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Case Report

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Parasymphysis fracture treated with three dimensional miniplate – a case report

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ABSTRACT

Introduction

Maxillofacial trauma is becoming a cause of great concern due to increase in number of road accidents. Other causes includes violence, sports injury etc. There are number of treatment modalities ranging from conservative method to open reduction. In 1992, Farmand M. developed three dimensional plates with quadrangular design, formed by joining two miniplates with interconnecting crossbar.

Case Report

The aim of this article is to present a case reported to dept. of oral and maxillofacial surgery with chief complaint of pain and swelling in anterior region of lower jaw. After clinical and radiological evaluation right parasymphysis fracture was diagnosed and was treated with open reduction and internal fixation with 3 dimensional plate through intraoral approach.

Conclusion

The outcome of treatment was positive. Internal fixation with 3 dimensional plates are appropriate treatment plan for parasymphysis fracture.

Keywords: Parasymphysis fracture, Open reduction, Three dimensional plate.

INTRODUCTION

There is an significant increase in trauma to craniofacial region with mandibular fracture occupying second most frequently encountered (38%) trauma due to road accidents. Treatment of fracture of mandible is of utmost priority because if left untreated it would lead to severe functional and

cosmetic consequences [1]. There exist a wide range of treatment modalities for mandibular fracture evolved over several decade. From splinting, to close versus open method of reduction, decision concerning to IMF and direct fixation with bone plates and screws [2]. Different techniques of treatment of mandible fracture using plates and screw include –

1) Rigid Fixation, which was introduced by Spiess, the compression plates are rigidly fixed to fractured mandible using bicortical screws [3]. 2) Semirigid Fixation, Champy M et al popularized miniplates fixation along “the ideal lines of osteosynthesis”. It was a modification of Michelet et al technique consisting of non-cortical, sub apical osteosynthesis without IMF using miniplates.⁴ Farmand developed 3 dimensional miniplates with quadrangular design in 1992 having and interconnecting crossbar joining the two miniplates. The geometry of plates provide good stability against torsional forces and are easy to use.⁵ In this case report we have shown preoperative and postoperative radiographs and photographs of right parasymphysis fracture fixed with 3 dimensional miniplate.

CASE REPORT

A 55year old male reported to the department of oral and maxillofacial surgery with chief complaint of pain and swelling in lower anterior region of jaw. The etiology was road accident. After clinical and radiological evaluation right parasymphysis fracture was diagnosed as it can be seen on OPG (fig.1). Intraoral evaluation showed partial edentulous area in maxillary anterior and maxillary right posterior region. Other required investigations were carried out and the determined treatment plan

was open reduction and internal fixation. Under all aseptic conditions, painting and draping was done. The treatment was carried out under local anaesthesia with intraoral approach. Inferior alveolar, lingual and mental nerve block was given. Bridal wiring was done with canine and first premolar. A vestibular incision was given using 15 no. blade, the incision was extended from right lower lateral incisor to right lower first molar region (fig.2). The fracture line was exposed and necessary reduction was achieved (fig.3). Mental nerve was dissected and secured, no injury to mental nerve was encountered (fig.4). We used 3 dimensional stainless steel plate for internal fixation. Once the fracture line was exposed, 3D stainless steel plate (2 mm) was adapted to the curvature of mandibular bone in the fractured region (fig.4) keeping in view to restore the dental occlusion on left side. Plate dimensions were 2mm with four holes and screws of 2.0 x 8.0mm were used. After fixation, irrigation was done with saline and betadine. Closure was done with 3-0 silk suture (fig.5) and patient was put on a soft diet. Post-operative OPG was recorded showing 3D plate at the fractured site (FIG.6) and better occlusion. Patient was recalled after 24 hrs for follow-up and after 7 days for removal of suture. No complaint was reported after treatment (paresthesia, pain, discomfort etc.)



Fig.1



Fig.2



Fig.3



Fig.4



Fig.5



Fig.6

DISCUSSION

Mandible is more prone to fracture due to its anatomic form and location. Increased frequency of mandible fracture is due to increase in road traffic accidents. Since it is a mobile facial bone, fracture of mandible is very painful, worsens with mastication and may lead to gross facial asymmetry. As seen, there are many philosophies regarding treatment of mandibular fracture, the concept of rigid fixation is less significant due to its difficulty in adaptation, bulkier plates, and extra oral approach. [3] The purpose of treatment is to restore normal form and function and the basic necessity of immobilization, failure to treat properly results in infection, non-union, malunion. [4] The major aim of stability is achieved by 3 dimensional plates. Due to their quadrangular shape and small size they can be placed through intraoral approach. Although there are reports of difficulty

in adapting stainless steel 3 dimensional plates in symphysis region due to its curvature and are difficult to place around mental foramen region [5, 6], but, in this case it was placed in parasymphysis region anterior to mental foramen, by dissecting and securing the mental nerve and no as such difficulty was encountered.

CONCLUSION

After follow up, better approximation and stability was seen. 3 dimensional miniplates due to their quadrilateral configuration are desirable method of fixation as they restore normal form and function. Thus, we conclude that 3 dimensional plates are most appropriate treatment option for mandibular fracture.

Competing interest: No Competing interest exist.

REFERENCES

- [1]. Krishnaraj S, Chinnasamy R. A 4-year retrospective study of mandibular fractures in a South Indian city. J Craniofac Surg. 18, 2007, 776-80.
- [2]. Raymond JF, Walter RV. Oral and Maxillofacial Trauma. 2nd ed. Pennsylvania: WB. Saunders Company; 1997, 474-478.
- [3]. Spiessl B. Rigid internal fixation of fractures of lower jaw. Reconstr Surg Traumatol 13, 1972, 124-40.
- [4]. Champy M, Lodde JP, Schimtt R, Jaeger JH, Muster D: Mandibular osteosynthesis by miniature screwed plates via buccal approach. Journal of maxillofacial surgery 6(1), 1978, 14-21.
- [5]. Farmand M, Dupoirieux L: [The value of 3- dimensional plates in maxillofacial surgery] Revue de stomatologie et de chirurgie maxillofaciale 93(6), 1992, 353-357.
- [6]. Farmand M: [Experiences with the 3-D miniplate osteosynthesis in mandibular fracture]. Fortschritte der kiefer- und Gesichts-Chirurgie 41, 1996, 85-87.

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