# Original Article:

# A Retrospective study on fracture of the mandible in the D.O.P.D of Rangpur Medical College Hospital.

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## Abstract

**Aims and 0bjective of present study:** A retrospective study was performed involving 480 patients of fracture mandible who were attended in dental O.P.D of Rangpur Medical College Hospital during the period 2010 to December 2013. The aims of this study to analyze the fracture mandible cases and treatment modality by miniplate osteo synthesis. To evaluate causes, sites and different ages of fracture of mandible. **Methods**: Retrospective study of data were collected from the patients record file of dental O.P.D during the period January 2010 to December 2013.**Result:** A total of 480 cases were studied where miniplate immobilization were made in 288 cases. Arch bar immobilization were made in 144 cases and rest 48 cases eyelet wiring. Among the 288 case male female ratio was 2:1. The treatment modality relation to patient was same in number for male patients by mini plate immobilization where as arch bar immobilization was same for female patient in number. The reason behind may be due to fear of operation by female patient. The results are shown in pie chart and bar diagram. **Conclusion:** Using this research results, a great effort was made to provide better management of fracture mandible patient to the population of at or around the city of Rangpur.Mandibular fracture were more present in male between 20 to 30 years rta was about 50% cases. Rigid internal fixation by monocortical mini plate osteo synthesis provide good long time results and satisfactory cosmosis without any significant sequela[8].The more frequently affected region were symphysis menti and angle of mandible.

**Keyword:** Mandibilar fractures, mini plate immobilization, arch bar immobilization, trauma.

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## Introduction:

The mandible is the largest heaviest and strongest bone of the face[1]. Fracture of the jaws occur most often because of automobile collisions, industrial or other accidents fights. Since the mandible is a hoop of bone articulating with the skull at its proximal

ends by two joints and since the chin is a prominent feature of the face, the mandible is prone to fracture[2]. Mandible fracture are most among the common injuries to the facial skeleton[3-4]. Approximately two thirds of all facial fracture are the mandibular fracture (nearly 70%)[5]. The primary goal of management in such cases is the realignment of the fracture segment and restoration of which aids healing of fractured segments[6].

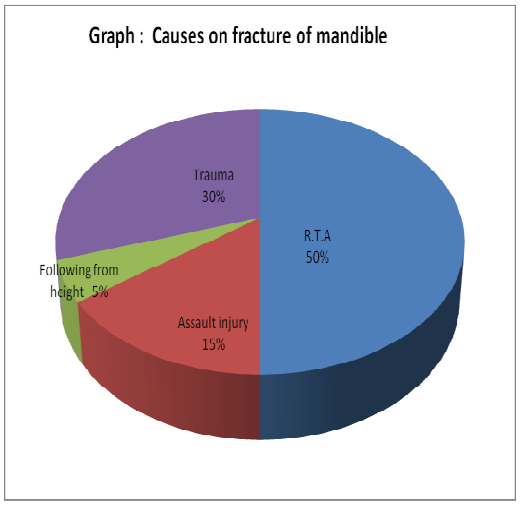


Figure 1 shows causes of fracture of mandible are RTA 50%, Trauma 30%, Assult injury 15% and falling from height 5%.

| | | |
|---|---|---|
| No. of Cases | : | 480 |
| Site | : | |
| Symphysismenti | | - 40% = 192 |
| Para symphysis | | - 20% = 96 |
| Angle of mandible | | - 20% = 96 |
| Neck of condylev | | - 20% = 96 |

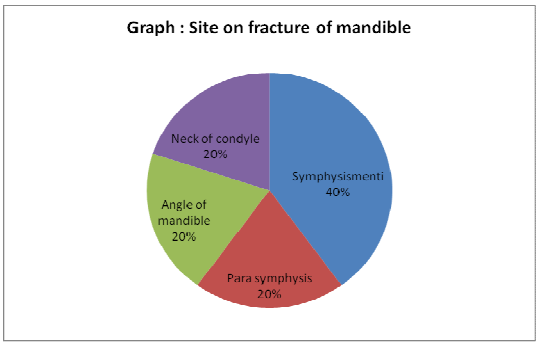


Figure 2 shows site of fracture of andible are symphysis menti 40%, Parasymphysis 20%, Angle of mandible20%, Neck of the condyle 20%.

