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 Edentulous 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 Communion 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

<table>
<thead>
<tr>
<th>Incidence Of Age</th>
<th>No Of Patients</th>
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<tbody>
<tr>
<td>0-10 YEARS</td>
<td>7</td>
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<tr>
<td>11-20 YEARS</td>
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<td>21-30 YEARS</td>
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<td>41-50 YEARS</td>
<td>30</td>
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<td>&gt;50 YEARS</td>
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Percentage Of Incidence Of Age

Aetiology Of Fracture Mandible
• 49 Patients Have Double Fractures
• Remaining Patients Had Isolated Fractures Of Mandible

**Double Fracture**

- **49**
- **147**

**FRACTURE MANDIBLE**

- **DOUBLE FRACTURES** 25%
- **ISOLATED FRACTURES** 75%

**Associated Fractures**

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

**Associated Fractures With Fracture Mandible**

- **ASSOCIATED FRACUTRES**
  - **ASSOCIATED FRACTURES** 23%
  - **77%**
Associated Fractures With Fracture Mandible

- 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

**SEX INCIDENCE**

- MALES: 8
- FEMALES: 2

Paediatric Mandible Fractures

**SEX INCIDENCE**

- MALES: 70%
- FEMALES: 30%

Total Of Seven Cases

**TOTAL OF 10 CASES**

- FALLS: 6
- RTA: 3
- ANIM...: 1
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(parasympysis) 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.