

## Management of Mandibular Fractures in Kurnool General Hospital, Kurnool

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### I. Introduction

- The increasing number of vehicles and the deleterious condition of roads has led to a significant increase in craniofacial trauma.
- Mandible fractures occupy the most frequent facial bone fractures.
- The mandible is a resistant bone and it takes a relatively heavy impact to fracture.
- Apart from road traffic accidents (RTA) can also be a consequence of assaults, bullet injuries, work-related accident and pathological conditions

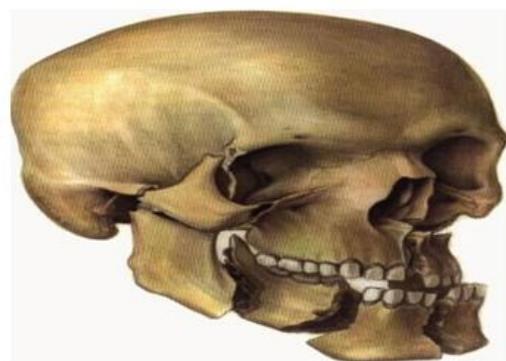
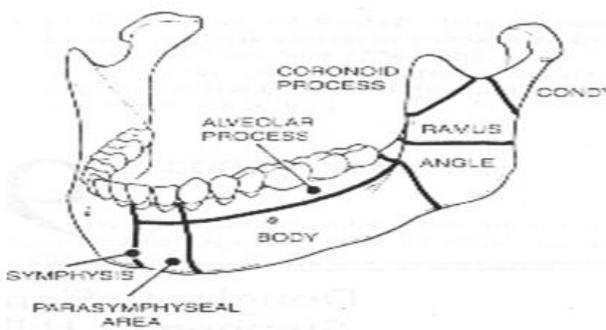
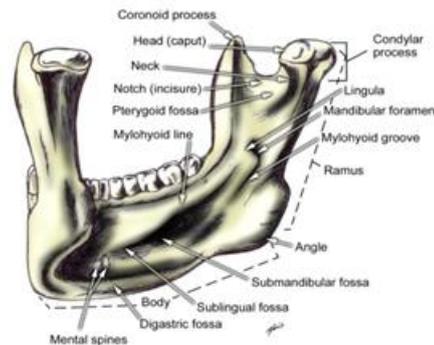
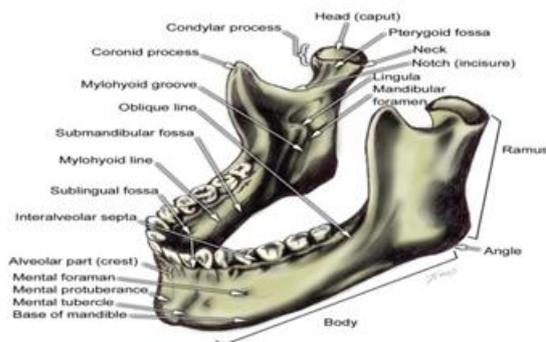
### Aim:

Management of mandible fractures at Kurnool General Hospital

### II. Materials And Methods

- 196 Patients admitted with Mandible Fracture at Osmania General Hospital, Hyderabad for a period of 20 months i.e from September 2010 to May 2012 were analysed regarding the patients age, sex, mechanism of injury, treatment modality & post-operative complications .

### III. Anatomy



### Sites Of Weakness

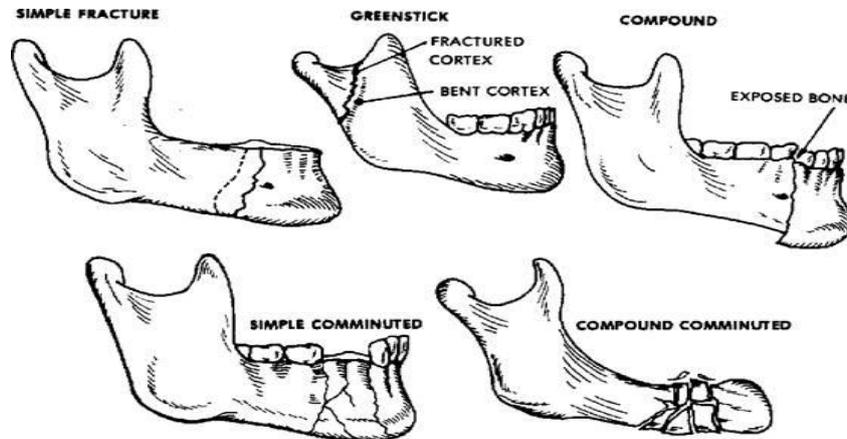
- Canine Socket
- Neck Of The Condyle

- Third Molar Region

**Types of fracture**

- Simple
- Displaced fracture
- Comminuted fracture
- Compound fracture
- Pathological fracture

