



OPTIMAL MANAGEMENT OF MANDIBULAR PARASYMPHYSIS FRACTURE: A CASE REPORT

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Abstract

Mandibular fractures represent a prevalent form of facial skeletal injury, often resulting in compromised occlusion and functional deformities. The primary objective of treatment involves restoring proper occlusal alignment and function while promoting direct bone healing through precise reduction and immobilization of the fracture site. Herein, we present the case of a 30-year-old male patient who sustained a mandibular parasymphysis fracture following an assault. Our treatment approach involved local anesthesia administration, followed by intermaxillary fixation (IMF) and open reduction internal fixation (ORIF) utilizing stainless steel plates. This method facilitated effective restoration of occlusal integrity and functional stability, thereby addressing the sequelae of the mandibular fracture.

Index Terms: Mandibular fractures, parasymphysis fracture, assault, local anesthesia, intermaxillary fixation (IMF), open reduction internal fixation (ORIF), stainless steel plates, occlusion, functional deformity.

INTRODUCTION

Mandibular fractures, prevalent in trauma cases primarily arising from vehicular accidents and physical confrontations, pose significant challenges in healthcare management. Epidemiological data reveals a near-equivalent occurrence between single and multiple fractures, with a subset presenting with more intricate injury patterns. Functionally, the mandible's response to external forces mirrors that of an arch, albeit with structural irregularities including sharp ridges, variable cross-sectional dimensions, and distinct anatomical features like the subcondylar area. These variations lead to localized areas of increased force per unit area, predisposing certain regions to heightened fracture susceptibility. Therapeutic interventions for mandibular fractures prioritize the restoration of occlusal alignment and functional integrity, necessitating precise fracture reduction and immobilization to facilitate direct bone healing. Undertaking surgical procedures under local anesthesia presents unique challenges, particularly in ensuring effective pain management, thus demanding proficient techniques in local anesthesia administration and patient anxiety mitigation strategies.

CASE REPORT

30 year old male patient reported with the complain of swelling and pain over the face as result of trauma due to road traffic accident.

Clinical examination revealed gross facial edema and tenderness on palpation on l mandibular parasymphysis region. Intraorally gingival tear present between left mandibular lateral incisor and canine, open bite present on right side. Subconjunctival haemorrhage present in right eye



Fig1: OPG shows left mandibular Parasymphysis fracture

After thorough clinical examination, patient was advised to get and orthopantomograph and blood investigations done. OPG showed left mandibular parasymphysis fracture.

Informed consent was taken and open reduction and rigid fixation was planned under local anaesthesia. Patient was administered with prophylactic antibiotics, corticosteroid, antiemetic and antacid by securing intravenous line one hour before surgery. We also gave intramuscular injection of diclofenac sodium. Adequate anxiolysis was achieved by giving an oral benzodiazepine (tab restyl 0.5mg). Patient was kept on IV fluids during the surgery. All vital signs were monitored continuously during the procedure. Intermaxillary fixation was done by using arch bars



Fig no 2: arch bar placed in both the arches and intermaxillary fixation is done

Bilateral inferior alveolar and lingual nerve blocks were given by using 2% lignocaine HCl with 1:80000 adrenaline. We addressed parasymphysis fracture by taking an incision within the mucobuccal fold. Fracture site was exposed and fracture fragments were reduced. Internal fixation at superior border was done by using 4 hole plate of 2.5mm and 10mm screws and inferior border fixation was done by 4 hole plate of 2 mm and 8 mm screws. Closure of site were done with 3-0 silk suture after thorough irrigation. IMF was removed after 24 hrs and patient was advised to come for subsequent follow up visits.