**Distribution of respondent according to gender and child**

n=480

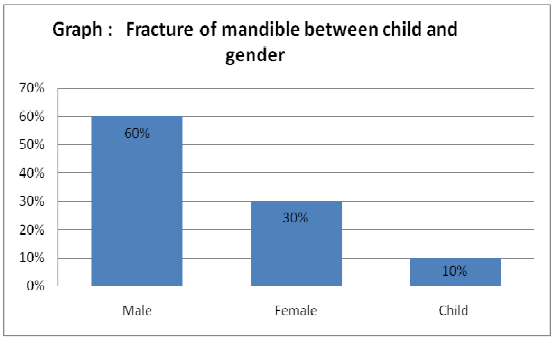


Figure 3 shows fracture of mandible are 60% male, 30% female and 10% child

**Distribution of respondent according to age with fracture of mandible**

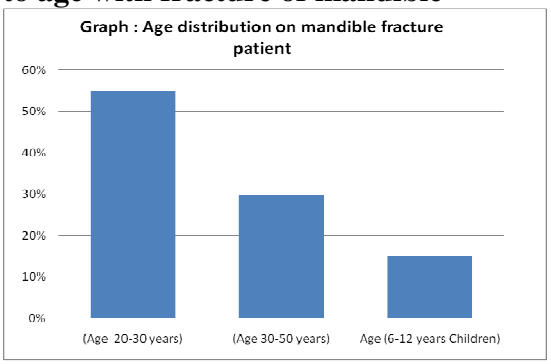


Figure 4 shows 55% of respondent were 20-30 years, 30% were 30-50 years and 15% were 6-12 years.

**Methodology**:

This retrospective study was conducted at D.O.P.D of Rangpur Medical College Hospital from January 2010 to December 2013 a four year study. Total population of the case was 480. Sample was collected purposively. Data was collected from patient registrer of hospital record. Prior permission was obtained from the ethical committee of the hospital to carry out the study. Patient were divided in to three group according to age of the patient. This study will provide a birds eye view of the fracture mandible for the patient of the D.O.P.D. at Rangpur Medical college Hospital.

The data was analyzed with statistical software statistical package for social science (SPSS). Data were analyzed and presented with table and graph cross tabulation and chi- square test were done.

**Distribution of respondent according to treatment given of fracture mandible**

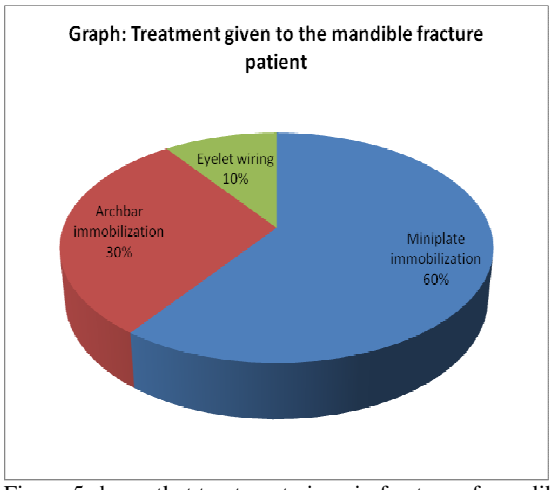


Figure 5 shows that treatment given in fracture of mandible were 60% by mini plate immobilization, 30% by arch bar immobilization and 10% by eyelet wiring.

