Management of Anterior Mandibular Fracture Using Herbert Lag Screw Versus Double Plating Technique

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Dedication

To my father, you always have been my inspiration despite the distance between us.

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AO	Arbeitsgemeinschaft fur Osteosynthesefragen Association for study of internal fixation
CT	Computed tomography
CBCT	Cone beam computed tomography
DICOM	Digital Imaging and Communication in Medicine
DCP	Dynamic compression plate
ECG	Electrocardiogram
FFH	Fall From Height
IPA	Inter-personal Assaults
IV	Intra-Venous
IM	Intra-Muscular
IRD	Inter-ramal Distance
IMD	Inter-mental Distance
IMF	Inter-maxillary fixation

K-wire	Krischner wire
MIMICS	Materialise Interactive Medical Image Control Systems
MMF	Maxillo-Mandibular fixation
MVA	Motor Vehicle Accident
NSAIDs	Non-steroidal anti-inflammatory drugs
OPG	Orthopantomogram
ORIF	Open reduction internal fixation
RTA	Road traffic accident
SD	Standard Deviation
STL	Standard Template Library
SE	Standard Error
3D	Three Dimensional

Introduction

Introduction

One of the most rewarding and demanding aspects of surgical practice is the management of the patient who suffered facial trauma. The abruptness of the injury can cause intense emotional distress even when only minor injuries are present. Therefore, the clinician must effectively deal with the patient physical injuries as well as the patient's emotional status.

Mandibular fractures constitute the bulk of the trauma treated by Maxillofacial specialty services because it is fracture occurs frequently more than any other facial bones, despite the fact that the mandible is one of the large and strong facial bone. These fractures result from a multitude of causes, including sports injuries, motor vehicle accidents, falls, and interpersonal violence. The management of mandibular fractures includes various techniques, depending on the surgeon's specialty and training, location, and geographical preferences.

The aim of mandibular fracture treatment is the restoration of anatomical form and function, with particular care to establish the occlusion. Traditionally, this has been achieved by immobilizing the jaws using various wiring techniques. In the past years, interest has increased for different methods of open reduction and internal fixation. Methods of ORIF have changed and diversified enormously in the past few years. They have become smaller and simpler to handle, and extra-oral incisions can be avoided.

Different approaches and fixation techniques are used. The extra-oral approaches carry particular risks, such as facial nerve damage and visible scars. These can be largely avoided by using the intraoral approach.

Rigid internal fixation of mandibular fractures eliminates the need for intermaxillary fixation and facilitates stable anatomic reduction while reducing the risk of postoperative displacement of the fractured fragments, allowing immediate return to function. However, it is not always easy to define what adequate fixation for a given mandibular fracture is. This is depending on the characteristics of the fracture, patient, and kind of postoperative function desired for the particular case.

anterior mandible, between the two mental foramina, is uniquely suited to the application of lag screw fixation. Many methods of osteosynthesis for anterior mandibular fractures have been described, including fixation of fragments with lag screws, reconstruction plates, compression plates and miniplates.

Therefore, the purpose of this study is to compare between plates and Herbert screws in the fixation of anterior mandibular fracture.