



University of California
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Distal Radius Fractures

Preoperative Planning

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Disclosures

- I have no financial disclosures or conflicts of interest

Distal Radius Fractures

Wide Spectrum of Fracture Patterns



Preoperative Planning

Why/what do I want to fix?

How can I fix it?

- Bridging vs ORIF: Is the joint fixable?
- Volar Locking vs Fragment Specific: How does the joint come together?
- Approach: How do I gain access?

What else needs to be fixed?

- Associated injuries

Surgical Indications

Patient Factors

- Age (Chronologic/Physiologic)
- Baseline function
- Hand dominance
- Habits

Functional Demands

- Occupation
- Physical activity
- Early mobility (e.g. polytrauma)

Treatment Goals

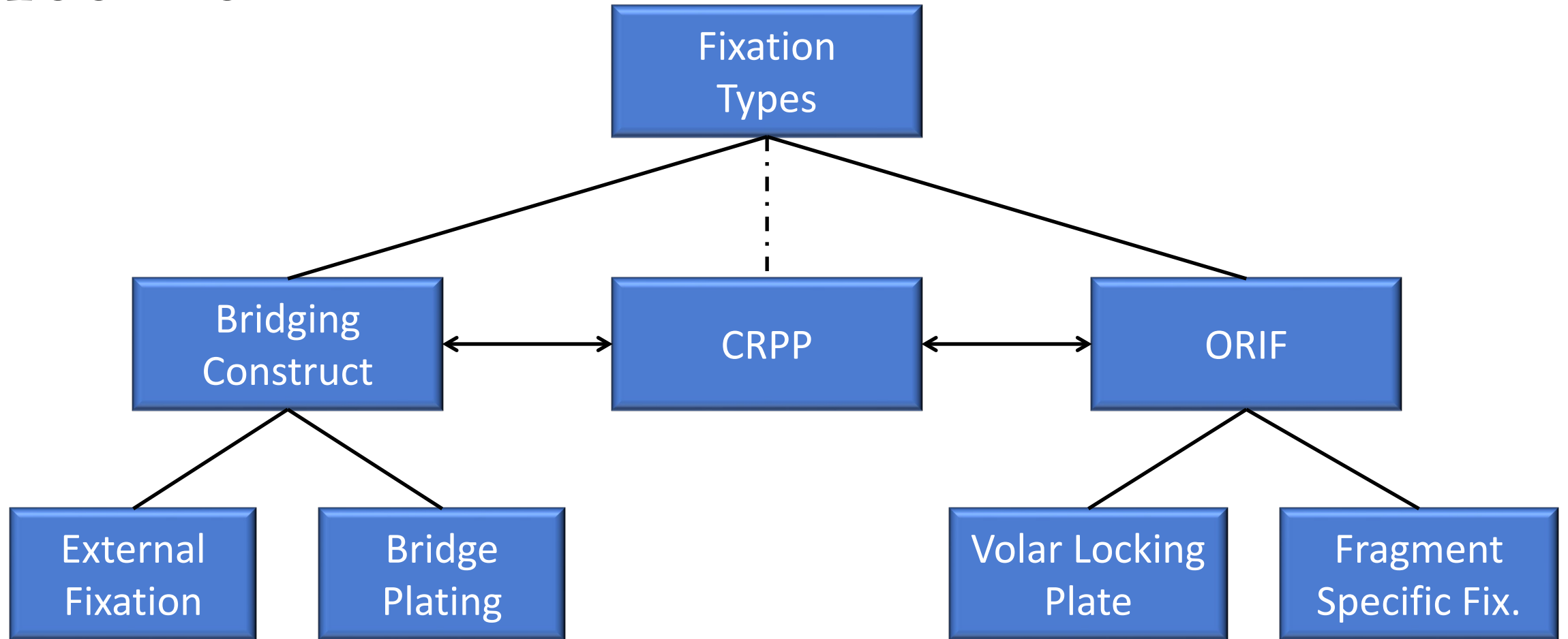
Fracture Features

- Length, alignment
- Articular congruity
- Stability

Postoperative Rehabilitation

- Early vs Delayed ROM
- Polytrauma
- Weightbearing Status
- Return to work/activity

Tool Box



Imaging

Postreduction Radiographs

- Alignment
- Articular involvement
- Comminution



Imaging

Traction Views

- Indirect reduction of articular fractures via ligamentotaxis



Imaging

Advanced Imaging (Postreduction)

