Use of a Single Miniplate to Achieve Intra Operative Intermaxillary Fixation

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Abstract There are different treatment modalities mentioned in the literature for achieving intermaxillary fixation (IMF). Arch bars are time consuming, can cause damage to the periodontium, maintenance of oral hygiene is poor. Eyelets are not suitable for dentitions that carry extensive crown and bridge work. IMF screw causes root damage. To avoid all these complications we recommended the use of single miniplate for achieving IMF.

Keywords Intermaxillary fixation · Single miniplate

To achieve meticulous rigid internal fixation, proper temporary intra operative intermaxillary fixation (IMF) is required. IMF before plating establishes the premorbid relationship of mandibular and maxillary teeth [1]. Hollows and Brennan [2] used 24 gauge stainless steel wire through the contact points of lower and upper premolars for achieving intra operative IMF.

According to them IMF makes the plating easier. Sahoo and Mohan [3] advocated the use of IMF screws for intra operative IMF. Arch bars and eyelet wiring were also used for intra operative IMF. Arch bars are time consuming, can cause damage to the periodontium,

maintenance of oral hygiene is poor. Eyelets and arch bars are not suitable for dentitions that carry extensive crown and bridge work [4].

In case of deep bite it is difficult to achieve IMF with the help of eyelet wiring and arch bars. IMF screws can cause root damage. 24 gauge wires does not provide stable fixation and if the contact points between the teeth are absent than it is difficult to place and tighten the wires for IMF.

Thirty of our patients with minimally displaced fracture of mandible treated with open reduction and internal fixation had intra operative IMF with 4 hole with gap miniplate (Ortho Max Shreerang Apartments, Kothi, Baroda, India) without any complication. The average time taken for achieving IMF in all 30 patients was 6 min.

We recommended the use of single miniplate (Fig. 1) for achieving the temporary intra operative IMF in minimally displaced maxillary and mandibular fractures.

A single 4 hole with gap plate of 2 mm diameter can be used and fixed with 6 mm length screws. The screws were placed after drilling the holes with the help of the drill bit under copious saline irrigation between two central incisors in upper and the lower jaw. Single plate is sufficient enough to achieve proper occlusion. In the absence of dentures, Wolfe et al. [5] used miniplates in edentulous patients to achieve IMF.

Figure 2 shows proper fixation of fracture with 2 mini plates and IMF with single miniplate with the help of C Arm which is used in orthopaedic cases. The advantages of using the plate for achieving IMF are that placement of plate is simple, inexpensive, less time consuming technique and can be successfully used in patients with deep bite. The IMF with plate is contraindicated in patients with mixed dentition and fractures associated with dentoalveolar fractures.

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Fig. 1 Photograph showing intermaxillary fixation with miniplate

Fig. 2 Photograph showing C Arm image of IMF with miniplate

Conflict of interest None.

References

1. Farwell DG (2008) Management of symphyseal and parasymphiseal mandibular fractures. *Oper Tech Otolaryngol* 19:108–112
2. Hollows and Brennan. Temporary intermaxillary fixation: a quick reliable method. *Br J Oral Maxillofac Surg*, 422–423
3. Sahoo NK, Mohan Ritu (2010) IMF Screw: an ideal intermaxillary fixation device during open reduction of mandibular fracture. *J Maxillofac Oral Surg* 9:170–172
4. Rai A, Datarkar A, Borle RM (2011) Are maxillomandibular fixation screws a better option than Erich arch bars in achieving maxillomandibular fixation? A randomized clinical study. *J Oral Maxillofac Surg* 69:3015–3018
5. Wolfe SA, Lovaas M, McCafferty LR (1989) Use of a miniplate to provide intermaxillary fixation in the edentulous patient. *J Cranio-maxillofac Surg* 17:31–33