ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 09 | September - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

AN INFECTED MANDIBULAR FRACTURE- CASE REPORT

Oral & Maxillofacial Surgery

Beena Roopak Department of oral and maxillofacial surgery, Rajarajeswari dental college and hospital
N Varsha Department of oral and maxillofacial surgery, Rajarajeswari dental college and hospital
Mamatha. N. S Department of oral and maxillofacial surgery, Rajarajeswari dental college and hospital
Md Zubair Qureshi Department of oral and maxillofacial surgery, Rajarajeswari dental college and hospital

ABSTRACT

A case of infected mandibular fracture is presented, treatment of the case is described followed by a short discussion on the etiology and management of infected mandibular fractures.

KEYWORDS

Mandibular fracture, infection, antibiotic therapy, rigid fixation

INTRODUCTION

Infected mandibular fractures are not an uncommon occurrence at present and display across the extreme age spectrum. Among the young individuals who sustain injuries often neglect seeking care until infective symptoms make it extremely necessary to be treated.

Some surgeons deem all mandibular fractures more than 48 hours old to be infected.[1]

Traditional treatment of infected mandibular fractures called for removal of the involved teeth and immobilization of the fracture with maxillomandibular fixation (MMF), splints, external fixators, or a combination of these devices. Drainage was promoted, antibiotics were provided, and one waited for resolution of the cellulitis, if present, and drainage.[2]Over the years, several authors recognized that moving fragments promoted the infection.[3,4,5] With the advent of rigid internal fixation (RIF) with plates and screws, stable internal fixation of the fragments was possible. A few surgeons rigidly fixed these infected fractures and achieved successful outcomes, going against the prevailing principle of never placing hardware in an infected area.[6,7,8] This paper describes and discusses a case of infected mandibular fracture which was treated with open reduction and internal fixation.

Case report

History

A 20-year-old male reported to our hospital after suffering a blow to the jaw during an alleged assault two months back. His chief complaint was pain and discharge in the mouth on attempted opening and chewing.

Examination and treatment

The patient had an unremarkable medical history. Extraoral examination revealed gross facial asymmetry in the left lower third of the face. Mouth opening was restricted to 10mm. Intraoral examination revealed buccal vestibular obliteration with purulent discharge in the region of 36 and 37. No segmental mobility was noted and occlusion was stable bilaterally. Grade 1 mobility was noted in relation to 36 and 37.

A panoramic radiograph showed a radiolucent line between 36 and 37 extending from the interdental bone to the inferior border of mandible, confirming the diagnosis of left body fracture of the mandible (Fig .1).

Fig.1

Antibiotic therapy was commenced with 1.2g of augmentin and 500mg of metronidazole, following which open reduction and internal fixation was planned under general anaesthesia keeping in mind the repetitive infection. Erich's arch bars were wired in place on the dental arches. Intermaxillary fixation was applied. A submandibular approach was used to reduce and stabilize the fracture which was then fixed with a 3-D plate and three 2*6 mm screws(Fig.2a,2b). Nil mobility was noted of the teeth and/or fracture was noted post fixation with complete resolution of the extraoral and intraoral swelling. The patient made an uneventful recovery and post reduction films showed satisfactory alignment of the fractured segments (Fig.3).

