

Radial Styloid Fractures: When and How to Fix

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Disclosures

Research Support:

1. Neuraptive Therapeutics
2. Skeletal Dynamics

Outlines

- Indications
- Associated Injuries
- Technique

Indications for Surgery

- ≥ 2 mm stepoff

> [J Bone Joint Surg Am. 1986 Jun;68\(5\):647-59.](#)

Intra-articular fractures of the distal end of the radius in young adults

[J L Knirk, J B Jupiter](#)

PMID: 3722221

8/8 patients (> 2 mm stepoff): 100% arthritis

Misquotation of a Commonly Referenced Hand Surgery Study

[Jack A. Porrino Jr, MD, Virak Tan, MD, Aaron Daluiski, MD](#)

1 mm stepoff: (22/24 pts) 91.7 % arthritis

Indications for Surgery: Associated Injuries

- Radial Styloid and Scaphoid Fracture
- Radial Styloid and Carpal Instability
- Radial Styloid and Translunate Fractures
- Radial Styloid and Radiocarpal Dislocation
- Radial Styloid (and Distal Radius Fracture)

Indications

Displacement (?)

Patient factors (age,
functional level, occupation)

Biologic factors (medical co-
morbidities, bone quality)

ASSOCIATED INJURIES

Isolated Radial Styloid Fractures

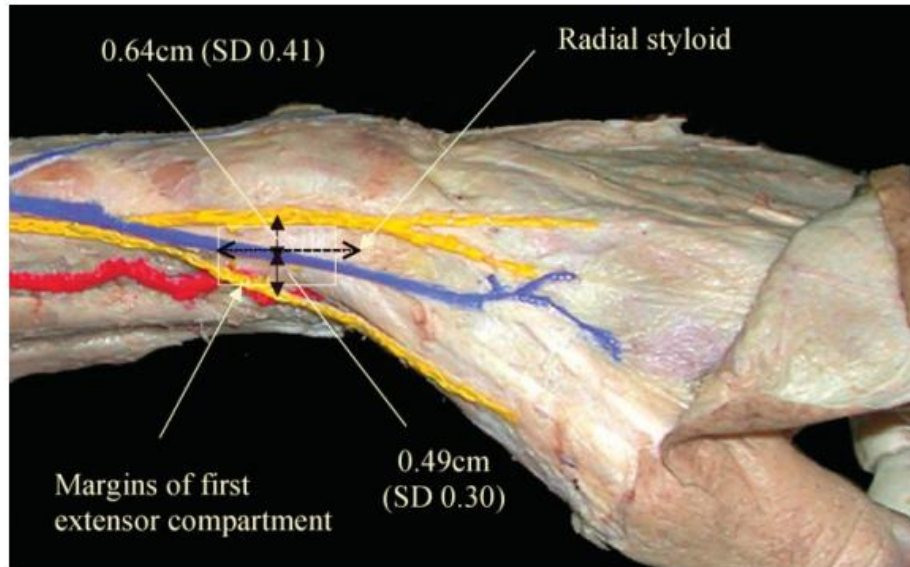
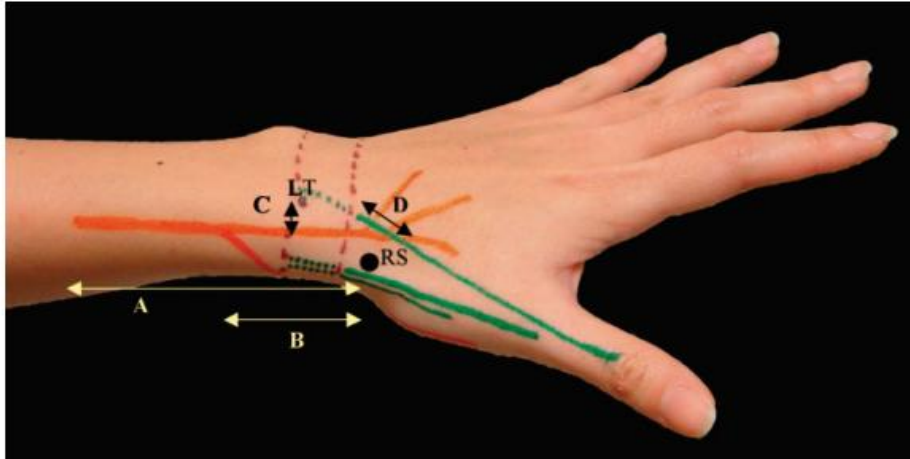
Plate