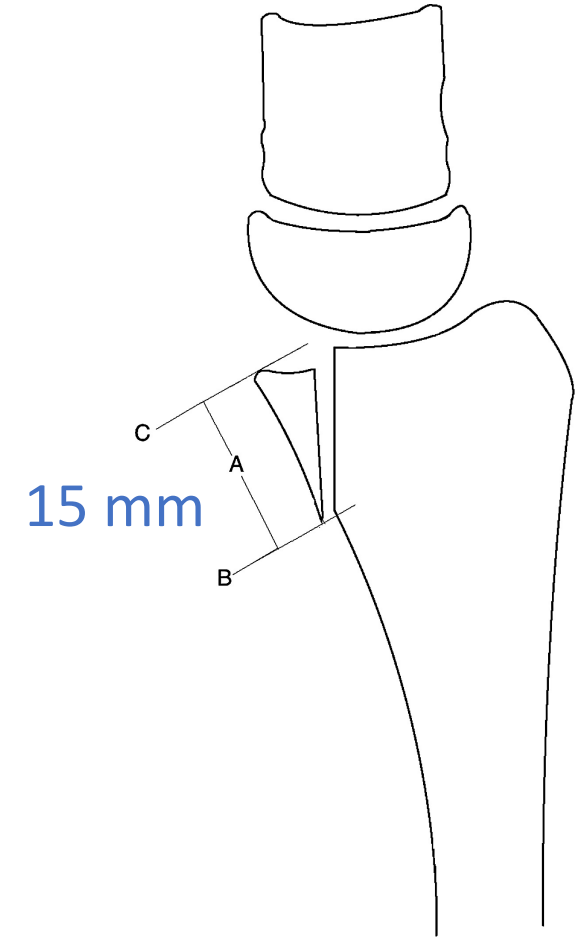
- Articular displacement – surgical indications
- Articular comminution
- Size of articular fragments – fixation?
- Associated injuries

Imaging

SCIENTIFIC ARTICLE

Volar Plate Fixation Failure for Volar Shearing Distal Radius Fractures With Small Lunate Facet Fragments

John D. Beck, MD, Neil G. Harness, MD, Hillard T. Spencer, MD



Imaging

Traction Views

- Indirect reduction of articular fractures via ligamentotaxis



Bridge Constructs

Indications and Applications

- Metaphyseal Comminution
- Articular Comminution/Unreconstructible joint
- Maintain length/alignment
 - Prevent collapse
 - Supplement fixation