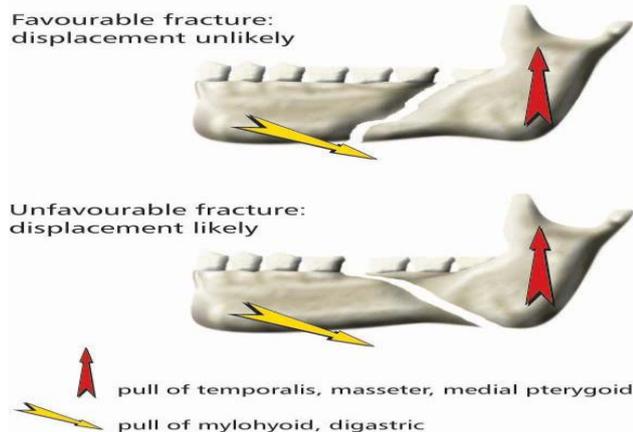
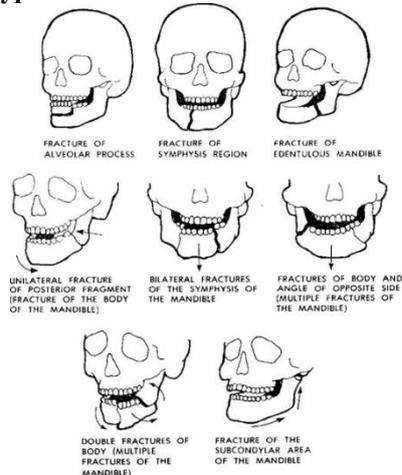
**Types of mandibular fractures**



**Sites of fractures**

- Condyle fracture
- Angle/ ramus fracture (body fracture)
- Canine region (parasymphesial fracture)
- Midline fracture (symphesis fracture)
- Coronoid fracture (rare)

**Types of mandibular fractures**



**Horizontally Favorable**

fractures that are directed downward and forward.

**Horizontally Un Favorable**

fractures running from above, downward and posteriorly

**Vertically Favorable**

The fracture that passes from the lateral surface of the mandible posteriorly and medially because the muscle pull tends to prevent displacement.

### **Vertically Unfavorable**

the fracture runs from posteriorly forward and medially, displacement would take place in a medial direction because of the medial pull of the elevator muscles of mastication.

### **Clinical assessment and diagnosis**

- History of trauma (traumatized patients with possible head injury) and facial injuries
- Clinical Examination

#### **► Extra oral**

Inspection (assessment of asymmetry, swelling, ecchymosis, laceration and cut wounds)  
Palpation for elicitation of tenderness, pain, step deformity and malfunction

#### **► Intra- and paraoral**

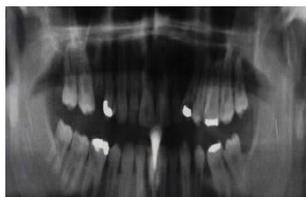
bleeding, hematoma, gingival tear, gagging of occlusion and step deformity and sensory and motor deficiency

- The most consistent physical finding is dental malocclusion.
- It may be lateral cross bite or anterior open bite.
- Complete workup of the patients was done which included a detailed history and hematological and urine examination.
- Radiological investigation was based on the site of injury and the presenting clinical features.

Computed tomography (CT) scans were performed in cases of concomitant head injury and / or pan facial trauma cases

### **Radiographs**

- **Plain radiograph**
- OPG
- Lateral oblique
- PA mandible
- AP mandible (reverse Townes)
- Lower occlusal
  
- **CT scan**



### **Principles of treatment**

Reduction of fragments in good position

Immobilization until bony union occurs

These are achieved by

- : Close reduction and immobilization
- Open reduction and rigid fixation

### **Conservative Management**

- With Undisplaced Asymptomatic Fractures, Treatment Consists Of Periodic Observation And A Mechanically Soft Diet For 3-6 Weeks.

### **Closed reduction**

Dental wiring

For Minimal displacement

IMF for 3 weeks

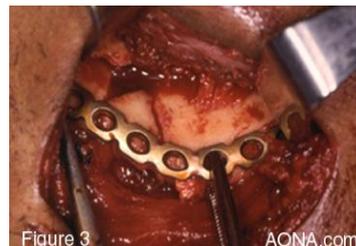
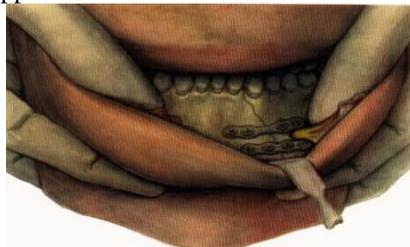


