Demographic Characteristics and Etiology of Simple Mandibular Angle Fracture: Experience of 30 Cases in Dhaka City

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Abstract

Background: Simple mandibular angle fracture can occur in different group of people due to different etiology. Objective: The purpose of the present study was to find out the demographic characteristics and etiology of simple mandibular angle fracture. Methodology: This cross-sectional study was conducted in the Department of Oral and Maxillofacial Surgery at Dhaka Dental College & Hospital, Dhaka and Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh from January 2010 to December 2010 for a period of one (01) year. Among all patients admitted/attended to the hospital IPD or OPD with fracture of mandibular angle with or without other associated fracture sites were selected as study subjects. The details of demographics characteristics and etiology of fracture were recorded. Result: A total number of 30 patients were recruited for this study. Majority of the respondents 21(70%) were male and rest 09(30%) were female. Mean age of the patients was 29.5±6.795 years. Among the 30 respondents 46.7% had history of Road Traffic Accident, 43.3% due to assault and only 10% for other causes. Conclusion: In conclusion the most common etiology of mandibular angle fracture is road traffic accident. Male and younger adult are frequently encounter the mandibular angle fracture. [Journal of Current and Advance Medical Research 2018;5(2):45-48]

Keywords: Demographic characteristics; etiology; simple mandibular angle fracture

Introduction

Mandibular fractures are common facial injuries. It represent close to 25.0% of maxillofacial fractures¹. In a study, the mandibles were the second most commonly fracture sites followed by the nasal bones but less than the malar and maxillary bones². It is a very serious condition which may occur at any age group with different etiology.

Various fracture sites of the mandible are indicated in different studies. Morris et al³ reported that the
leading anatomic fractures were most commonly located at the angle (27.0%) followed by the symphysis (21.3%), condyle and subcondyle (18.4%), and body (16.8%). In relation to etiology, mandibular body fractures (MBF) represent 11.0% to 36.0% of all mandible fractures in which personal violence is the principally factor.4

The mandibular angle is the 2nd most frequent site of mandibular fracture accounts for about 25.0% to 31.0% and it also has the highest rate of complications5,6. In this direction, King et al7 showed that when co-exist two mandible fractures, the body was a third more prevalent area of fracture, after parasymphysis and condylar process. Fridrich et al8 described that the mandibular angle (28.5%) is the most common site of fractures, followed by the mandibular symphysis (21.4%), while King el al7 described that parasympyseal fractures were the most frequent, followed by condyle/head, body, and angle fractures.

The most common causes of a mandibular fracture are interpersonal conflicts or motor vehicle collisions9. Aetiological factors include road traffic accident, fall from height, interpersonal violence.10 In developing countries like Bangladesh road traffic accident is the most common aetiological factor.11 In contrast, in an evaluation of epidemiological data from two European centers, fractures resulted mainly because of assaults and falls.12 N this context this present study was undertaken to find out the demographic characteristics and etiology of simple mandibular angle fracture.

Methodology

This prospective observational study was conducted in the Department of Oral and Maxillofacial surgery, Dhaka Dental College & Hospital and Bangabandhu Sheikh Mujib Medical University from January 2010 to December 2010. Patients attended to OPD or admitted to hospital with fracture of the angle of mandible of adult age group in both sex.

Among all patients admitted/attended to the hospital with fracture of mandibular angle with or without other associated fracture sites, study subjects were recruited on the basis of inclusion and exclusion criteria. Patients with permanent dentition having simple mandibular angle fracture those had given consent to participate in this study were selected for this study. Patients who were refusing to be included in the study were excluded from this study. The details of demographics characteristics ad etiology of fracture were recorded.

Statistical analysis was performed using a statistical software package STATA Data Analysis and Statistical Software, STATA 10. The quantitative data were expressed as mean with standard deviation (SD) and the qualitative data were expressed as frequency and percentage.

Result

This study was carried out in the Department of Oral and Maxillofacial Surgery, Dhaka Dental College & Hospital and Bangabandhu Sheikh Mujib Medical University from January 2010 to December 2010. A total of 30 patients presented with mandibular angle fractures were included in the study. Majority of the respondents 21(70%) were male and rest 09(30%) were female (Table 1).

Table 1: Distribution of the respondents by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>21</td>
<td>70</td>
</tr>
<tr>
<td>Female</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Majority (60%) of the respondents were aged less then 30 years, 12(40%) were between 30 to 50 years of age. Mean age of the patients was 29.5±6.795 years and median 30 years (Table 2).

Table 2: Distribution of the respondents by age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;30 Years</td>
<td>18(60.0%)</td>
</tr>
<tr>
<td>30 to 50 Years</td>
<td>12(40.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>30(100.0%)</td>
</tr>
</tbody>
</table>

Mean±SD (Range) 29.5±6.795 (17 to 43)

Data were expressed as mean ± SD and Range

Among the 30 respondents 46.7% had history of Road Traffic Accident, 43.3% due to assault and only 10% for other cases (Table 3).

Table 3: Distribution of the respondents according to Etiology

<table>
<thead>
<tr>
<th>Causes mandibular angle fracture</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Traffic Accident</td>
<td>14</td>
<td>46.7</td>
</tr>
<tr>
<td>Assault</td>
<td>13</td>
<td>43.3</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Discussion

Maxillofacial trauma is one of the leading causes of admission of patients in the emergency department of most hospitals around the world. Mandibular fracture is one of the most common trauma injuries. It is of great interest because of its high incidence, high rate of morbidity, disfigurement and the loss of function involved, and significant monetary cost represented by the need for hospitalization and treatment. Moreover, the possible concomitant fractures of other body parts should also be taken into consideration.

Angle fractures occur in a triangular region between the anterior border of the masseter and the pterygoid muscles, which distract the proximal segment superomedially. Recent evidence evaluating the favorability of angle fractures shows that there is no need to apply different treatment modalities to mandibular fractures regardless of whether the fractures are favorable.

This prospective study was carried out in the Department of Oral and Maxillofacial Surgery, Dhaka Dental College & Hospital and Bangabandhu Sheikh Mujib Medical University from January 2010 to December 2010 with a sample size of 30 patients presented with non-committed simple mandibular angle fractures with or without displacement. A total of 30 patients presented with mandibular angle fractures were included in the study. Majority of the respondents 70.0% were male and 30.0% were female. Most of the patients were male in each group. Findings are almost similar with other studies in the country.

In Bangladesh, a case series of 125 patients with mandibular fracture has been reported. Male and younger adult are frequently encountered in the mandibular angle fracture. Further rigorously