Objectives: To review common technical pitfalls experienced in a procedure being offered with increased frequency to patients with minimally or non-displaced fractures.

Example: Scaphoid waist fracture that typically will heal in 10-12 wks with acute immobilization, but is also amenable to percutaneous fixation.

More surgeons gaining exposure to percutaneous techniques in training

More common to offer patients surgical option

Technically challenging
  • Complex shape, bony anatomy
  • Location in wrist

Goal: in appropriately indicated patient

• Optimal guidewire placed from either volar or dorsal aspect

• No injury to surrounding structures or cartilage

Patient/fracture selection pitfalls

• Failure to consent for possible conversion to open procedure
• Applying technique to displaced or comminuted fractures
• Accept non-anatomically reduced fracture
• Difficult to place optimal guidewire from volar if fracture involves proximal waist

Screw length pitfalls

• Too long → can damage joints proximal and distal
• Too short → compromises compression/healing
• Not buried subchondral

Guidewire placement pitfalls

• Starting point errors
  Dorsally → risk to extensor tendons, SBRRN, PIN if done truly percutaneously (mini-open safer) → risk to SLIL if too ulnar
  Volarily → can cause screw position to be too far volar or aimed too dorsal leading to insufficient fixation in proximal fragment or break out from bone → potential injury to S-T joint

• Guidewire placed oblique to fracture line is likely to displace fracture when compressed

• Eccentric placement
  Damage to pan-scaphoid cartilage
  Poor compression/fixation

SUMMARY

• Percutaneous technique is technically challenging
• Being offered more frequently to patients
• Done correctly, it achieves the same goal as casting (union), but has inherent potential pitfalls
• Avoidance of pitfalls critical to success
• Learn from experience
• Careful fracture selection and attention to detail