Screw



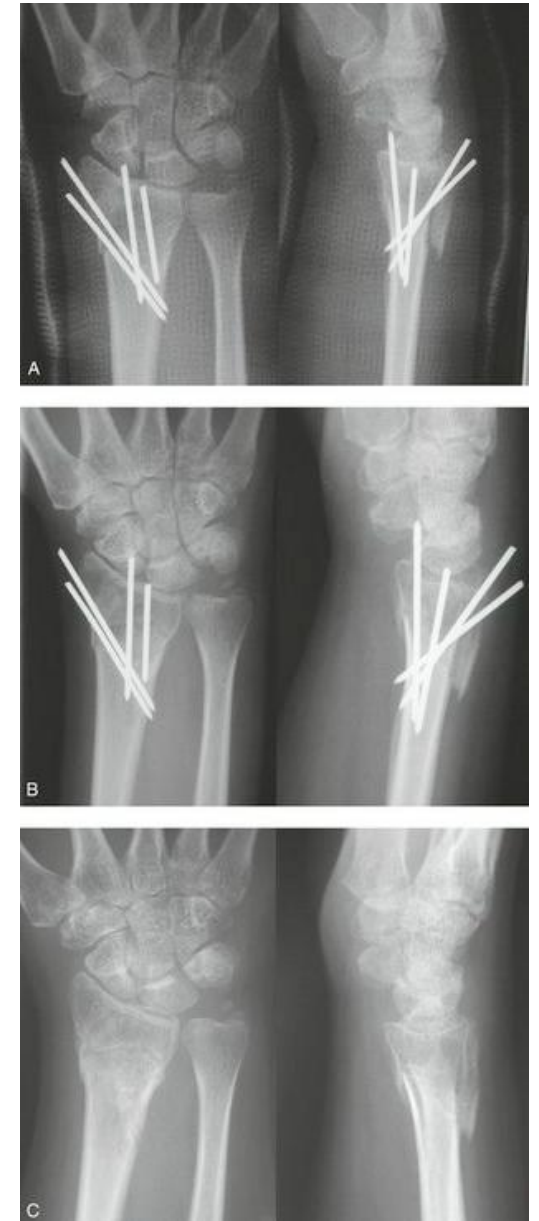
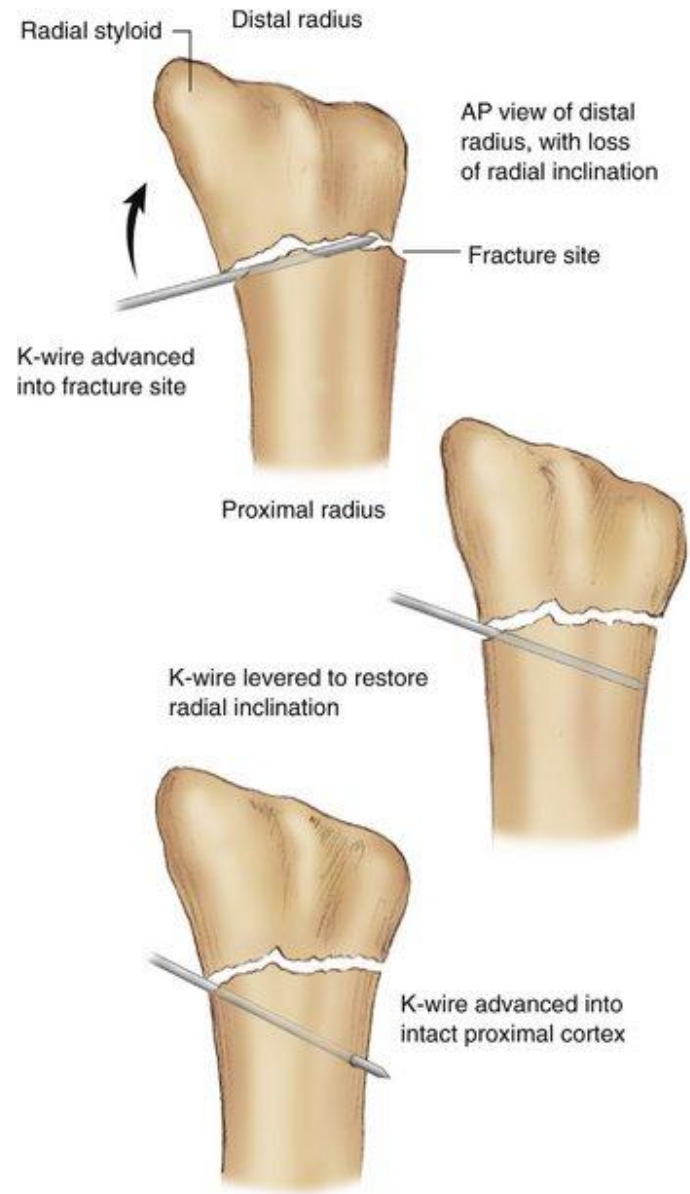
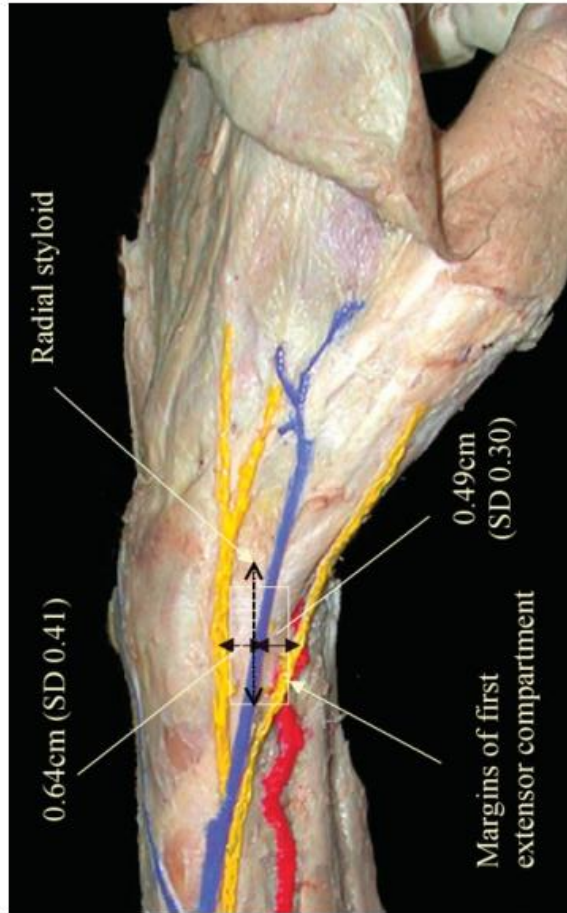
K-wires