### Closed Reduction

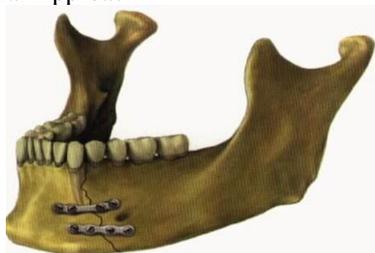
- Favourable And Mildly Displaced Fractures
- Grossly Comminuted Fractures
- Severly Atrophic Edentulos Mandible
- Fractures In Children With Developing Dentition
- Arch Bar And Imf For 3 Weeks
- We Remove Imf For 3 Weeks And Archbar After 4 Weeks And Follow The Patient For Further 2 Weeks.
- After Removal Of Imf We Start Mouth Opening Exercises And Soft Diet.
- In Condylar And Subcondylar Fractures We Remove Imf After 2 Weeks

### Open Reduction And Rigid Fixation

- Intra Oral Approach



- Extra Oral Approach



### Open Reduction

- Un Favourable And Displaced Fractures
- Associated Midface Fractures
- When Imf Is Contraindicated Or Not Possible

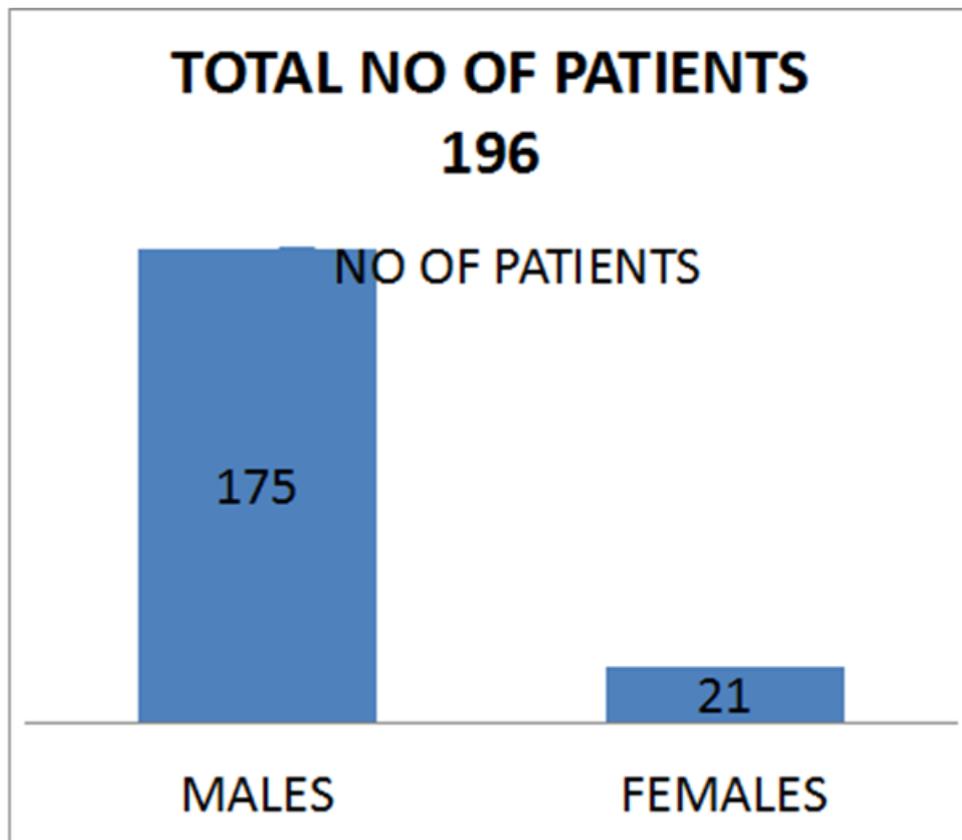
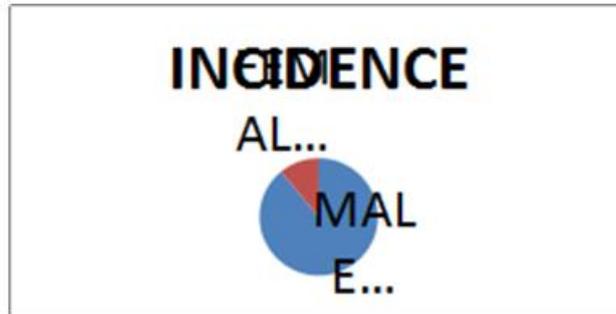
### CONTRA INDICATIONS FOR OPEN REDUCTION

- Severe Comminution And Stabilization Not Possible.
- No Soft Tissue Cover
- Too High Anesthetic Risk

**IV. Results**

- The Male To Female Ratio Is 7.3:1
- A Total Of 196 Patients Were Admitted Out Of Which 175 Are Male Patients And 21 Female Patients.
- Males Comprise Of 89%
- Females Comprise Of 11%

