

# Debate: Distal Humerus Fracture – Argument for Repair

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# My Opponent

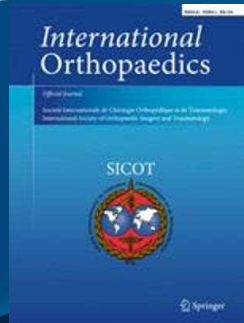




# Treatment Goal

Regardless of complexity, the primary treatment objective remains the same:  
*Definitive stable fixation that allows early progression to motion*

# What Does the Literature Say?



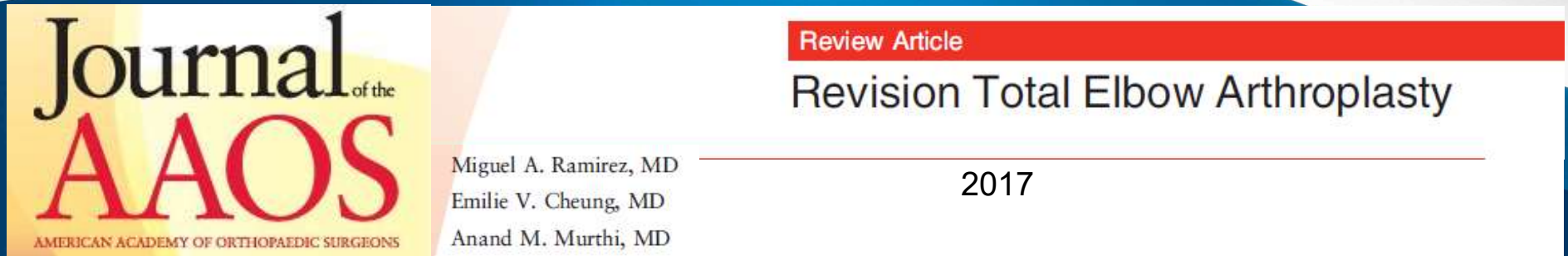
## Arthroplasty compared to internal fixation by locking plate osteosynthesis in comminuted fractures of the distal humerus

Alexander Ellwein • Helmut Lill • Christine Voigt •  
Pauline Wirtz • Gunnar Jensen •  
Jan Christoph Katthagen

Received: 7 October 2014 / Accepted: 4 December 2014 / Published online: 23 December 2014

- n=29 patients and compared TEA with ORIF in AO Type C fractures of distal humerus
- TEA & ORIF led to comparable functional outcomes, but concluded that ORIF remains the gold standard for young and old patients because of the lifelong loading limitation after TEA, unknown implant survival, and problematic revision surgery.

# What Does the Literature Say?



- “Revision TEA and the management of periprosthetic fracture entail substantial risks of transient and permanent nerve injury, infection, implant loosening, and wound complications”

# What Does the Literature Say?

Review Article

Clinics in Orthopedic Surgery 2019;11:369-379 • <https://doi.org/10.4055/cios.2019.11.4.369>

## Total Elbow Arthroplasty: Clinical Outcomes, Complications, and Revision Surgery

Jae-Man Kwak, MD, Kyoung-Hwan Koh, MD\*, In-Ho Jeon, MD\*

*Department of Orthopedics, Biomechanics Laboratory, Mayo Clinic, Rochester, MN, USA,*

*\*Department of Orthopedic Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea*

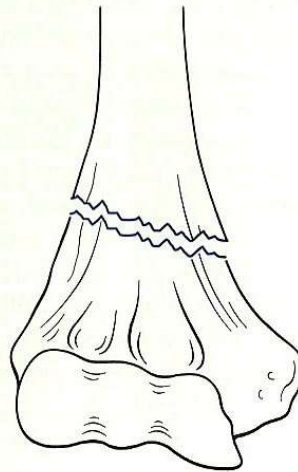
- “It is well known that survival in TEA is substantially longer in patients with inflammatory arthritis than in those with trauma-related indications.”