Direct Lateral Approach – Radial Sensory Nerve



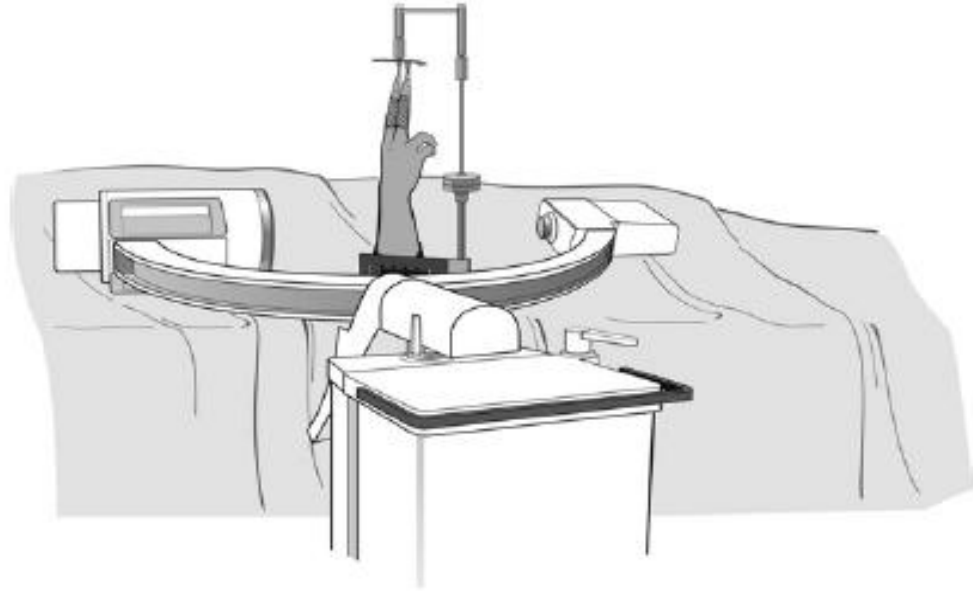
Radial Styloid Fractures

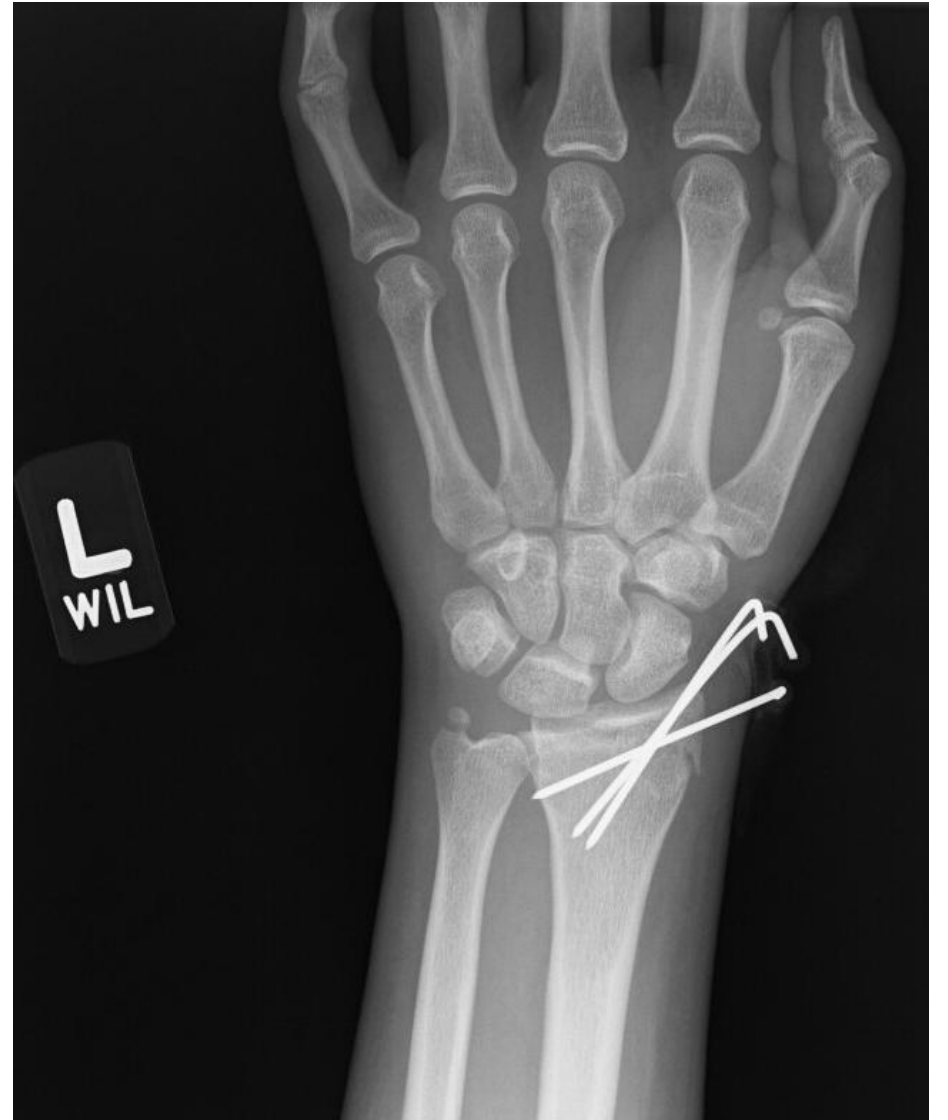
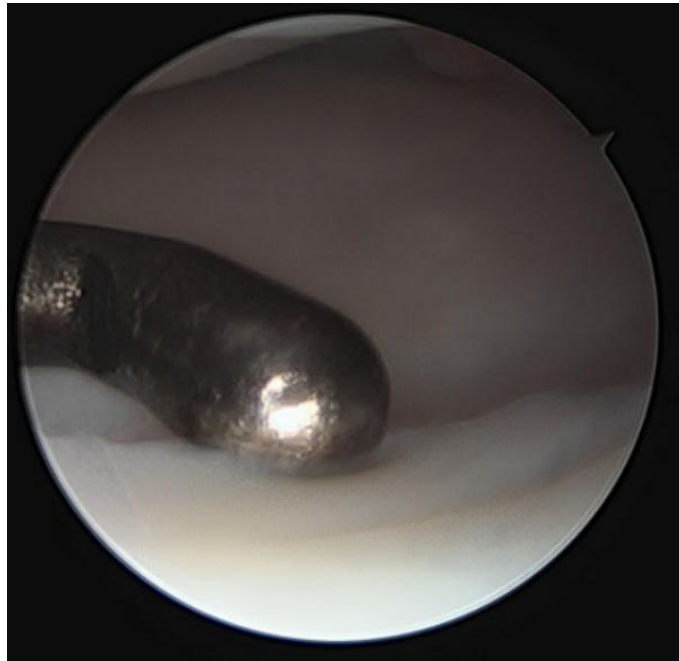
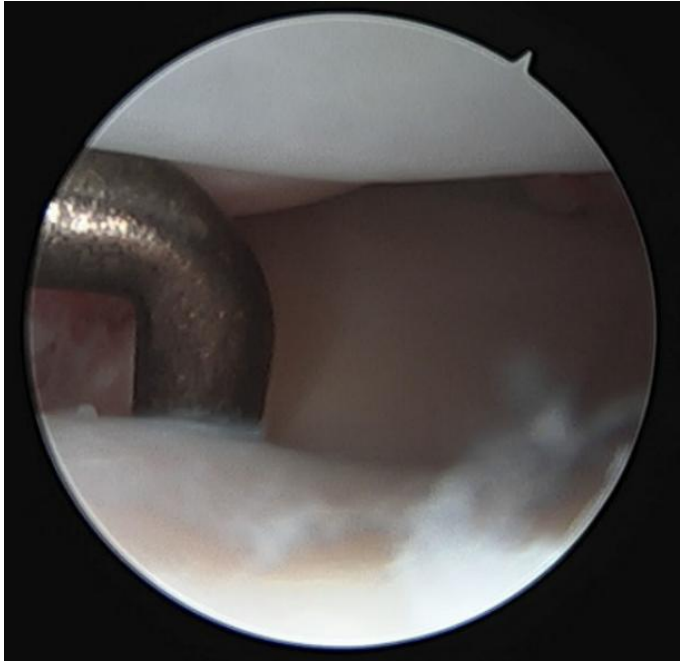
Beware!!!