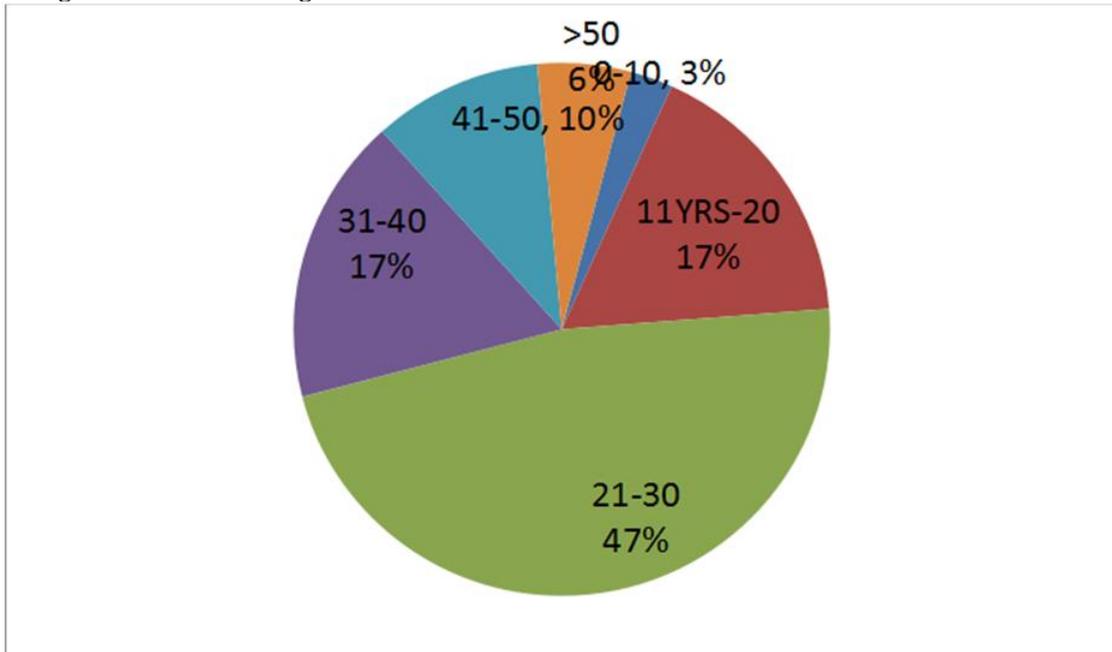
**Incidence Of Sex In Mandible Fractures**



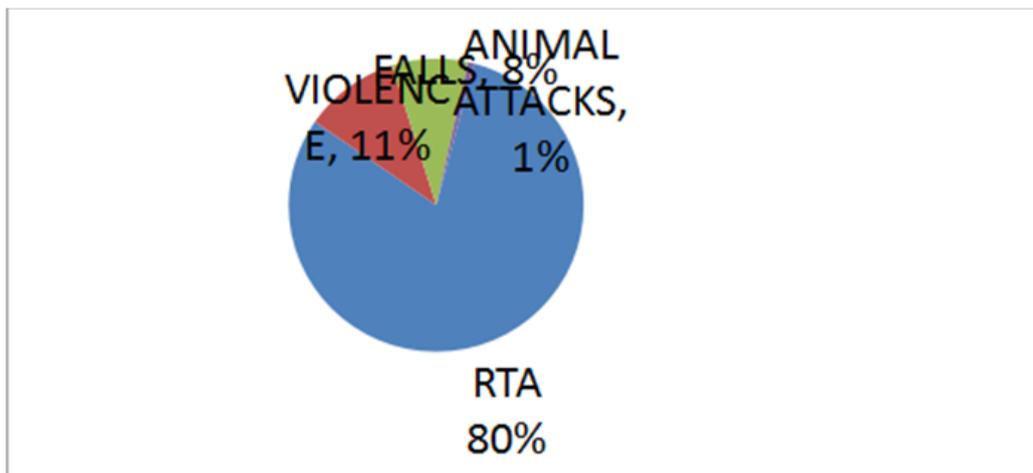
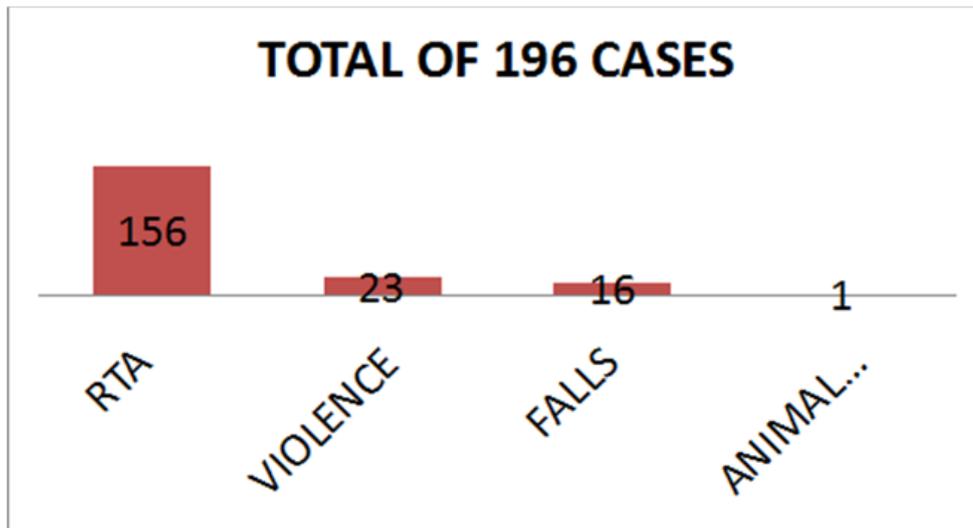
**Incidence Of Age**