Amirfeyz & Blewitt Arch Orthop Trauma Surg. 2009

Hildebrand et al. JBJS 2000

# Classification

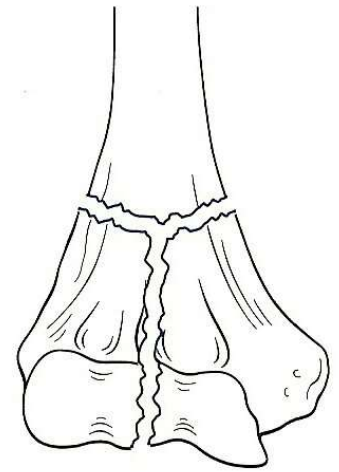
## AO/OTA Classification



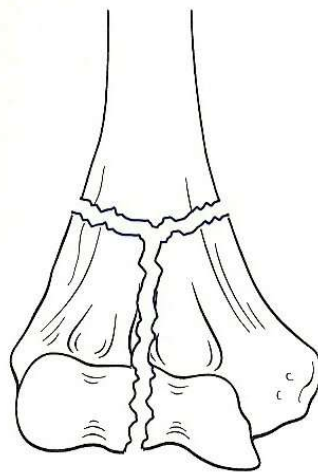
A



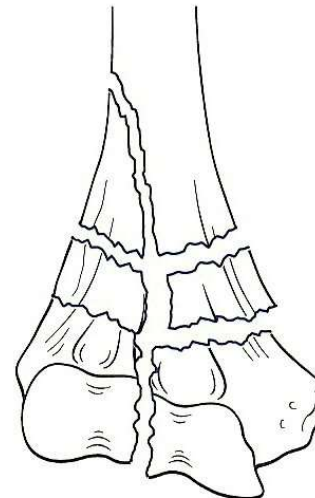
B



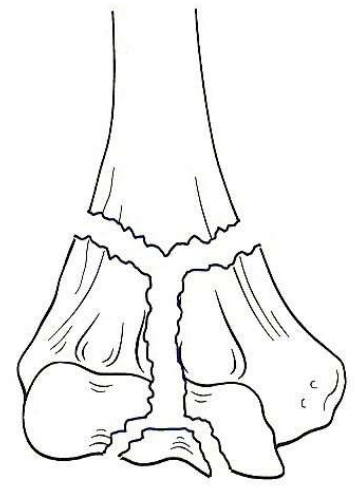
C



C1



C2



C3

# Clinical Vignette

79 year old female

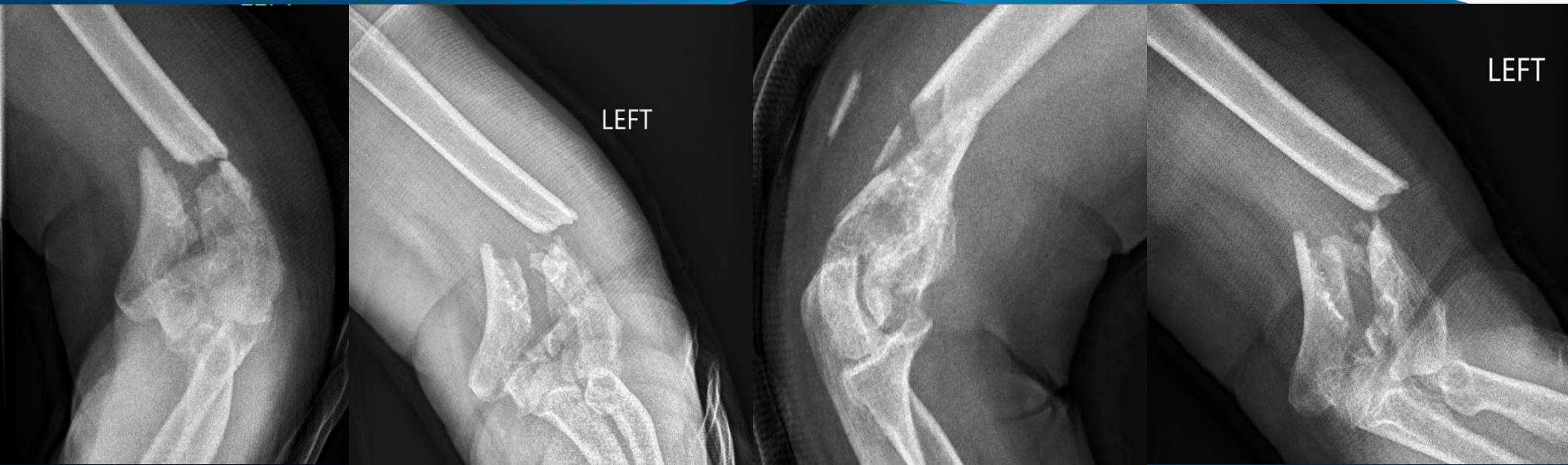
Sustained a fall 4 days prior, with immediate pain and popping sound

