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Case Report

Direct Interdental Wiring as Alternative Method in the Treatment of Mandibular Fracture at Inaccessible War Zone: A Case Report

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Abstract: The Region of Tombouctou is considered as one of landlocked regions in Mali, unstable war zone. The frequency of mandibular fracture becomes more than usual in the last years with lack of oral and maxillofacial team; limited complementary exams; and limited surgical tools. In purpose to reduce; to fix fracture line; and to restore function of maxillofacial areas, we decided to practice direct interdental wiring as alternative method for the treatment of limited displacement of mandibular fractures. Direct interdental wiring in Intermaxillary fixation for closed reduction in the mandibular fracture is rarely used today.

Keywords: Direct Interdental Wiring, Closed Reduction, Mandibular Fracture, Tombouctou.

INTRODUCTION

The mandible is important in airway maintenance, speech, mastication and deglutition. Fractures and injuries to the associated muscles can therefore result in considerable dysfunction and pain. Remember that in some instances multiple fractures, or associated bleeding, soft tissue swelling, alcohol intoxication, brain injury, and in the supine position, the airway may be placed at risk and needs careful and repeated evaluation. Morphologically, the mandible is a U-shaped “long bone” and can be divided anatomically into symphysis; parasymphysis; body; angle; ramus and condyle [1].

The mandible is one of the bones most affected by facial fractures commonly resulting from trauma to the face. The ultimate goal of treatment is to re-establish the pre-injury dental occlusion (bite), mandibular anatomy and jaw function of the patient. Treatment approaches range from conservatives non-invasive management by ‘closed’ reduction and immobilization using Intermaxillary fixation (IMF) to the more invasive surgery based ‘open’ reduction incorporating in an internal fixation approach [2].

CLINICAL ASSESSMENT

The patient was assessed through the visualization deformity; palpation tenderness; and the malocclusion. This clinical assessment revealed the fracture of the mandible, and Lateral Radiographic view of the mandible was done to rule out, and to confirm the fracture line.

Operative Management

Full mouth anesthesia was obtained by local anesthesia technique. One of quadrants of mandible was anesthetized by mandibular closed mouth technique (The side of the fracture of the mandible); then the others were done through the infiltration technique of local anesthesia. Reduction and immobilization of jaws was achieved with 25 gauge stainless steel wire placed about the neck of tooth and the two ends twisted together to produce a tail, which in turn can be twisted with another tail of the opposing arch to effect direct interdental wiring in order to perform Intermaxillary fixation.

DISCUSSION

In the past, all fractures involving the face and jaw bones including that involving the teeth were treated with closed reduction and internal fixation techniques like miniplates and lagscrew. Now, with advances in the field of Oral and Maxillofacial surgery, treatment using

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non rigid fixation technique like Intermaxillary fixation with different dental wiring techniques are being increasingly used [3-5]. Good bone healing of fractures requires close apposition of the fragments and immobility for a period of about 6 weeks [6].

Direct interdental wiring is rarely used today as a method of Reduction and Immobilization of mandibular fracture, but it could be used in inaccessible war zone where oral and maxillofacial surgery team is absent. This technique will not be useful in absence of tight contacts between the teeth. It will not be useful for long period of Intermaxillary Fixation to prevent any complication affecting the articulation of Temporo-madibular joint.

CONCLUSION

Direct Interdental wiring of the treatment of mandibular fracture is simple, rapid and economically less cost to the patient. The technique is acceptable and stable during healing period.

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