0-10 YEARS	7
11-20 YEARS	39
21-30 YEARS	59
31-40 YEARS	47
41-50 YEARS	30
>50 YEARS	14

Percentage Of Incidence Of Age

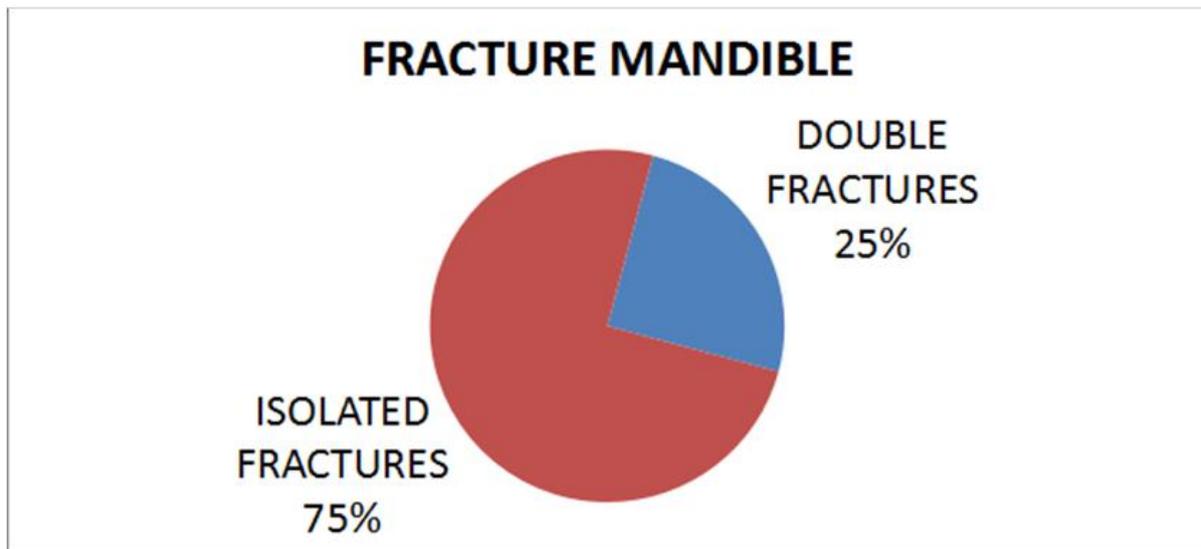
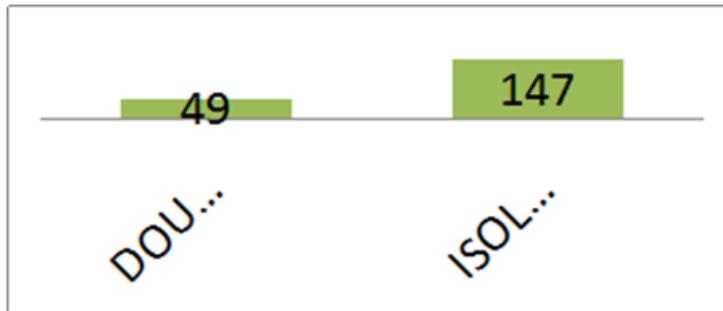


Aetiology Of Fracture Mandible



- 49 Patients Have Double Fractures
- Remaining Patients Had Isolated Fractures Of Mandible