Arthroscopic Assisted





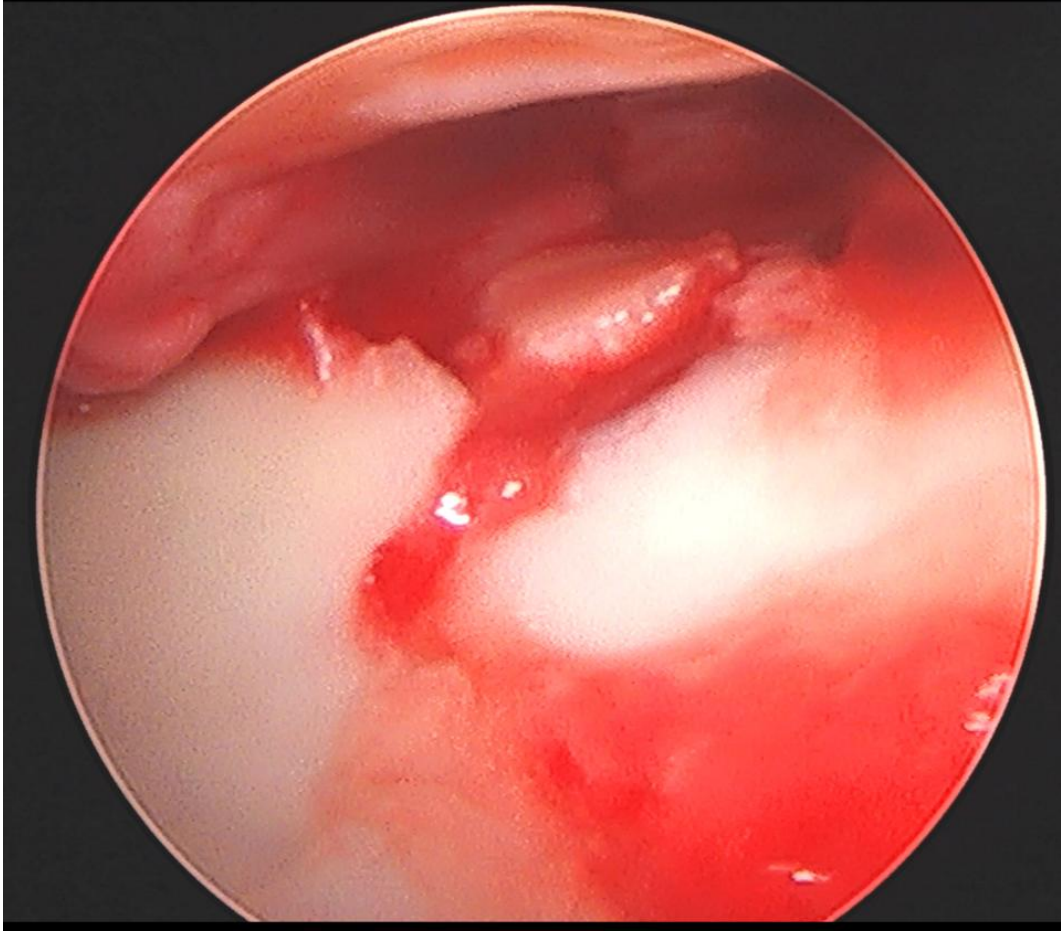


Arthroscopic Assisted

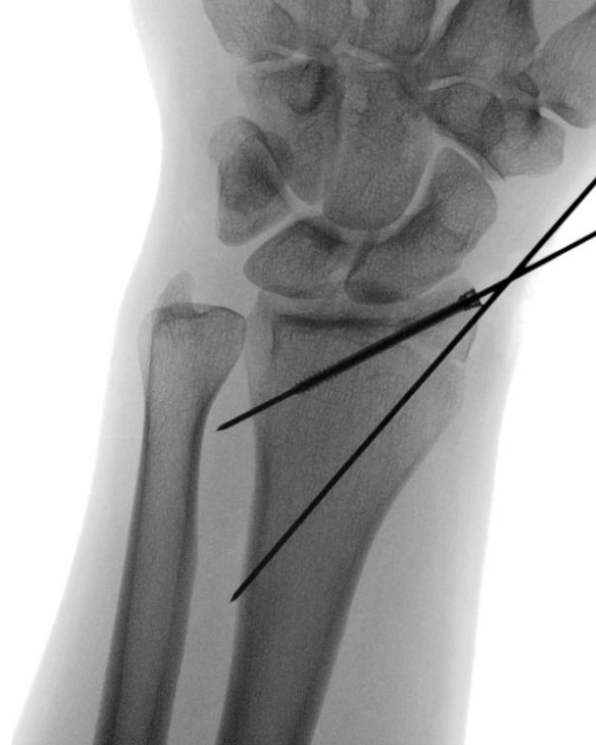
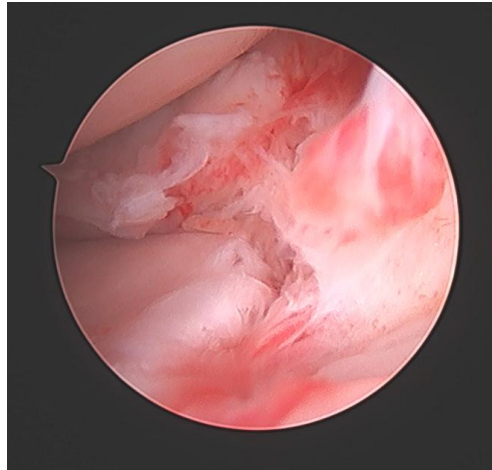


Arthroscopic Assisted (multiple fragments)





Arthroscopic Assisted



Indications for Surgery: Associated Injuries

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- Radial Styloid (and Distal Radius Fracture)

