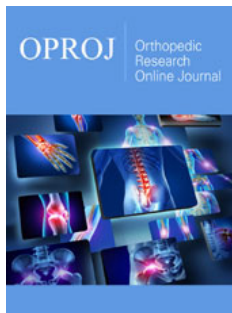


Plate and Screws Fixation Idea to Preserve Metacarpal Length in Comminuted Fractures

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Abstract

Comminuted metacarpal fractures are challenging to treat sometimes, especially when there is axial power pushing distal piece proximally which cause shortening of the bone in this work, we will review, an idea to distract the distal piece in order to preserve the length

Keywords: Digit; Digital; Fractures; External; Fixator; Distraction; Complex; Fracture; Joint; Joints; Reduction; Fixation; K wire; K wires; kirschner wire; kirschner wires; Hand; Thumb; Index; Middle; Long; Ring; Little; Metacarpal; Plate; Screws; Prosthesis

Introduction

Metacarpal fractures are very frequent. Treating them mostly can go very well conservatively through splinting 3-6 weeks. In some fractures, surgical intervention is mandatory; when clinically there is shortening or crossing of the fingers or dorsal hump (causes pain +- disfigurement) [1].

Case Presentation

29-year-old patient sustained trauma to left hand at work, presented 1 month later with extension lag + dorsal tender swelling. X-ray confirms comminuted metacarpal fracture with dorsal displaced bone spike. Surgical intervention is planned through open approach. Upon opening, there were 3-4 fractured pieces with unable to reduce and fix *via* conventional 1mm K wires because there was pulling forces pushes the distal half proximally which causes significant overlap and shortening of the long finger.

Distraction of the fracture done through placing T Plate and 4 screws, which showed restoration of the finger length and normal cascade. Placing of 3k wires done afterwards to fix the small fractured pieces in place. Pre and post op x-rays are shown below.

Early mobility has been started with full restoration of range of movement by 8 weeks (Figure 1 & 2)

Discussion

Open approach is very important in late surgical intervention to properly reduce "already healed fracture" with removing of the callus formation.

Distraction of the fractured pieces through either plate and screws or External fixator [2] is very important to preserve the length and restore range of movement with zero lag.



Figure 1: Pre and intra operative pictures (pre and post fixation).

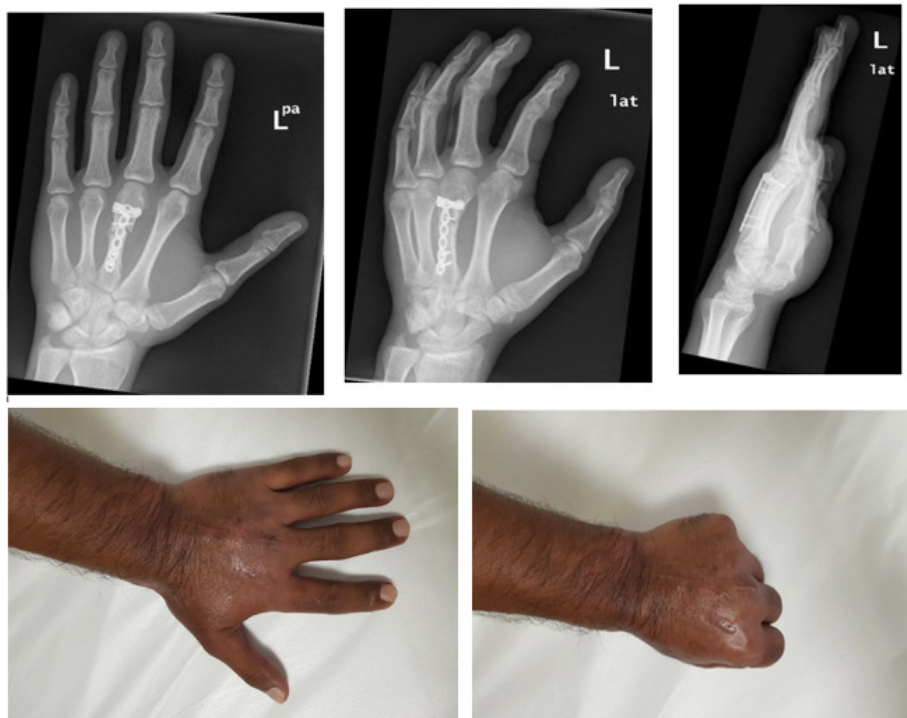


Figure 2: 8 weeks post fixation.

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