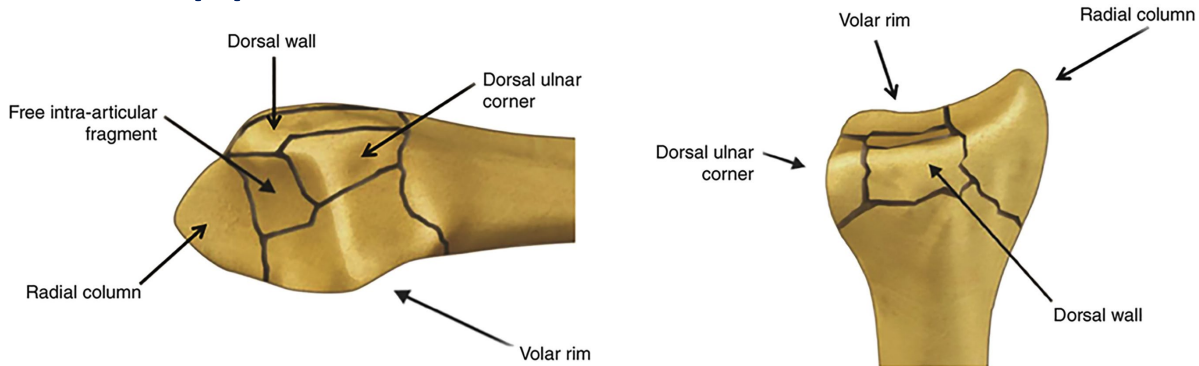


ORIF

Volar locked plating is the workhorse for distal radius ORIF

➤ **Important to capture lunate facet!**

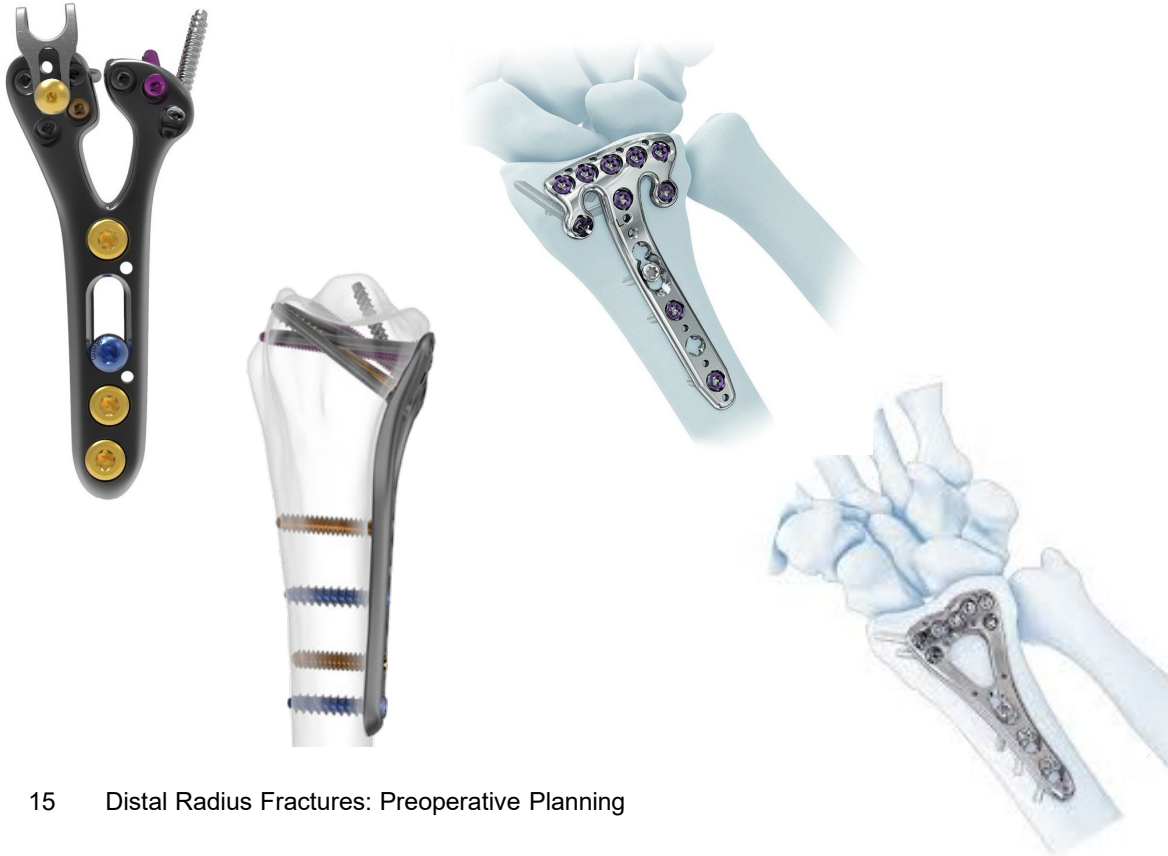
However, certain patterns require different implants and different approaches



ORIF

Volar Locking Plate

- Workhorse of DRFx fixation
- Plate designs address specific fracture patterns



Fragment Specific Fixation

- Articular impaction
- Distal articular fractures
- Volar ulnar corner <15mm
- Chaffeur's fracture
- Dorsal impaction/shear



Fragment Specific vs. Locked Volar Plating

Limitations of Fragment-Specific Fixation

- May need 2nd approach → STIFFNESS
- Less rigid implants
- Higher complication rate?

	Volar Locking Plate (n = 24)	Fragment-Specific (n = 25)	P Value
Minor complications*			
Transient radial neurapraxia	1	6	
Carpal tunnel syndrome	2	2	
Tendinitis	0	1	
Skin adherence	1	1	
<i>Total minor complications</i>	4	10	.11
Major complications†			
Loosening of hardware	1‡	1	
Loosening of hardware & EPL rupture	0	1	
Complex regional pain syndrome	0	1	
<i>Total major complications</i>	1	3	.61
Total minor and major complications	5	13	< .05§

EPL, extensor pollicis longus.

*Minor complications: transient problems, considered not to affect the final outcome.

†Major complications: severe complications influencing the final outcome.

‡This patient was allocated to the volar locking plate group, but received the fragment-specific fixation.