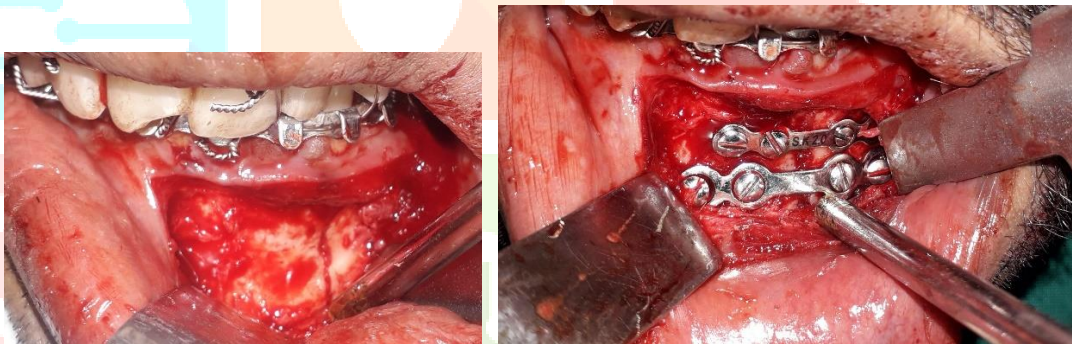


Fig no 3&4: fracture line is exposed and ORIF is done

DISCUSSION

Fractures of the mandible have been reported to be between 40% and 62% of all facial fractures. As we know mandible is not a uniform arch it has bony prominences, ridges and foramina's which result in increase in tension in these areas. When a trauma occurs, the kinetic energy is transmitted along the mandibular arch; this causes a direct fracture on the impact site and an indirect fracture on a contralateral weakness point.

In the management of any fracture anaesthesia plays vital role. Every modality has its pros and cons. General anaesthesia provides better intraoperative pain control, anxiolysis compared as to local anaesthesia. Considering patients age and post operative complications associated with GA, morbidity of the treatment increases. There are many local anaesthetic agents available such as bupivacaine, articaine which provide anaesthesia for longer duration. In certain situation where performing surgery under general anaesthesia is not feasible one should definitely consider the option of local anaesthesia

The goals of treatment are to restore proper function by ensuring union of the fractured segments and re-establishing pre-injury strength, to restore any contour defect that might arise as a result of the injury, and to prevent infection at the fracture site. Restoration of mandibular function, in particular, as part of the stomatognathic system must include the ability to masticate properly, to speak normally, and to allow for articular movements as ample as before the trauma. In order to achieve these goals, restoration of the normal occlusion of the patient becomes paramount for the treating surgeon. In literature it is now clear that the ORIF represents the most reliable pattern of treatment for multiple mandibular fractures of the jaw.

CONCLUSION

mandibular fractures represent a significant burden in trauma cases, commonly resulting from vehicular accidents and physical altercations. Understanding the mandible's structural intricacies is crucial for devising effective treatment strategies, as its arch-like function is accompanied by distinct anatomical irregularities that influence fracture patterns and susceptibility. Therapeutic approaches aim to restore occlusal harmony and functional capacity through precise fracture reduction and immobilization, thereby promoting direct bone healing.

REFERENCES

1. Ellis E, Moos KF, El-Attar A. Ten years of mandibular fractures: an analysis of 2,137 cases. *Oral Surg* 1985;59:120Y129
2. Iizuka T, Lindqvist C. Rigid internal fixation of mandibular fractures: an analysis of 270 fractures using the AO/ASIF method. *Int J Oral Maxillofac Surg* 1992;21:65Y69
3. Elahi Noor A, Amin N, Mustari Shanta T, Asaduzzaman Mazumder M. Close Reduction of the Unilateral Angle Fracture of the Mandible: A Case Report. *EC Dental Science*. 2019;18(5):1021-6
4. Edward Ellis III, DDS, MS Management of Fractures Through the Angle of the Mandible *Oral Maxillofacial Surg Clin N Am* 21 (2009) 163–174
5. Giovanni Dell' Aversana Orabona, Bifocal Mandibular Fractures: Which Should Be Treated First? *J Craniofac Surg* 2012;23: 1723Y1727
6. Wedayanti DPK, Dinatha GNK, Partama PG, Saputra MKA. Management of mandibular parasymphysis fracture: a case report. *Int J Adv Med* 2021;8:1423-6.
7. Singh Soodan K, Priyadarshni P, Author C. Subcondylar and Parasymphysis Fracture and Its Management: A Case Report Case Report. *Acta Scientific Dental Sciences*. 2019;3(4):119-21