East African Scholars Journal of Medicine and Surgery
Abbreviated Key Title: EAS J Med Surg
ISSN: 2663-1857 (Print) & ISSN: 2663-7332 (Online)
Published By East African Scholars Publisher, Kenya

Volume-5 | Issue-9 | Oct-2023 | DOI: 10.36349/easjms.2023.v05i09.001

OPEN ACCESS

Case Report

Eyelet Wiring in Closed Reduction in the Treatment of Mandibular Fracture: A Case Report

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Article History
Received: 02.09.2023
Accepted: 06.10.2023
Published: 11.10.2023

Journal homepage:
https://www.easpublisher.com

Quick Response Code

Abstract: The mandibular fracture becomes frequent in the region of Tombouctou northern Mali. Owing to the absence of Oral and Maxillofacial team, limited complementary exams; and limited surgical tools, we decided to practice closed reduction for favorable, limited displacement of mandibular fracture as the ideal alternative method of treatment for mandibular fractures using Eyelet wiring which is rapid, simple and costs less to the patient.

Keywords: Eyelet wiring, Closed reduction, Mandibular fracture, Tombouctou.

INTRODUCTION

Fractures of mandible comprise 10 – 25 % of all fractures. The condyle, angle and body are the most common anatomic locations. Frequent combinations of multiple mandibular fractures are angle and contralateral body, bilateral angle or body, and condylar and contralateral body [1].

Assaults constitutes the most common cause of mandibular (jaw) fractures at 48-65%, followed by motor vehicle accidents, falls and gunshots wounds [2, 3]. 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 an internal faxation approach [4].

PREOPERATIVE ASSESSMENT

- Clinically patient was assessed with the evidence of the fracture of the mandible through the visualization deformity; palpation tenderness; and the malocclusion. Clinical evidence was confirmed by Radiographical Lateral view of the mandible.
- Radiographically; Lateral view of the mandible was done to rule out the fracture line of the body of the mandible (fig.1).

Fig. 1: Lateral view of the mandible for assessment of Mandibular fracture.

CASE MANAGEMENT

Eyelet wiring was performed under local anaethesia for total mouth area. One of quandrants of mandible was anesthesized by mandibular closed mouth technique (The side of the fracture of the mandible); then the others were done through the infiltration technique of local anaesthesia. Closed reduction was performed using

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pre-prepared wire of 25 gauge with loops, placed firstable between two maxillary central incisors where loop faces labial mucosa; then interdigitated through the loop from canine to canine (13 to 23), and the same manner was done for lower incisors from canine to canine (33 to 43), after that another Eyelet wire was placed between second premolar and fist molar on the each quadrant of Maxilla and Mandible where loops facing buccal mucosa, then the wires were interdigitated through the loop. Finally Intermaxillary Fixation (IMF) was performed by the interdigitation of loop to its corresponding loop of other jaw (Fig.2).

Fig. 2: Interdigitation of loops to their corresponding loops of jaws for intermaxillary fixation.

DISCUSSION

Good bone healing of fractures requires close apposition of the fragments and immobility for a period of about 6 weeks [5]. We decided to perform this rare technique closed reduction; for favorable, limited displacement of mandibular fracture because of the absence of oral and maxillofacial team, and limited surgical tools, as the ideal alternative method of treatment for mandibular fracture.

Eyelet wiring is rarely used today as a method for Intemaxillary Fixation of mandibular fracture, but it could be used in underdeveloped country as alternative method, because of being rapid, simple and economically less cost to the patient. The technique was acceptable, and Intermaxillary Fixation was stable during healing periods.

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Cite This Article: Lahaou Baladji Touré, Oumar Ongoiba, Djibril Kasssogué, Seydou Sogoba, Bassirima Traoré, Mohamed Elmasry (2023). Eyelet Wiring in Closed Reduction in the Treatment of Mandibular Fracture: A Case Report. *East African Scholars J Med Surg*, *5*(9), 156-157.