Seen in ER with open distal humerus fracture. Seen in clinic 8 days post-injury

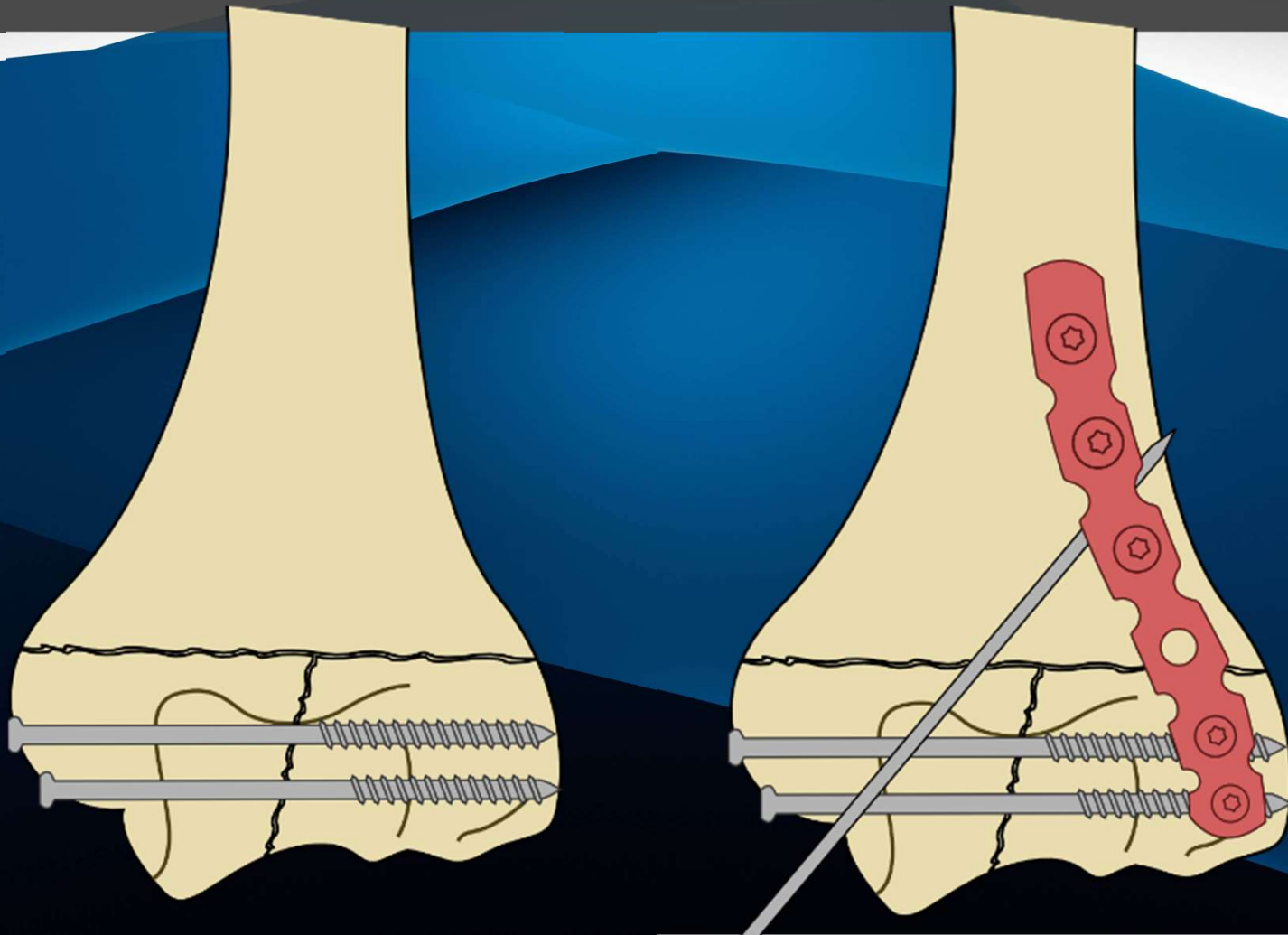
PMH: Anxiety, depression, hypertension, & hypothyroidism