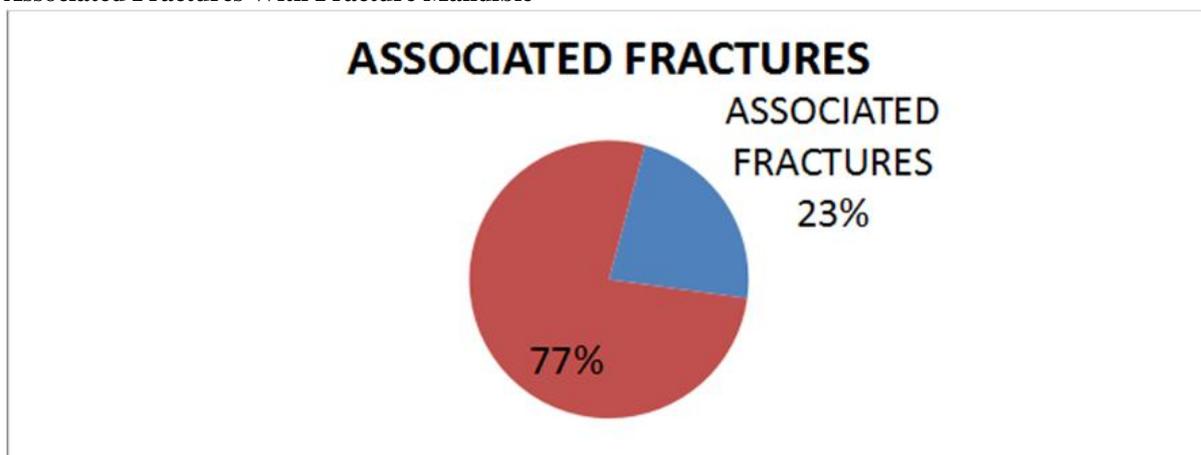
**Double Fracture**



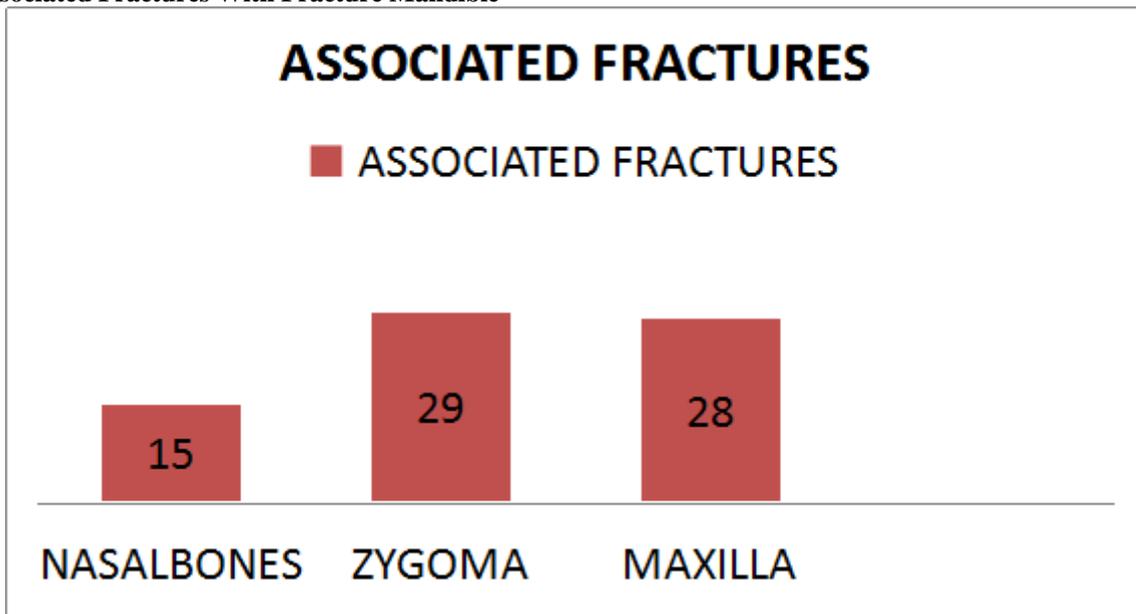
**Associated Fractures**

- 46 Patients Had Associated Fractures Which Includes Maxilla, Zygoma And Nasal Bones

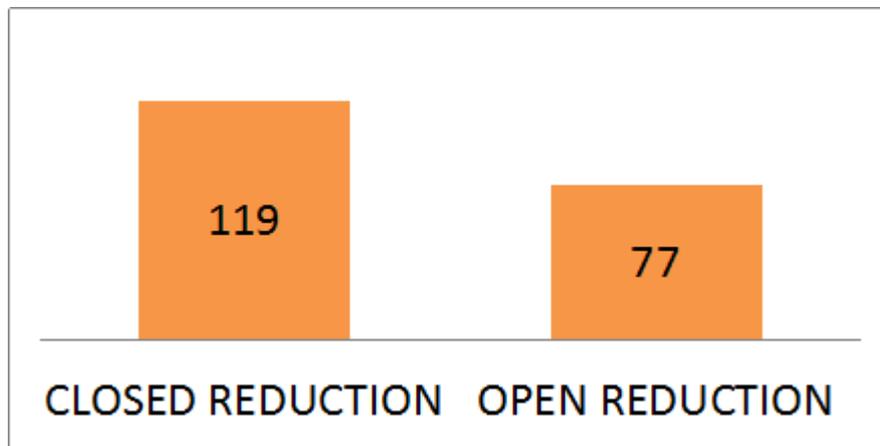
**Associated Fractures With Fracture Mandible**



