

# Original Research

## Assessment of pattern of mandibular fractures in a known population

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### ABSTRACT:

**Background:** To assess the pattern of mandibular fractures in a known population. **Materials & Methods:** A total of 100 patients were enrolled. The number of male patients was 65 and 35 female. Age of patients was between 20 to 60 years. Mean age of patient was 42.6 years. Patients were examined clinically and radiographically in the outpatient departments of the hospital, and a detailed history was taken. The data was analysed and result was obtained using SPSS software. The level of significance was at  $P < 0.05$ . **Results:** The mandibular condyle was the most common site of fracture in this study found in a vast majority of trauma patients ( $n = 23$ , 23%) involving 19 males and 4 females followed by the mandibular angle (22%), parasymphysis (12%) and dentoalveolar. Majority of patients ( $n = 52$ , 52%) had unilateral type of mandibular fractures followed by 39 (39%) patients with bilateral fractures. **Conclusion:** Frequency of unilateral fractures was higher.

**Keywords:** mandible, fractures, pattern.

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### 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.<sup>1</sup> 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.<sup>2</sup>

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.<sup>2-5</sup> Hence, this study was conducted to assess the pattern of mandibular fractures in a known population.

### Materials & methods

A total of 100 patients were enrolled. The number of male patients was 65 and 35 were female. Age of patients was 20 to 60 years. Mean age of patient was 42.6 years. Patients were examined clinically and radiographically in the outpatient departments of the hospital, and a detailed

history was taken. The data was analysed and result was obtained using SPSS software. The level of significance was at  $P < 0.05$ .

**Results**

The mandibular condyle was the most common site of fracture in this study found in a vast majority of trauma patients (n = 23, 23%) involving 49 males and 4 females followed by the mandibular angle (22%), parasymphysis (12%) and dentoalveolar. Majority of patients (n = 52, 52%) had unilateral type of mandibular fractures followed by 39 (39%) patients with bilateral fractures. The fracture at body of mandible was 10%. Majority of patients (n = 49, 52%) had unilateral type of mandibular fractures followed by 39 (39%) patients with bilateral fractures.

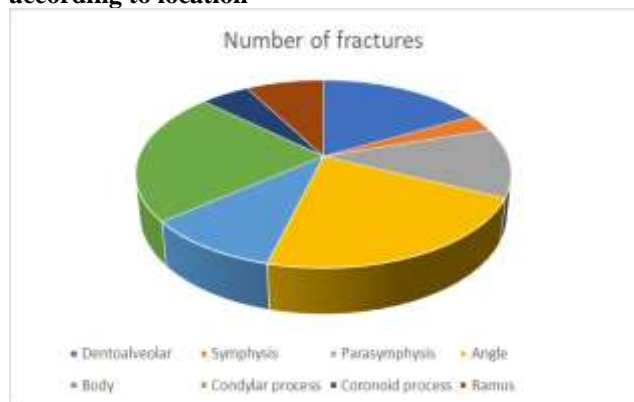
**Table 1: distribution of mandibular fractures according to location**

Site	Male	Female	Number of fractures
Dentoalveolar	10	07	17(17%)
Symphysis	02	01	03(3%)
Parasymphysis	03	09	12(12%)
Angle	11	11	22(22%)
Body	08	02	10 (10%)
Condylar process	19	04	23(23%)
Coronoid process	5	00	05(5%)
Ramus	7	01	08(8%)
<b>Total</b>	<b>65</b>	<b>35</b>	<b>100(100%)</b>

**Table2: distribution of mandibular fractures according to type**

Type of fracture	n(%)
Unilateral	52(52%)
Bilateral	39(39%)
Multiple	09 (09%)
<b>Total</b>	<b>100</b>

**Graph 1: Distribution of mandibular fractures according to location**



**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<sup>1</sup> 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.<sup>3,4,5</sup> It is reported that ~25% of mandible fractures in women are secondary to falls,<sup>1</sup> although domestic violence should be ruled out if the mechanism and fracture location are inconsistent with accidental trauma.

In our study, the mandibular condyle was the most common site of fracture in this study found in a vast majority of trauma patients (n = 23, 23%) involving 49 males and 4 females followed by the mandibular angle (22%), parasymphysis (12%) and dentoalveolar. Majority of patients (n = 52, 52%) had unilateral type of mandibular fractures followed by 39 (39%) patients with bilateral fractures. The fracture at body of mandible was 10%. Majority of patients (n = 49, 52%) had unilateral type of mandibular fractures followed by 39 (39%) patients with bilateral fractures.

In a study by Rashid S et al<sup>6</sup>, 138 patients diagnosed with mandibular fractures 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%). Another study by Samman M et al<sup>7</sup>, a total of 197 patients with fracture of the mandible were admitted in the period of the study by the Oral Maxillofacial Surgery Department, King Fahad Hospital, Madinah. 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.

## Conclusion

Frequency of unilateral fractures was higher.

## References

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