Neurovascular status notable for decreased sensation in the ring & small finger. Patient could make a fist.

# Gastillo Grade I Open Fracture

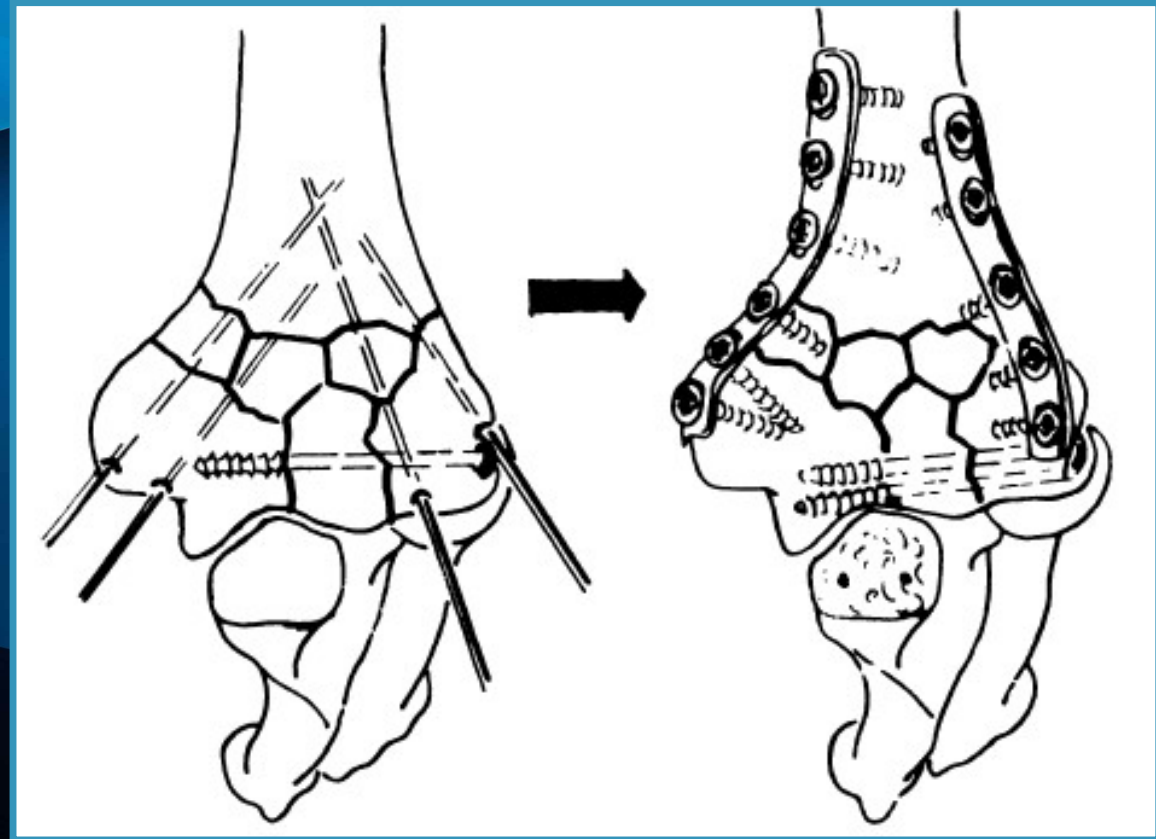