§A significant value ($P < .05$).

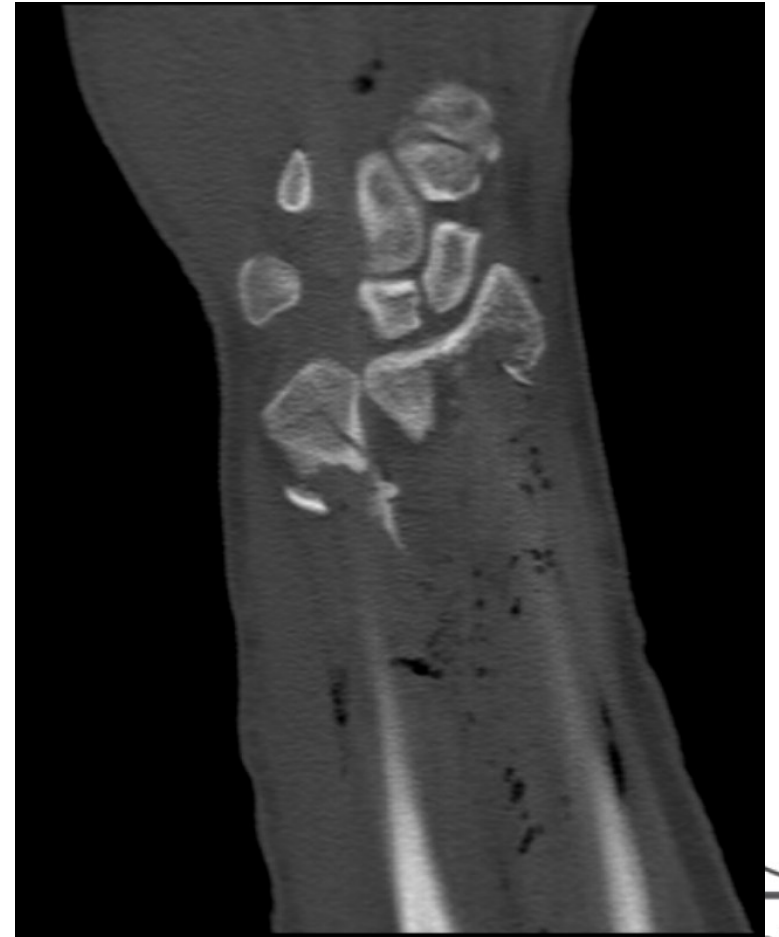
Case TC

Injury Films



Case TC

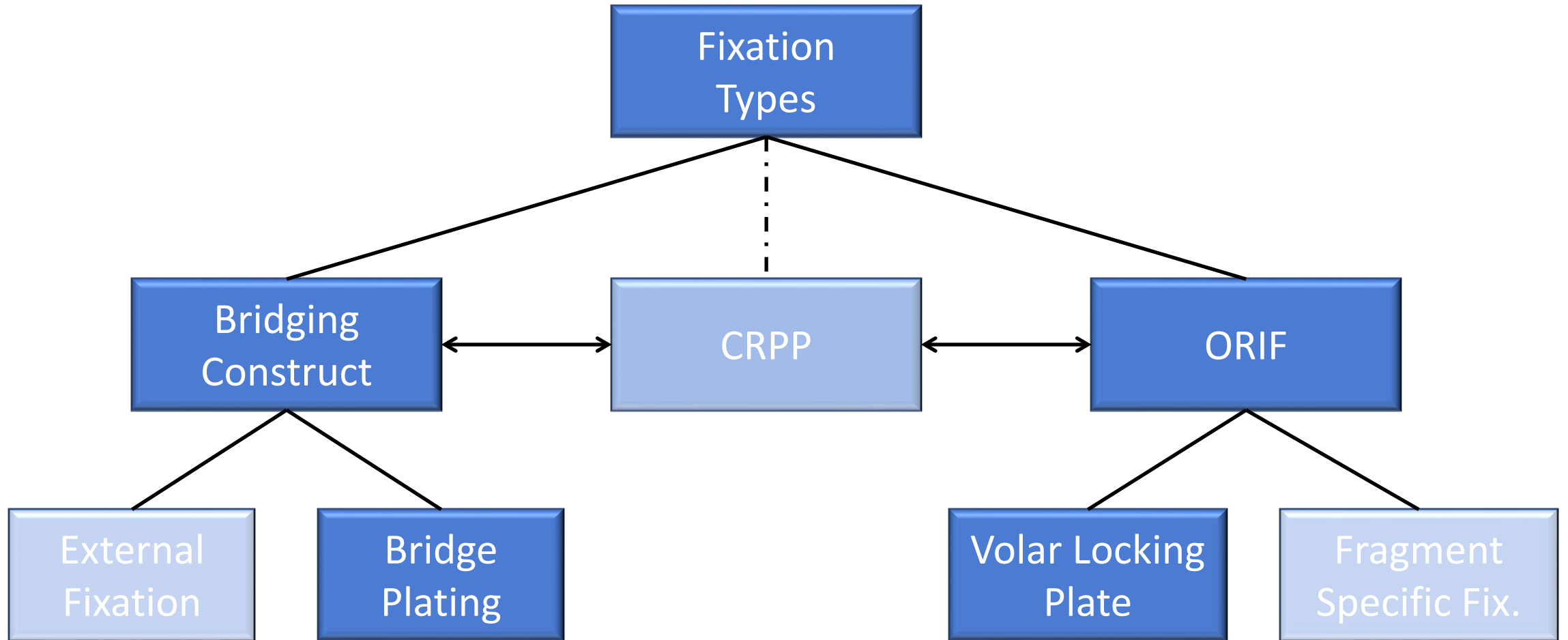
CT Wrist



Case TC

Traction Views (s/p Ex-Fix)





Case TC

Distal Radius: Dorsal Spanning Plate

- Restore overall length and alignment



Case TC

Distal Radius: Mini Fragment Plate