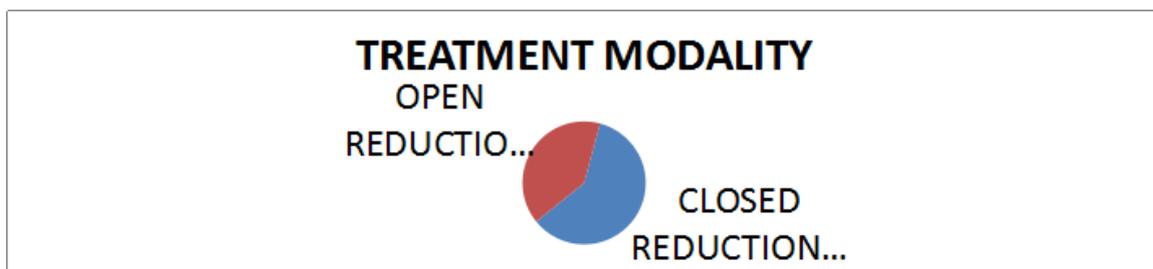
Associated Fractures With Fracture Mandible



Treatment



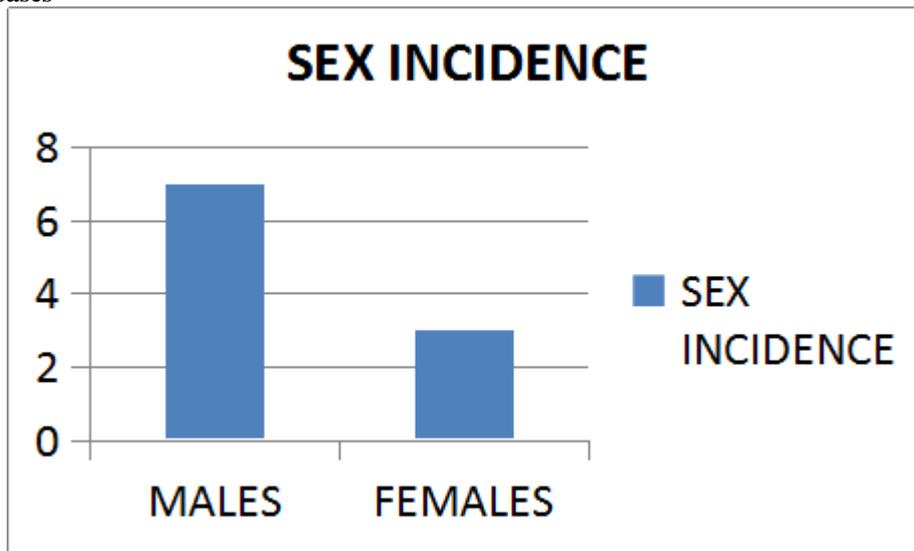
- Closed Reduction Was Done In 119
- Open Reduction Was Done In 77 Cases



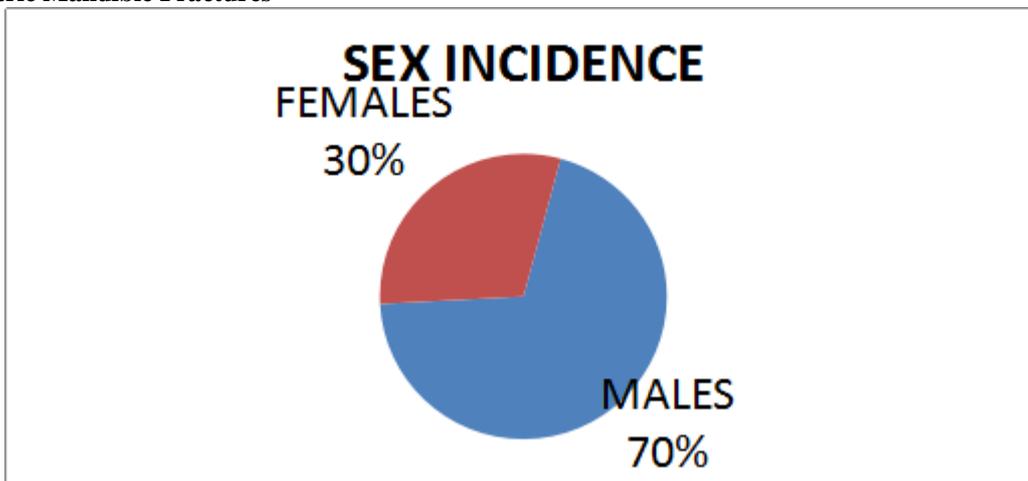
Paediatric Mandible Fractures

- Ten Patients Were Treated With Capsplinting.
- Age Group Is <10 Years
- It Includes 5.1% Of Total Cases