# Tenents of Fixation

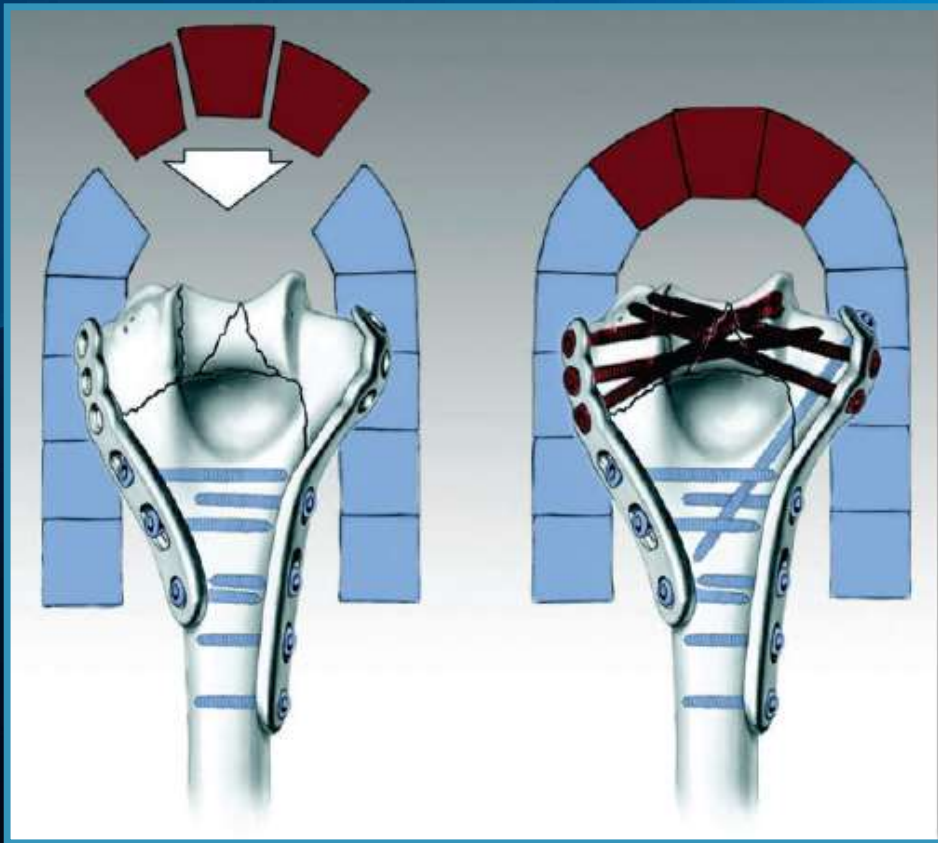


# Tenets of Fixation

Temporary K-wire fixation of the supracondylar region is converted to rigid fixation with plate and screw construct.