- Fine tune alignment and length
- Build articular block



Case TC

Distal Radius: Volar Plate

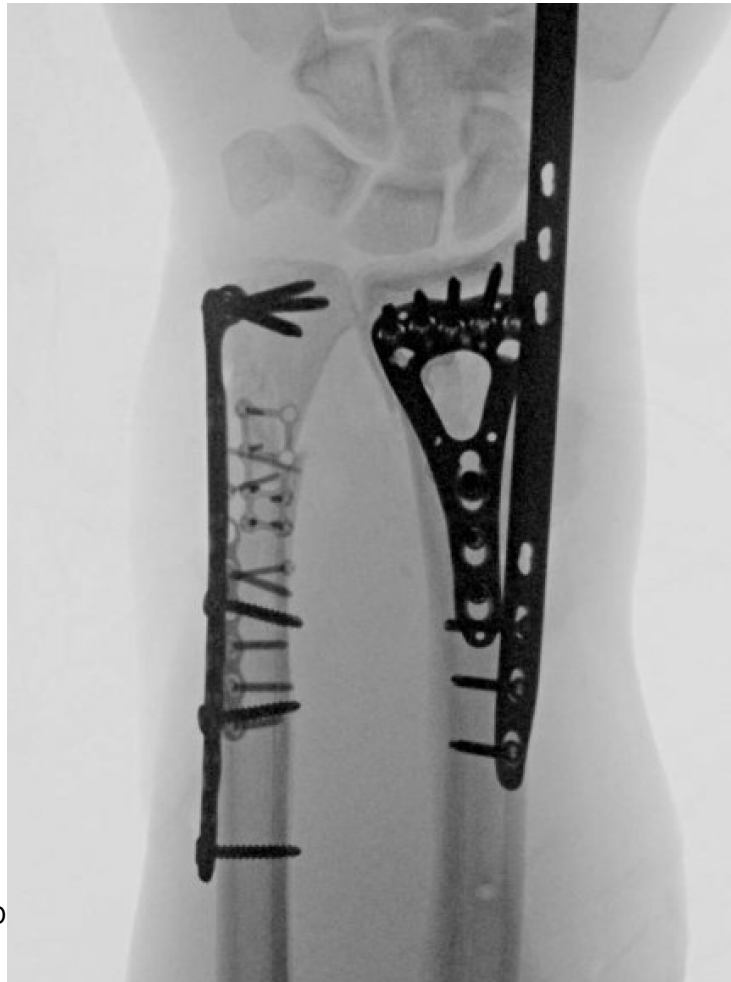
- Definitive fixation



Case TC

Distal Ulna: Plate Fixation

- Mini fragment + Locking (midfoot fusion plate)



Case TC

Postoperative Imaging



Thank You



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