

METACARPAL FRACTURE STABILIZATION by RETROGRADE SCREW INSERTION



Intramedullary Fracture Stabilization with Diamond Orthopedic Screws

Pre-op template using measurement tools on a digital system to predict desired screw diameter and length

PATIENT POSITIONING

The patient is positioned supine on the operating table with the arm positioned on a radiolucent hand table. The fluoroscopy unit is positioned across from the surgeon.

SURGICAL SITE PREPARATION

A dorsal midline incision over the metacarpal phalangeal joint of the injured digit allows exposure of the extensor tendon and the sagittal bands. After splitting one of the lateral bands and lateral retraction of the extensor tendon a vertical capsulotomy is done. The metacarpal phalangeal joint can be easily exposed by flexing the proximal phalanx.

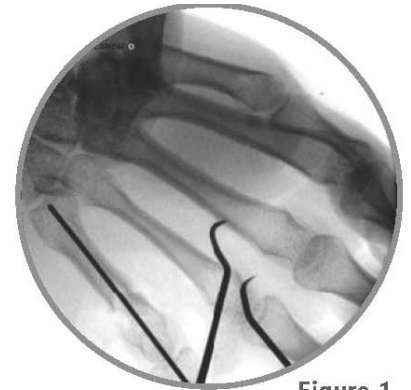


Figure 1

FRACTURE REDUCTION

Commonly, the fracture can be satisfactorily reduced by axial traction and manual pressure on the dorsal aspect of the metacarpal fracture.

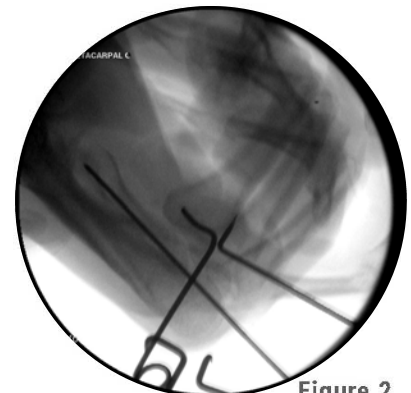


Figure 2

SCREW INSERTION

After exposing the metacarpal head, the Diamond guidewire is introduced into the metacarpal head at the junction of the dorsal third and the middle third of the head. The guidewire is advanced across the fracture site and into the proximal base of the metacarpal.

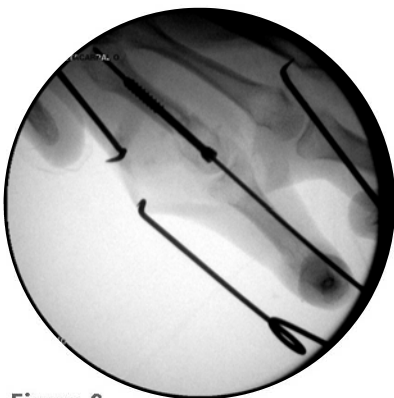


Figure 3

The guidewire is best positioned in the center of the metacarpal shaft. Using the depth gauge, the length of the screw is measured and compared to the pre-operative templated estimate.

Next, the metacarpal shaft is drilled and the final screw diameter and length is selected. The screw is steadily advanced across the fracture site and seated into its final position. If there is significant resistance to screw insertion, then consider overdrilling the metacarpal shaft or downsizing the screw diameter.

The screw position and fracture reduction are confirmed by radiographic evaluation. Intra-operative clinical examination is done to ensure satisfactory digital rotation and alignment.

WOUND CLOSURE AND DRESSING

The wound is closed with a monofilament nylon suture and a soft dressing is applied to the finger.