Radial Styloid + Scaphoid Fracture



Scaphoid View



Indications for Surgery: Associated Injuries

- Radial Styloid and Scaphoid Fracture
- **Radial Styloid and Carpal Instability**
- Radial Styloid and Translunate Fractures
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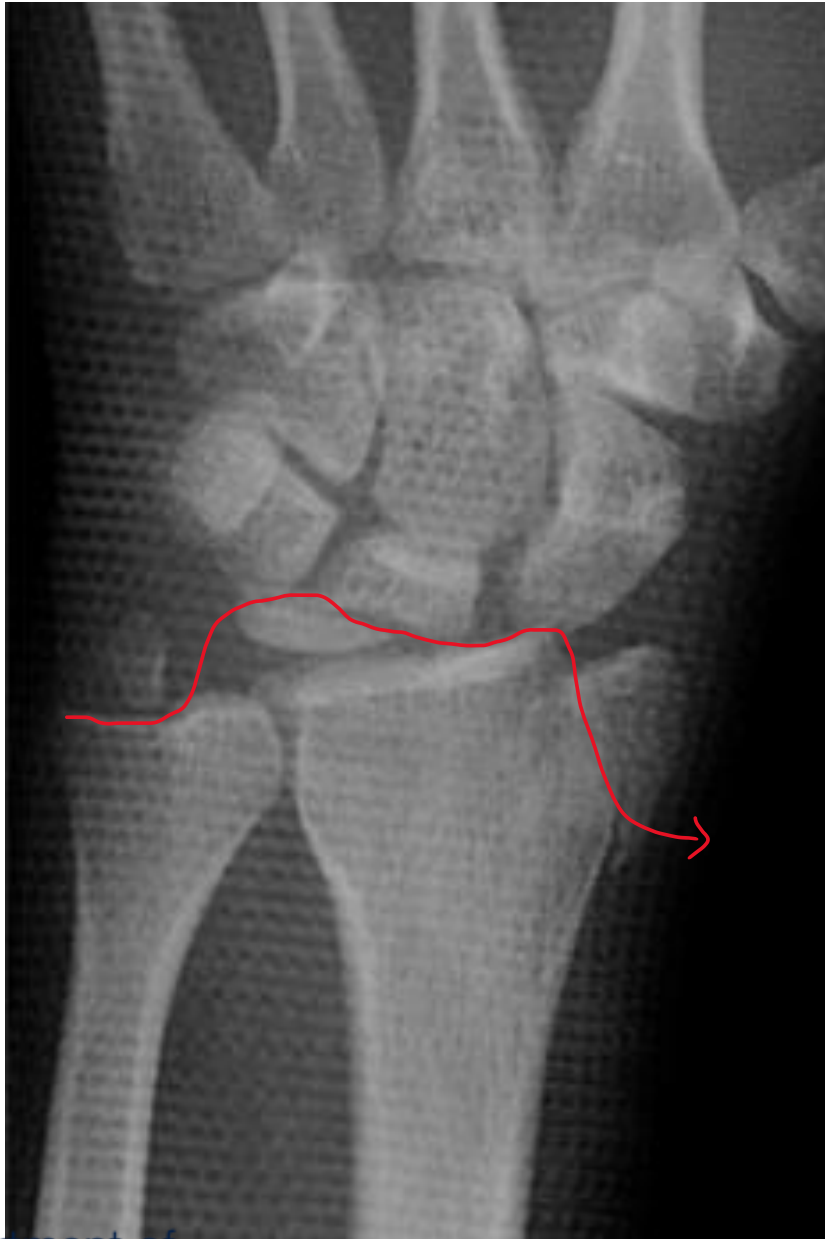
Radial Styloid Carpal Instability (Greater Arc)





Indications for Surgery: Associated Injuries

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- Radial Styloid and Carpal Instability
- **Radial Styloid and Translunate Fractures**
- Radial Styloid and Radiocarpal Dislocation
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Indications for Surgery: Associated Injuries

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Radiocarpal Dislocation



Closed Reduction





Indications for Surgery: Associated Injuries

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- Radial Styloid and Translunate Fractures
- Radial Styloid and Radiocarpal Dislocation
- **Radial Styloid (and Distal Radius Fracture)**

Radial Styloid + Distal Radius Fracture

- Volar plate Distal Radius and Radial Stress (+/- supplemental fixation)

Or

- Combined Radial and Volar Approach
 - Radial styloid + volar lunate facet
 - Radial styloid + radiocarpal dislocation

19M







59F





TIPS

1. Incision for K-wire
2. Drill guide

Volar Lunate Facet + Radial Styloid



Radial Styloid + Radiocarpal Dislocation (Volar Ligament Repair)



Combined Volar/Radial Approach



1st Dorsal Compartment



Tip of the styloid (dorsal to 1st dorsal compartment)



Radial Artery





Identify Radial Artery (sheath)