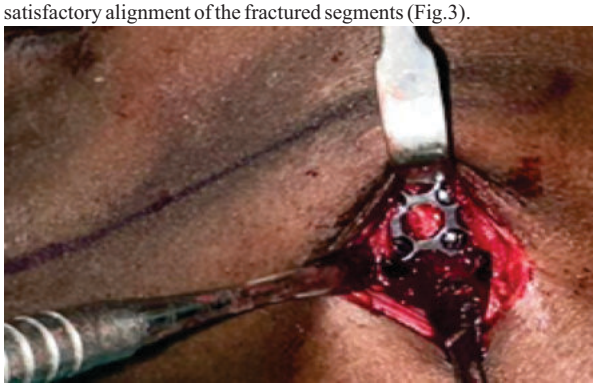

Fig.2

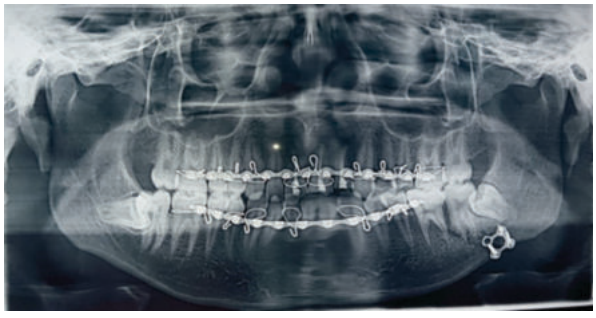

Fig.3

DISCUSSION

The management of major orofacial infections require prompt, decisive treatment. Immediate and appropriate surgical and antibiotic therapy are essential to a satisfactory outcome.

The infection appeared to arise from the soft callus formed due to delayed presentation of the patient following the injury. The infection may have been subclinical throughout the period of 2 months following which the pumping action of the un-secured fracture segments might have been invaded with the resident microorganisms present in the oral flora as well as in saliva. An immediate first aid with barton's bandage or bridle wiring would have restricted the jaw

movement and preventing a large inoculum of bacteria. Compound fractures of mandible pose a great challenge in its management due to its exposure to wide range of pathogenic bacteria. Hence a standard prophylactic regime should be followed. The drug of choice in major orofacial infections are penicillin and metronidazole due to their enhanced activity against gram-positive and gram-negative bacteria.[9] Tooth in line of fracture has been a controversy over the years although in this case no teeth were extracted since stability was achieved along with reduction in infection post fixation.

The treatment aimed at treating the infection while achieving adequate reduction of fracture and mouth opening.

CONCLUSION

Management of infective mandibular fractures presents a formidable challenge that requires a multifaceted and integrated approach. This complex interplay between trauma, bone fracture, and infection necessitates a thorough understanding of both oral and maxillofacial surgery and infectious disease management. The successful resolution of infective mandibular fractures hinges on precise diagnosis, thoughtful treatment planning, and a judicious combination of surgical intervention and antimicrobial therapy.

REFERENCES

1. Maloney P L,Lincoln R E, Coyne C P. A protocol for the management of compound frcatures based on the time from injury to treatment.*J Oral Maxillofac Surg.* 2001;59:879-884
2. Alpert B, Kushner GM, Tiwana PS. Contemporary management of infected mandibular fractures. Craniomaxillofac Trauma Reconstr. 2008 Nov;1(1):25-9.
3. Thoma K H. Further uses of the peripheral bone clamp. *Am J Orthod.* 1945;31:607. [Google Scholar]
4. Spiessl B. *Internal Fixation of the Mandible: A Manual of AO/ASIF Principles*. Berlin: Springer-Verlag; 1989. pp. 246, 284–289.
5. Luhr H G. On the stable osteosynthesis in mandibular fractures. *Dtsch Zahnarztl Z.* 1968;23:754. [PubMed] [Google Scholar]
6. Koury M E, Perrott D H, Kaban L B. The use of rigid internal fixation in mandibular fractures complicated by osteomyelitis. *J Oral Maxillofac Surg.* 1994;52:1114–1119. [PubMed] [Google Scholar]
7. Prein J, Schmoker R. Treatment of infected fractures and pseudoarthrosis of the mandible. In: In: Spiessl B, editor. *New Concepts in Maxillofacial Bone Surgery.* New York: Springer; 1976. pp. 169–174. [Google Scholar]
8. Koury M, Ellis E. Rigid internal fixation for the treatment of infected mandibular fractures. *J Oral Maxillofac Surg.* 1992;50:434–443. [PubMed] [Google Scholar]
9. Heimdahl A, von Konow L, Satoh T, Nord CE. Clinical appearance of orofacial infections of odontogenic origin in relation to microbiolog-ical findings. J Clin Microbiol 1985;22:299-302.