



Mal-united Mandible fracture- a case report and literature review

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ABSTRACT

Mandible fracture is usually treated primarily with miniplates, lag screws or Kirschner's wire with or without maxilla mandibular fixation (MMF). The timing of surgical treatment is determined by multitude of factors including neurological and general condition of the patient.

A delay in treatment at times may cause complications like non-union and malunion with occlusal abnormalities and disturbance in temporomandibular joint function. Here we are presenting a case of Mandible fracture that went into malunion due to delay in treatment. The malunited fracture was successfully repaired with a good occlusion.

Case Report:

A 22 year old lady presented to our hospital, a tertiary care centre, with the malunited mandibular fracture due to a road traffic accident two months back. The accident occurred due to skid and fall of a two wheeler, which she was riding as pillion with her husband. Her husband lost his life in the accident while the lady suffered a multiple injuries which included a right clavicle fracture, left parasymphiseal mandible fracture and concussion injury. She was managed at another hospital in the initial phase where the intervention for the jaw fracture was delayed due to unstable neurological status. She developed a malunion of the fracture as shown in the figure 1. At this point she presented to us.

Neurosurgical clearance was obtained and the orthopaedic opinion was sought, who advised for conservative management of the right clavicle fracture. The patient was investigated thoroughly with Computed tomography scan of the skull and blood analysis and was planned for Open reduction and internal fixation under GA with nasal intubation after obtaining anesthetist's clearance.



Fig 1: Mal united Mandible Fracture

The fracture site was exposed by intraoral approach. The incision was made over the mucogingival junction extending from lateral incisor to 1st molar. The fracture line was skeletonised. The canine and the first premolar teeth were removed as it was over the fracture line with grade 3 mobility. The malunion was refractured [figure 2]. Fibrous tissue was cleared and the fracture margins were freshened. The fractured segments of the mandible were realigned and rigid fixation was done with 2mm miniplates. The mandible was further stabilized by maxillary mandibular fixation with the aid of interdental wiring over Erich bars [figure 3].



Figure 2: The exposed fractured line was refractured with the aid of drill and osteotome.



Fig 3 showing fractured mandible stabilized with interdental wiring and miniplates

Interdental wiring was removed and mandible was mobilized after 3 weeks. The patient had a good occlusion and mouth opening of 4.0 cm after the removal of the wires [figure 4,5].



Figure 4 showing good occlusion obtained after removal of interdental wiring with a well healed fracture segment



Figure 5 showing good occlusion obtained after removal of interdental wiring

Discussion:

Mandible is an often fracture bone in road traffic accidents and assaults with high impact trauma. The standard protocol of management is to take care of airway, circulation and breathing first. Thereafter any neurological insult is taken care of first as facial fractures are often associated with intracranial injuries. The patient should be thoroughly evaluated for any concomitant injuries to other parts of the body. More often than not such patients tend to have multiple fractures.

Ideally, the mandible fracture is treated within 48 hours of the injury but studies have shown that a delay in repair beyond 48 hours does not cause any statistically significant complication [1]. This case was exceptional in getting treatment delay of more than 2 months due to initial neurological insult and thereafter due to neglect on the part of family members. The delay resulted in a malunion of the mandible which is a known complication in such scenarios [2].

The main aim of mandible fracture reduction is to obtain good occlusion and cosmesis. Considering these aims, the patient was planned for open reduction of the fracture and fixation by miniplates [3]. Although there have been studies demonstrating that interdental wiring may not be a necessity in repair of mandible fractures [4,5], we went ahead with interdental wiring and MMF to provide further stability to the fracture site to avoid complications like non-union, which is one of the most common complication post mandible fracture reduction [6].

The patient did well in the post operative period and had a good occlusion and mouth opening once the wires were removed. At 6 months follow up, she was gradually inching towards some degree of normalcy in her life.

Conclusion:

Mandible performs a number of important functions enabling a person to articulate, express, chew and eat. All of the above functions are highly important for leading a normal life. This case demonstrates the effect that neglect of such a fracture can lead to. It also emphasizes the importance of early identification and intervention in such cases to avoid such complication. Further, even though such complications may occur, they are manageable by the conventional treatment modalities using miniplates and interdental wiring and good results are obtainable.

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