men ($p < 0.001$). In patients with unilateral fractures, the most common fracture site was the parasymphysis (24.6%) followed by the symphysis (10.1%). In patients with bilateral fractures, the most common fracture sites were the parasymphysis and condyle (11.6%), followed by the parasymphysis and angle (8.0%). RTA was the most frequent cause of mandibular fracture and trauma.¹¹

CONCLUSION

Mandibular fractures are most common among middle aged males at symphysis and condylar region.

REFERENCES

1. Fridrich KL, Pena-Velasco G, Olson RA. Changing trends with mandibular fractures: a review of 1,067 cases. *J Oral Maxillofac Surg.* 1992 Jun;50(6):586-9.
2. Alkan A, Celebi N, Ozden B, Baş B, Inal S. Biomechanical comparison of different plating techniques in repair of mandibular angle fractures. *Oral Surg Oral Med Oral Pathol Oral RadiolEndod.* 2007 Dec;104(6):752-6.
3. Katz MI. Angle classification revisited 2: a modified Angle classification. *Am J Orthod Dentofacial Orthop.* 1992 Sep;102(3):277-84.
4. Neiner J, Free R, Caldito G, Moore-Medlin T, Nathan CA. Tongue Blade Bite Test Predicts Mandible Fractures. *Cranio-maxillofac Trauma Reconstr.* 2016 Jun;9(2):121-4.
5. Ellis E, Scott K. Assessment of patients with facial fractures. *Emerg Med Clin North Am.* 2000 Aug;18(3):411-48, vi.
6. Ogundare BO, Bonnick A, Bayley N. Pattern of mandibular fractures in an urban major trauma center. *J Oral Maxillofac Surg.* 2003;61(6):713-8.
7. Oikarinen K, Ignatius E, Kauppi H, Silvennoinen U. Mandibular fractures in northern Finland in the 1980s--a 10-year study. *Br J Oral Maxillofac Surg.* 1993;31(1):23-7.
8. Ogundare B.O., Bonnick A., Bayley N. Pattern of mandibular fractures in urban major trauma centre. *J. Oral Maxillofac Surg.* 2003;61:713-718.
9. Shah S.S., Abdus S. Pattern of mandibular fractures: a study conducted on 264 patients. *Pak Oral Dent J.* 2007;27:103-106.
10. Gadicherla S, Sasikumar P, Gill SS, Bhagania M, Kamath AT, Pentapati KC. Mandibular Fractures and Associated Factors at a Tertiary Care Hospital. *Arch Trauma Res.* 2016 Sep 19;5(4):e30574.
11. Rashid S, Kundi JA, Sarfaraz A, Qureshi AU, Khan A. Patterns of Mandibular Fractures and Associated Comorbidities in Peshawar, Khyber Pakhtunkhwa. *Cureus.* 2019 Sep 25;11(9):e5753.