Pronate the wrist





Open 1st dorsal compartment obliquely



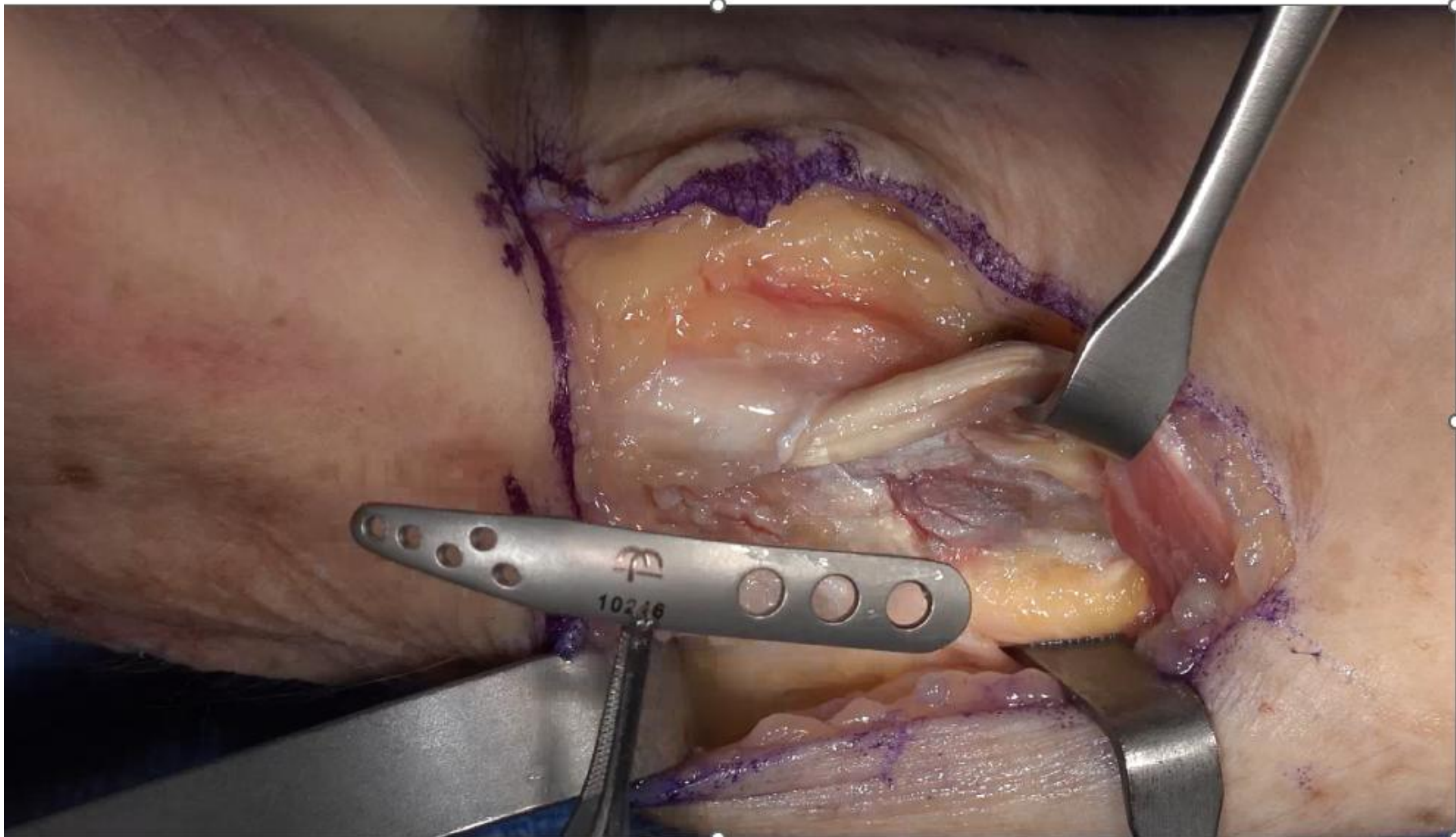


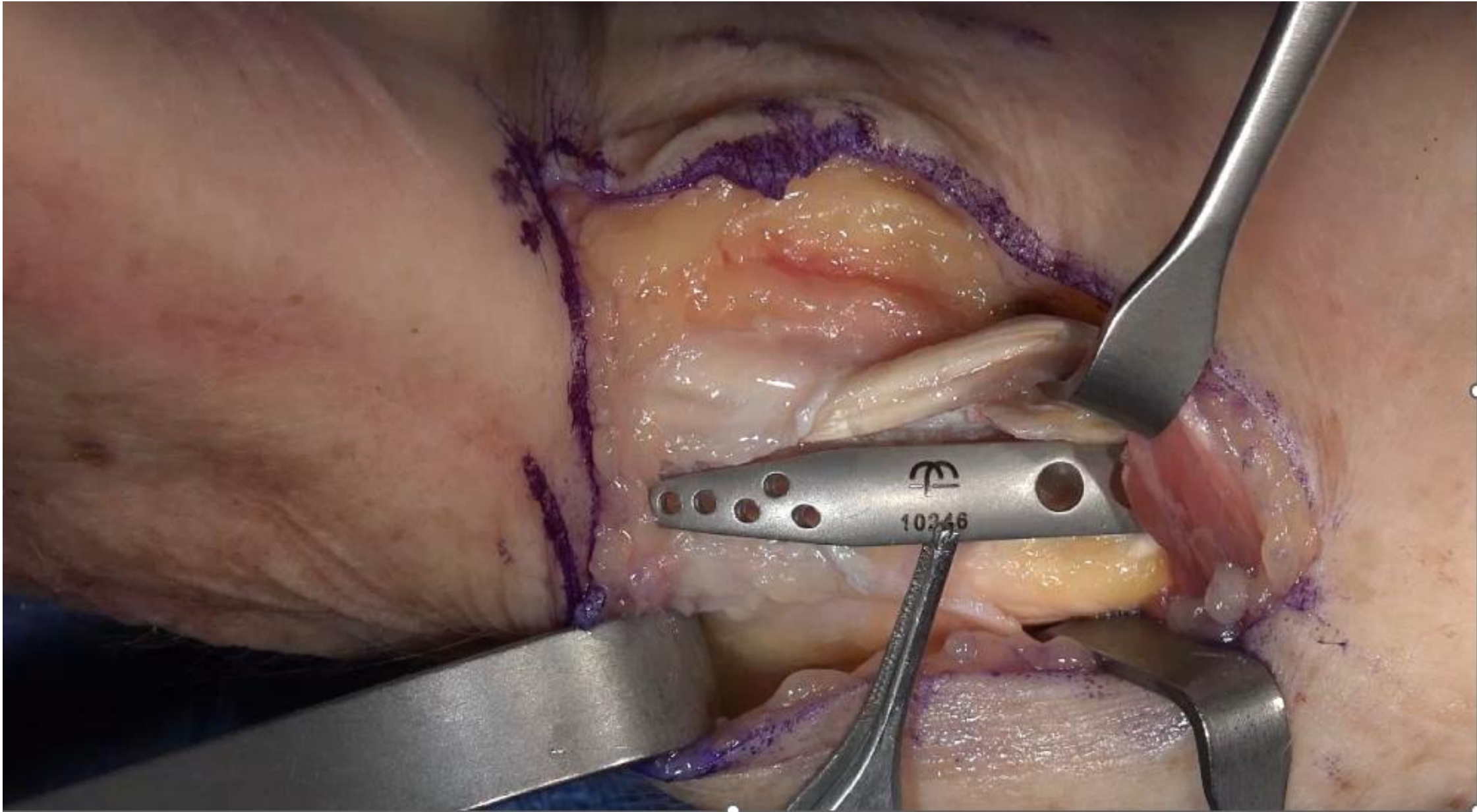
Retract 1st dorsal compartment and release BR



