

**INTERMAXILLARY FIXATION WITH ORTHODONTIC BRACKETS -A CASE REPORT**

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**ABSTRACT**

Intermaxillary fixation is an integral part of management in fractures of facial bone. Conventional methods have drawbacks such as risk of transmission of blood borne diseases, stressful procedure and damage to teeth and periodontium. Orthodontic bracket fixation is an effective alternative for conventional arch bar method for Intermaxillary fixation in management of fracture of facial bones as it overcomes every drawback of conventional Intermaxillary fixation method and gives a very stable occlusal and functional outcome.

**KEYWORDS:** Mandibular fracture, orthodontic brackets, Intermaxillary fixation.

**INTRODUCTION**

Fracture of the jaw bones is one of the most common trauma induced facial injury encountered by a dental surgeon. Management of facial bone fractures have always been a point of debate. Recent management techniques lay emphasis on open reduction and internal fixation(ORIF). Intermaxillary fixation(IMF) is an integral part of management of facial bone fractures, whether the treatment modality is ORIF or conservative management. In the later IMF is usually carried out using arch bar and ligature wire. This conventional and most commonly used technique has some disadvantages like difficult oral hygiene maintenance, trauma to periodontium, stressful and painful procedure.

We report a case of multiple fractures of mandible managed conservatively using direct bonding orthodontic brackets for IMF.

**CASE REPORT**

A 27 year old male patient reported with multiple fractures of facial bones, sustained during a road traffic accident. Clinical and radiographic evaluation revealed symphysis, left subcondylar and left zygoma fractures with occlusal dearrangement(Fig1a,b,c,d,e). Surgical and non-surgical treatment modalities were explained to the patient, he opted to do non- surgical management. IMF was planned using direct bonding orthodontic brackets. Orthodontic brackets were placed using self curing

composite resin from second premolar to second premolar in both upper and lower arches. Orthodontic traction elastics were used to achieve adequate occlusion(Fig2a,b). The teeth used for traction were selected so as to achieve maximum occlusion. Elastics were kept in place for 24 hrs and later replaced by orthodontic ligature wires(Fig3a,b,c). IMF was retained for a period of 21 days. During the postoperative period patient was able to maintain good oral hygiene without any difficulty and did not complain of any pain or trauma to labial and buccal mucosa. After 21 days IMF was released. Patient underwent physiotherapy to attain normal mouth opening, during which period the patient was instructed to take soft diet. Normal opening was attained in a period of 2weeks. (Fig4a). Postoperative radiograph showed significant bone healing at symphysis and left subcondylar region. (Fig4b).



Fig 1a



Fig1b



Fig 1c

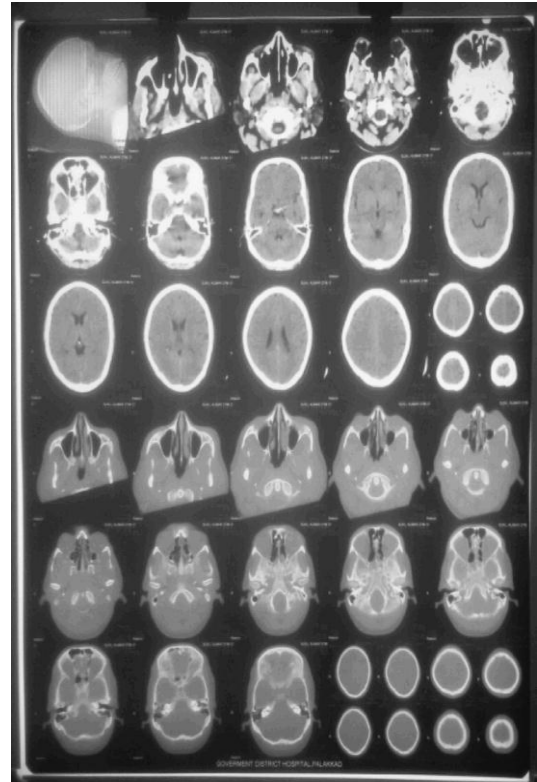


Fig1d



Fig1e





Fig 2a



Fig3b

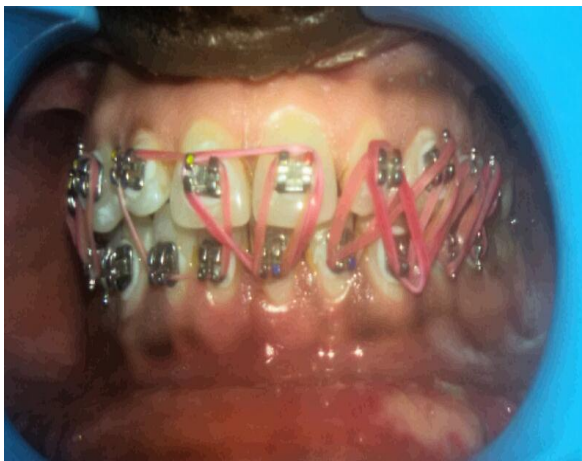


Fig2b



Fig3c



Fig3a



Fig4a

**Fig4b****DISCUSSION**

Intermaxillary fixation is an essential part of management of fractures of facial bone. Fracture of jaw bones are managed more commonly with ORIF, due to the advancement in surgical techniques and instruments used for osteosynthesis. IMF can be used alone or in association with ORIF in the treatment of fractures of maxilla and mandible. Conventional method of doing IMF using arch bar and wires have drawbacks like trauma to periodontium, risk of transmission of blood borne diseases, stressful and painful procedure, need of local anaesthetic and its related complications and difficulty in oral hygiene maintenance. These drawbacks lead us to use alternative methods for IMF.

We used orthodontic brackets for IMF in a patient with multiple fractures of maxilla and mandible. These brackets were of the type routinely used for fixed appliance therapy in orthodontics for correction of maligned teeth. These brackets are low cost and easily available. Our patient had sustained multiple facial fractures including left zygoma and mandible fracture. He had difficulty in mouth opening and occlusal discrepancy. Placement of brackets was easy and operator could avoid contact with the intra oral fluids, that can lead to transmission of blood borne diseases. We used traction elastic on selected teeth so as to attain maximum alignment of occlusion. Within 24hrs we were able to achieve stable occlusion. During this period patient experienced no discomfort. Our findings were similar to that of Utley et al <sup>1</sup>results. After 21 days Intermaxillary fixation was removed and patient underwent physiotherapy for 2weeks. We achieved complete occlusal and functional stability using IMF with orthodontic brackets in this patient with multiple facial fractures.

**CONCLUSION**

Intermaxillary fixation using orthodontic brackets is effective alternative method that nullifies all the drawbacks of Intermaxillary fixation with arch bar and wire. We strongly recommend use of orthodontic brackets in Intermaxillary Fixation as adjunct to ORIF or alone for management of simple as well as complex fractures of maxilla and mandible.

**REFERENCE**

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