**Discussion:**

The mandible is not only the strongest and heaviest facial bone but also very prone to fracture[7]. In our study the majority of fractures of the mandible occurred in the age between 20-30 years. Male predominant was seen over females. RTA has lead to icreased incidence of mandible fracture. In our study no pathological fracture of mandible was encountered. In our study we have found the maximum number of cases symphysis menti 40% parasymphysis 20% angle of mandible 20% and neck on the condyle 20%

In this study much of the information are related to site, cause and treatment received in different age group of patient. This study reveal that among the patient the site of fracture was 40% in symphysis menti area; 20% parasymphysis, 20% angle of the mandible, and remains 20% in the neck of the condyle.according to kruger a study of 540 fracture jaw case at district of Columbia general hospital revealed that physical violence was responsible for 695 of the fracture; accidental cause 27% ( including auto vehicle accident 12% and sport 2%) and pathology 4%.
This retrospective study shows 50% case as road accident, trauma 10%, fall from height 5%, and rest are 15% for assult injury which is not consistent with the study at Columbia hospital may be due to lack of consciousness and education of the people in rural area of Bangladesh.Further study is suggestive. Gender and age distribution are shown in fig 3 and 4.

**Table 1- Distribution of respondent acco -rding to age and Sex of the Patient**

**Crosstab 1**

Count

| | | Sex of the Patient | | Total |
|---|---|---|---|---|
| | | Male | Female | |
| Age Group of the Patient | (20-30 Years) | 177 | 87 | 264 |
| | (30-50 Years) | 71 | 73 | 144 |
| | (06-12 Years) | 48 | 24 | 72 |
| Total | | 296 | 184 | 480 |

Table 1 shows: 177 male and 87 female were 20-30 years, 71 male and 73 female were 30-50 years and 48 male and 24 female were 6-12 years old

**Table2: Distribution of respondent according to site on fracture of mandible and sex of the patient.**

**Crosstab**

Count

| | | Sex of the Patient | | Total |
|---|---|---|---|---|
| | | Male | Female | |
| Site on fracture of mandible | Symphysismenti | 126 | 66 | 192 |
| | Para symphysis | 52 | 44 | 96 |
| | Angle of mandible | 64 | 32 | 96 |
| | Neck of condyle | 54 | 42 | 96 |
| Total | | 296 | 184 | 480 |

Table 2 shows that 126 male and 66 female were fractures of symphysis menti, 52 male 44 female were fracture of para symphysis, 64 male and 32 female were fracture of angle of mandible and 54 male and 42 female were fracture of neck of condyle.

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 16.193[a] | 3 | .001 |
| Likelihood Ratio | 16.493 | 3 | .001 |
| Linear-by-Linear Association | 7.198 | 1 | .007 |
| N of Valid Cases | 480 | | |

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RTA is significant cause of fracture of mandible (P<0.001)

**Table 3: Distribution of respondent according to causes on fracture of mandible sex of the patient.**

**Crosstab**

Count

| | | Sex of the Patient | | Total |
|---|---|---|---|---|
| | | Male | Female | |
| Causes on fracture of Mandible | R.T.A | 130 | 110 | 240 |
| | Assault injury | 54 | 18 | 72 |
| | Falling from height | 12 | 12 | 24 |
| | Trauma | 100 | 44 | 144 |
| Total | | 296 | 184 | 480 |

Table 3 shows that causes of fracture of mandible were RTA 240, assult injury 72, falling from height 24 and trauma

**Table 4: Distribution of respondent according to treatment given to the patient and sex of the patient**

**Crosstab**

Count

| | | Sex of the Patient | | Total |
|---|---|---|---|---|
| | | Male | Female | |
| Treat given to the Patient | Miniplate immobilization | 272 | 16 | 288 |
| | Archbar immobilization | 0 | 144 | 144 |
| | Eyelet wiring | 24 | 24 | 48 |
| Total | | 296 | 184 | 480 |

Table 4 shows that treatment given were 272 male and 16 female mini plate immobilization, 144 female arch bar immobilization and 24 male and 24 female by eye let wiring

## Conclusion:

Using this research results, a great effort was made to provide better management of fracture mandible patient to the population of at or around the city of Rangpur.

Mandibular fracture were more present in male between 20 to 30 years rta was about 50% cases. Rigid internal

fixation by monocortical mini plate osteo synthesis provide good long time results and satisfactory cosmosis without any significant sequela[8].The more frequently affected region were symphysis menti and angle of mandible.

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