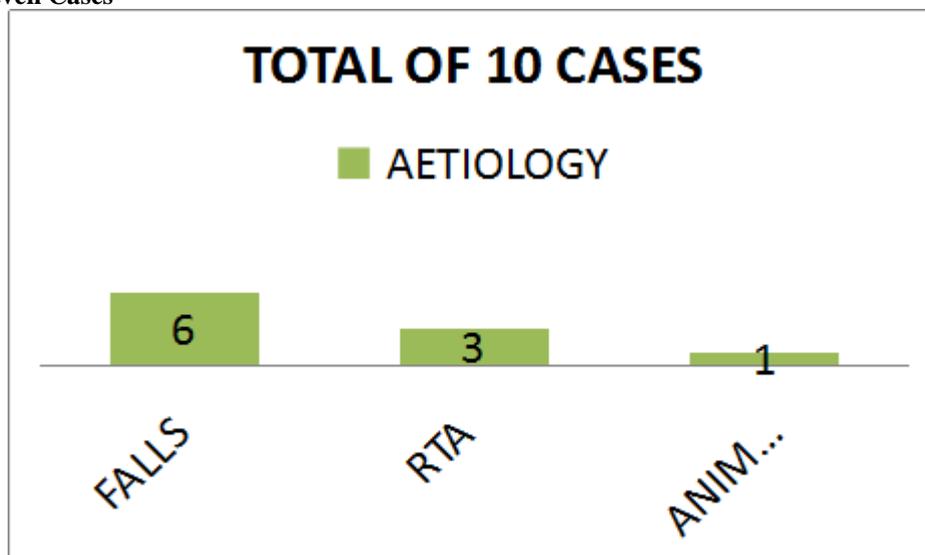
Total Of 7 Cases



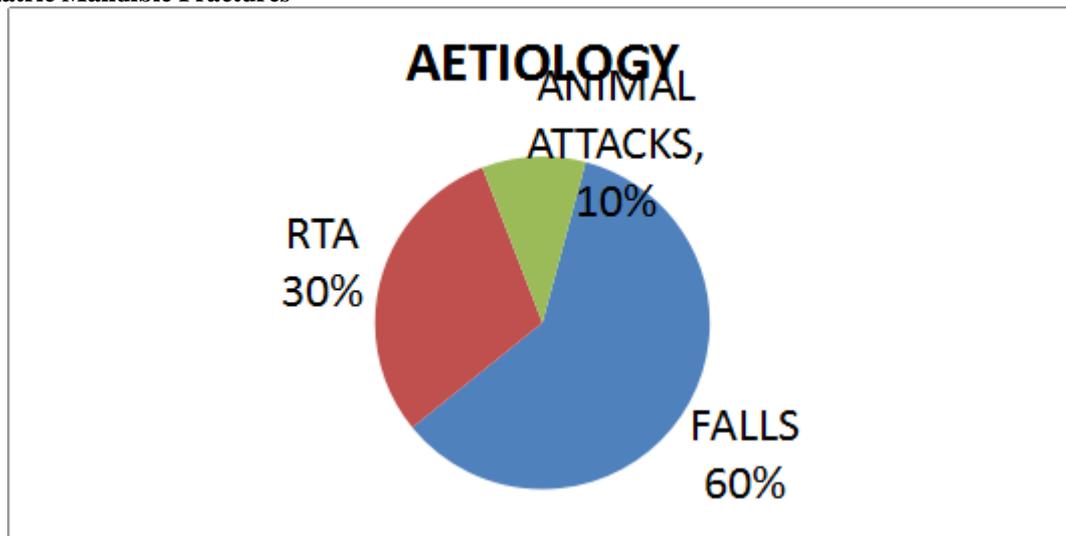
Paediatric Mandible Fractures



Total Of Seven Cases



### Paediatric Mandible Fractures



### Complications

- 5 Patients Had Malocclusion.
- 4 Patients Had Exposed And Infected Implants .
- 1 Patient Had Nonunion.

### Minor Complications Of Closed Reduction

- Wires and Braces used to stabilize the teeth may damage the teeth either by cutting into the crowns or by causing severe gingivitis of the roots.
- It is often difficult for patients to clean around the arch bars.
- Wires used to wire the jaws together can dig into the cheeks and gums

### Minor Complications Of ORIF

- Sensory nerves or nerves to the lip can be cut, stretched, or otherwise injured resulting in numbness or paralysis
- Holes drilled for screws can injure teeth

### V. Conclusion

- The canine(parasymphysis) region is the most commonly fractured mandible bone accounting for 70% of the cases.
- The 21–30 years age group is the most affected.
- Male and female ratio was 7.3:1.
- The most common cause was RTA (80%).
- Associated fractures includes 25% of cases.
- Closed reduction was the common mode of treatment.
- Malocclusion was the common complication.