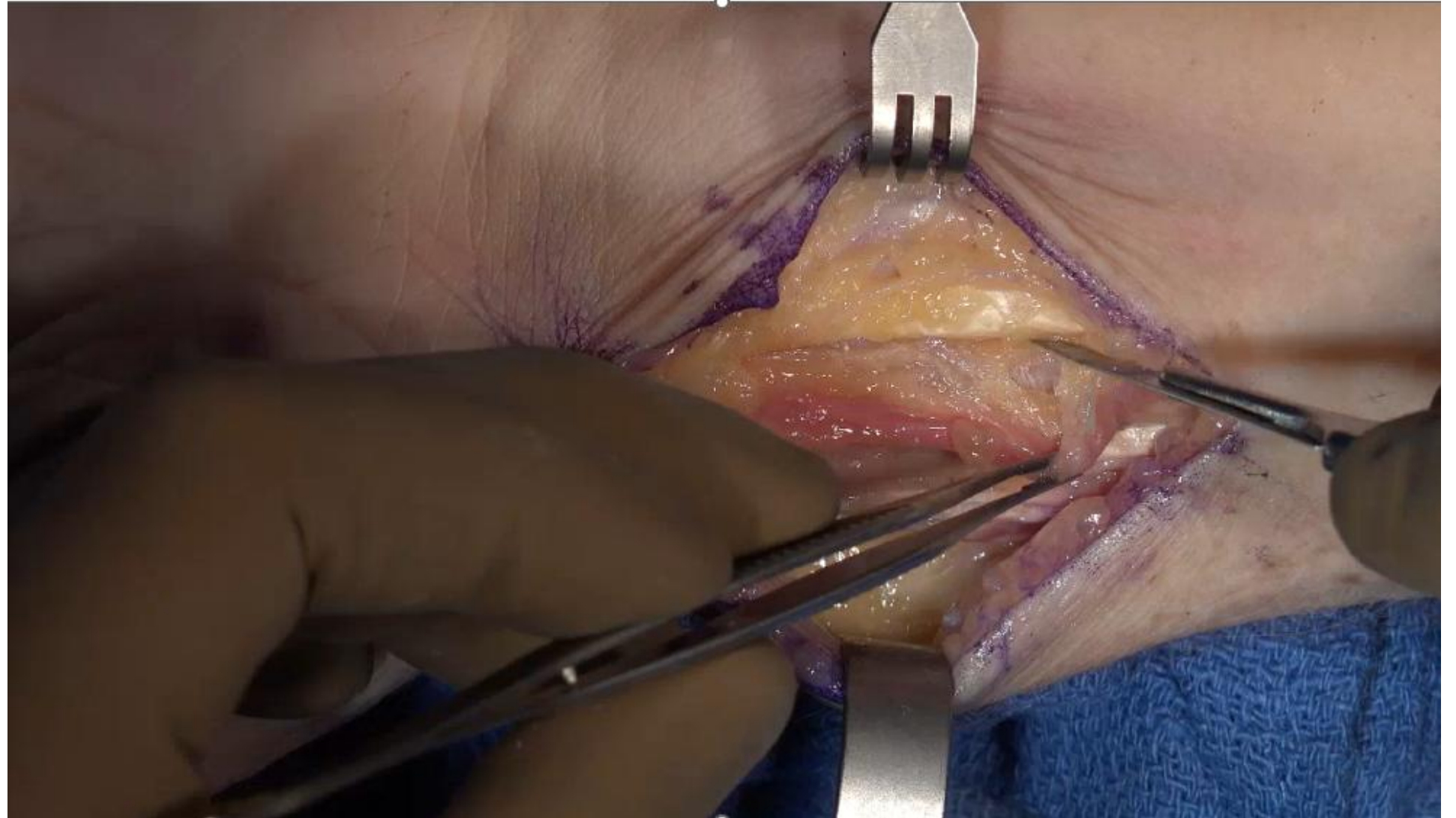


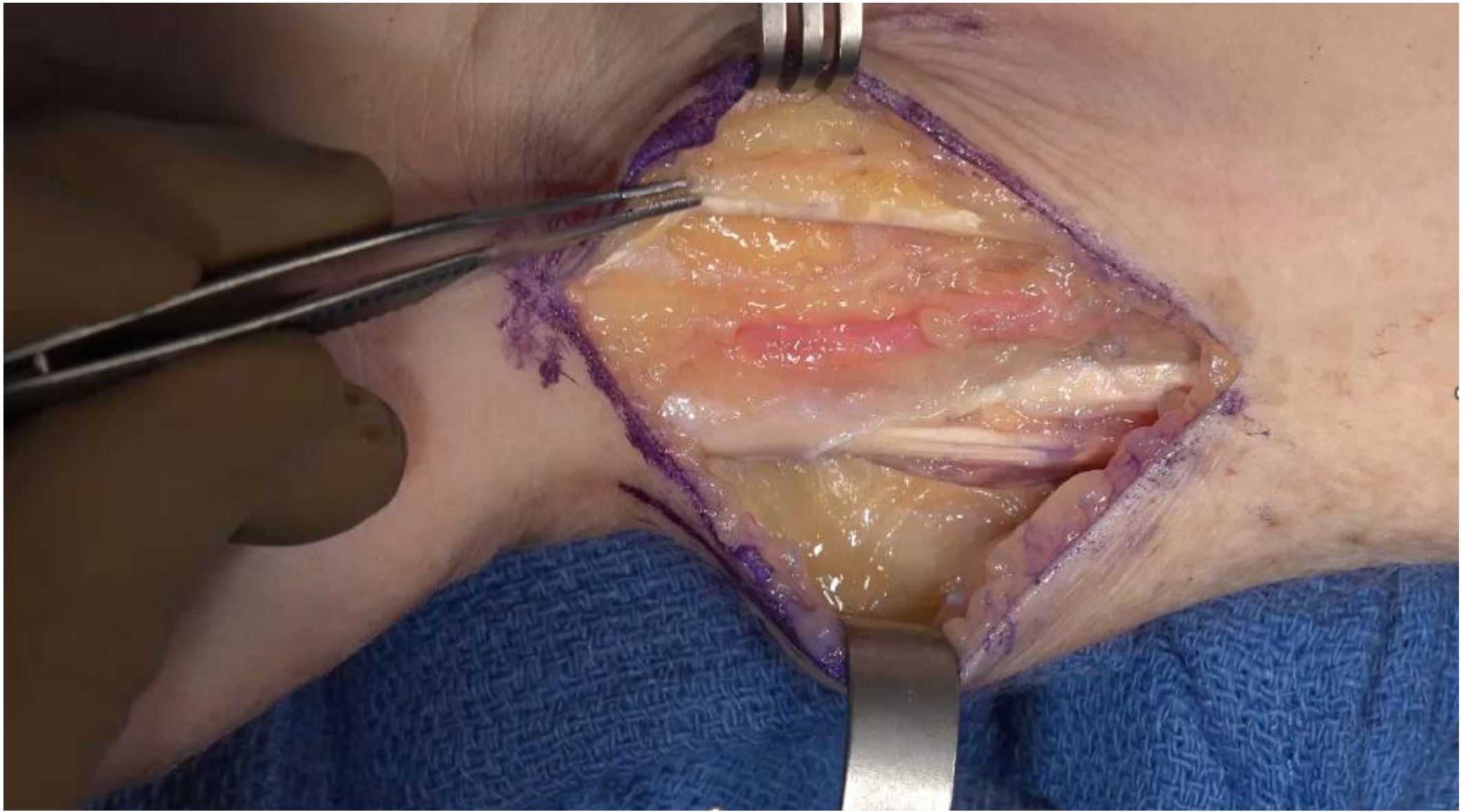




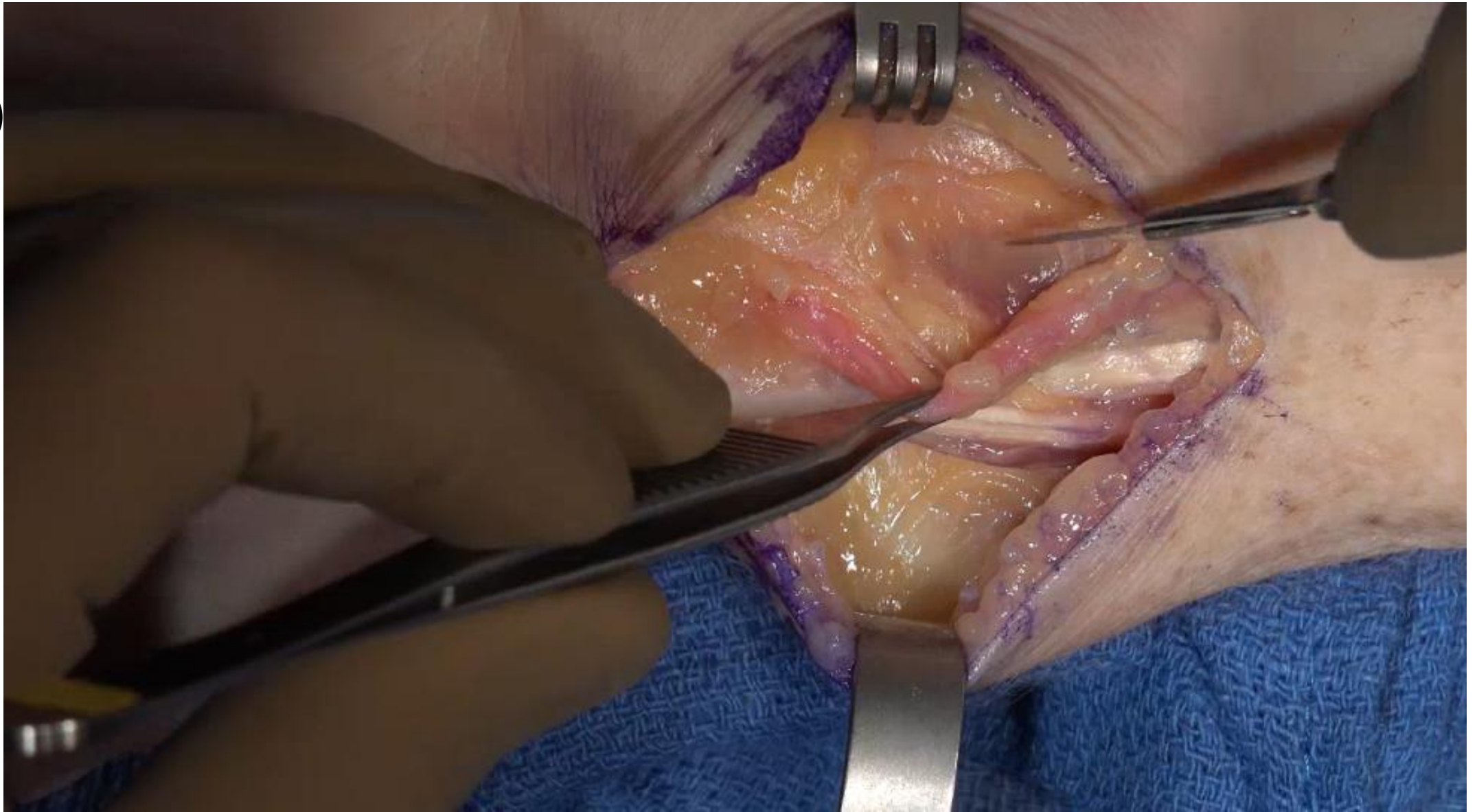


Volar Approach (expose FCR)

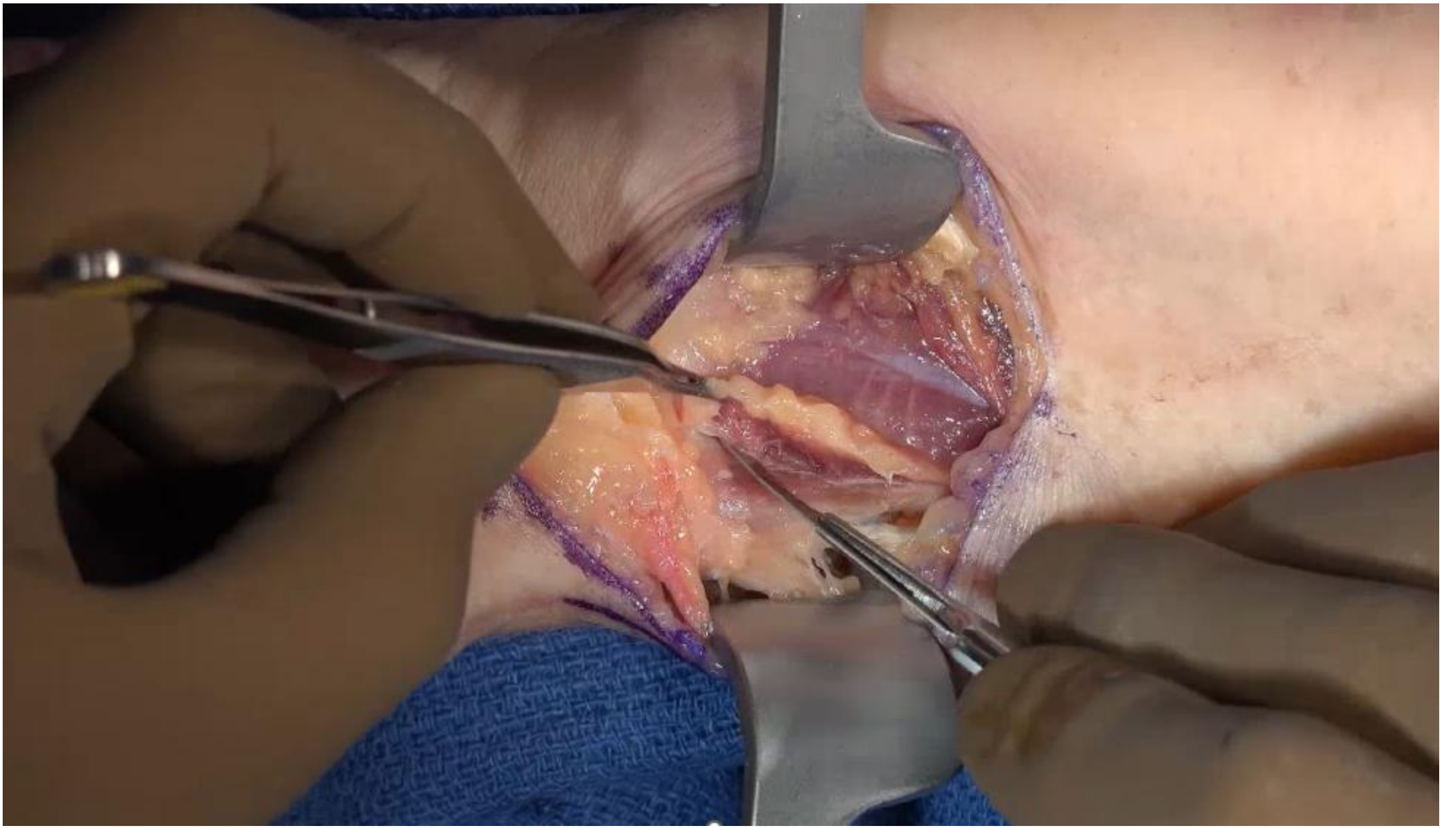




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Summary

1. Look for associated injuries

- Scaphoid
- Carpal instability (SL disruption, perilunate, reverse perilunate)
- Radiocarpal dislocation with volar ligament injury

2. **Beware of Radial Sensory (Sensitive) Nerve!!!**

- Surgical approach
- K-wires
- Tips: Incision + k-wire through drill guide

3. **Combined Volar + Radial Approach**

- Radial styloid + volar lunate facet
- Radial styloid + radiocarpal dislocation (volar ligament injury)

Thank You

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