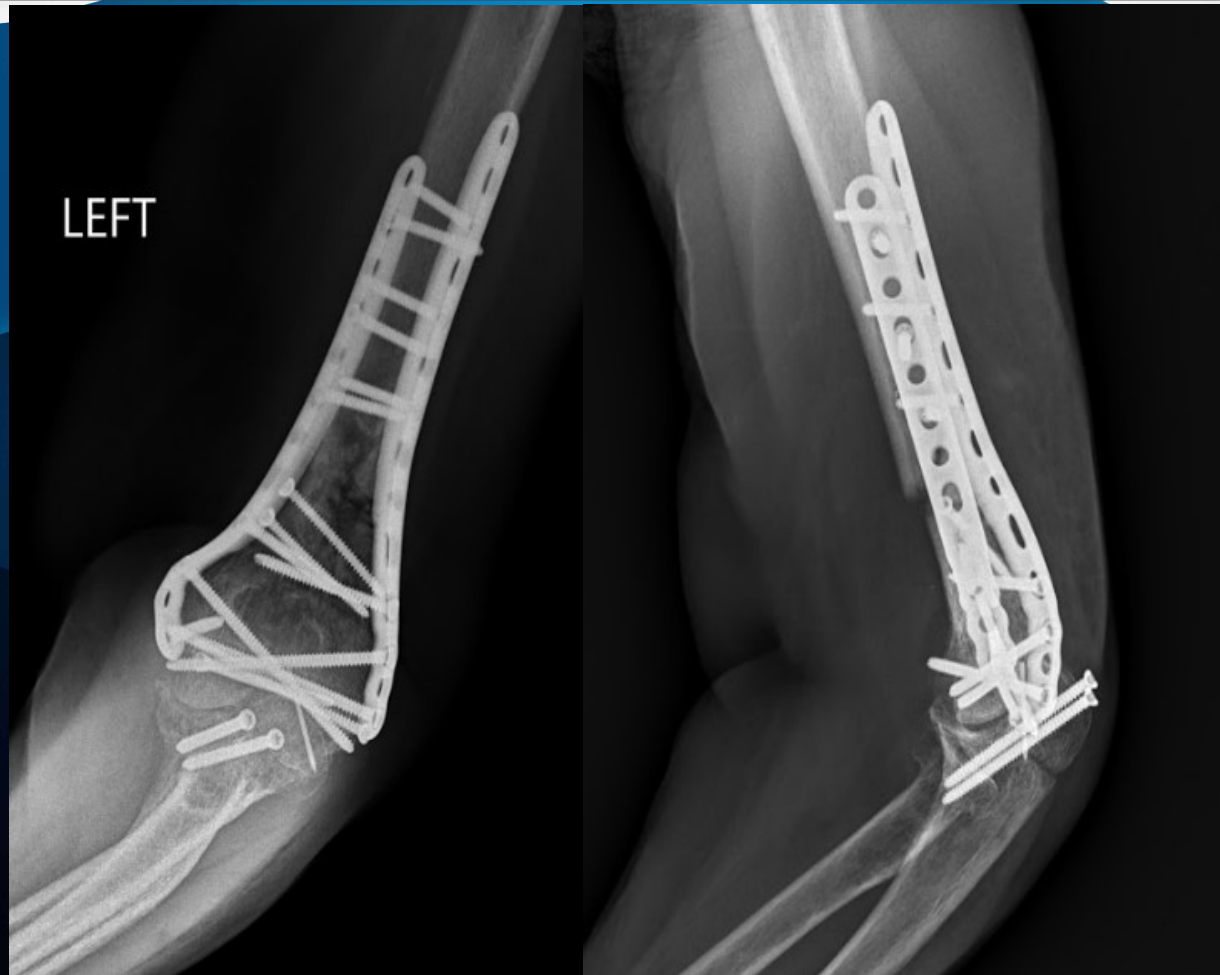


# Tenets of Fixation



- Based on principle of restoration of the keystone of an arch.
- Standard AO/ASIF fixation with 90/90 plating often leads to inadequate fixation of the articular fragments.

# 3 Months Postop



# Conclusions

- Adherence to general principles of rigid fixation is key in treating intraarticular distal humerus fractures.
- While 90/90 plating has been the guideline recommended by AO, parallel plating has been shown to be an effective method of fixation.

# Thank You



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