ABSTRACT

Facial injury is the most common cause of disfigurement. The most frequently injured facial bone is mandible after nasal bone because it is the most mobile and prominent facial bone. The mandibular fractures outnumbers zygomatic and maxillary fractures by a ratio of 6:2:1 respectively. Fractures of mandible invariably produce malocclusion if not treated properly. Restoration of the occlusion usually indicates anatomic reduction and proper positioning of the mandible and facial bones.

Various techniques that are advocated in the literature to manage mandibular fractures vary ranging from bandages and external appliances, extra oral and intraoral appliances, mono maxillary wiring, intermaxillary wiring, plates and screws.

Aim of the project is to analyze the outcome of mandibular fracture fixation with eyelets, arch bars, miniplates and screws and assess the stability of the fixation, occlusion after fixation comparing the jaw dysfunction before and after treatment and post operative sequalae – such as post operative pain, bony and soft tissue infections, nonunion, nerve injury, osteomyelitis, malocclusion, and malunion.

This study was conducted in the Department of Plastic and Reconstructive Surgery, Coimbatore Medical college and Hospital, Coimbatore on 67 patients who reported to the trauma ward and the department of plastic and reconstructive surgery for the treatment of fracture mandible from December 2012 to December 2014. Before starting the study, ethical clearance was obtained from the Ethical committee of the Coimbatore Medical College and Hospital, Coimbatore. Informations were collected from the clinical and surgical notes of each of the patients. The demographic variables such as age, gender, and residence were assessed.
Clinical informations such as diagnosis, etiology, and anatomical distribution of mandibular fractures was assessed.

**INCLUSION CRITERIA**

All adult patients between 25 to 55 years, patients reporting within first 7-10 days from the day of trauma, dentulous/partially dentulous patients and patients giving consent for the follow up period of 3 months post operatively were included in the study.

**EXCLUSION CRITERIA**

Compound fractures, patients with other facial bone fractures, patients with systemic/debilitating diseases and patients with head injury were excluded.

During the clinical evaluation, history of incident, swelling, laceration, malocclusion, sublingual hematoma, deformity and trismus, step deformity, tenderness, Paresthesia/dysaesthesia/anesthesia of mental nerve and TMJ examination were assessed.

All patients with suspected mandible fracture were subjected to OPG (Orthopantomogram) & CT facial bones. The mandibular fractures were classified according to the site such as Ramus, Condyle, Symphysis, Body, Parasympysis and Angle.

Out of 67 patients, 15 patients who had undisplaced fractures, Condylar & Subcondylar fractures were treated conservatively with arch bars, eyelets and Maxillomandibular fixation (MMF) for 4-6 weeks. Post MMF OPG was taken to assess the reduction. The remaining 52 displaced, unfavorable and Commnited fractures were treated surgically.

Arch bars and MMF were done preoperatively for all the cases to achieve conclusion. Extra oral approach (Risdon) was used for the angle fracture. Intra oral approach (gingivobuccal
sulcal approach) was used for the Symphysis, Parasymphysis and body the fractures. Conventional non locking miniplates (2mm) and screws (2x8mm) were used.

In cases where 2 miniplates were used, MMF was removed soon after the surgery. In cases where single plate was used, MMF retained for 2 wks. Arch bars maintained for 4 more wks. In fractures with combinations like Parasymphysis and Subcondyle, plating was done only for the Parasymphysis and the Subcondyle treated conservatively with MMF for 2-3 weeks.

Those for whom MMF was removed they were advised to take liquid diet for 2 days and thereafter on a soft diet for 4 to 6 weeks. Those who were advised to maintain MMF, continued liquid diet for 2-3 weeks. The patients were asked to maintain oral hygiene with mouth wash. Sutures were removed on the 5th postoperative day for patients who had underwent extra oral approach. At the end of second post operative week they were started on gentle physiotherapy. Follow up was performed weekly during the first 6 weeks and thereafter monthly for 4 to 6 months.

During the follow up the following parameters were recorded.

1. Resolution of facial edema.
2. Healing of surgical sites.
3. Sensory, motor disturbances.
4. Visual analog score for pain
5. Visual analog score for chewing ability
6. Angle criteria for occlusion
7. Mouth opening

In single fracture, the results both in the surgical and conservative groups are equal.
Conservative group took longer time for improvement than surgical group, since we maintain MMF for 4-6 Weeks. In double and segmental fracture, surgical management had good outcome with double plate fixation.

**Key words**: Maxillo mandibular fixation, orthopantamogram, visual analog scale and arch bars.