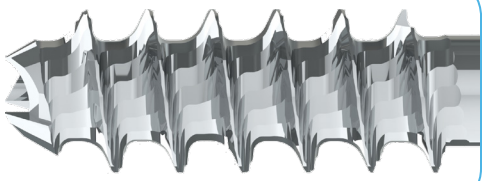
DISTAL INTERPHALANGEAL JOINT ARTHRODESIS

Intramedullary Fixation with Diamond Orthopedic Screws



PATIENT POSITIONING

The patient is positioned supine on the operating table with the arm positioned on a hand table and the fluoroscopy unit opposite the surgeon.

SURGICAL SITE PREPARATION

A dorsal midline incision allows for the extensor tendon to be split and then released from its insertion onto the distal phalanx.

After release, the joint is flexed to gain access and assess the joint surfaces. A thin saw blade is used to prepare the joint for fusion by leveling the joint, creating the preferred angle for the fusion and exposing a nice cancellous surface to facilitate fusion **(Figure 1)**.

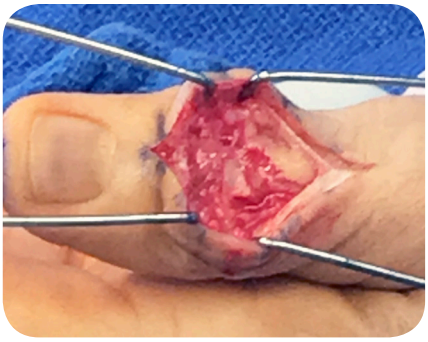


Figure 1

SCREW INSERTION

Selecting an appropriate point for intramedullary screw fixation, a guide-wire is placed retrograde out through the medullary canal of the distal phalanx **(Figure 2)**. The position of the wire is verified clinically and on multiplanar fluoroscopy. A small incision is made around the guidewire to accept the drill.

Under direct vision, the guidewire is inserted antegrade into the middle phalanx stabilizing the joint for fusion. If desired a second wire or clamp can be placed for additional stabilization.

Figure 2

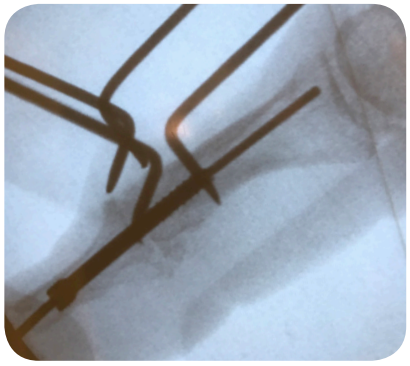


Figure 3

The position of wire and alignment of the bones to be fused is confirmed and the length of the screw is measured using the measuring device. The drill is placed over the wire, and the bones are drilled to accept the screw.

The screw is inserted over the guidewire and the fusion site is observed to ensure maintenance of alignment and to observe for compression of the bone ends **(Figure 3)**.

Use fluoroscan to check final screw placement **(Figure 4)**.

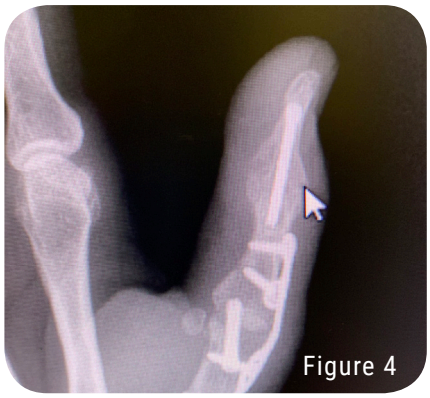


Figure 4

WOUND CLOSURE AND DRESSING

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