

30th Annual Orthopaedic Trauma Update: A Tale of Two Cities

Olecranon Osteotomies for Intrarticular Distal Humerus Fractures: Lessons Learned

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Distal Humerus Fractures are Complex and Technically Demanding Injuries to Manage

Operative intervention often indicated, but it's often complicated by:



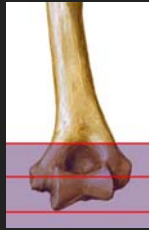
- Osteoporotic bone
- Difficult exposure
- Metaphyseal and/or articular comminution
- Preoperative ulnar nerve symptoms

Distal humerus fractures occur in a bimodal age distribution

- In young males, as a result of high-energy mechanisms
- In older females with osteoporosis, as a result of low-energy falls

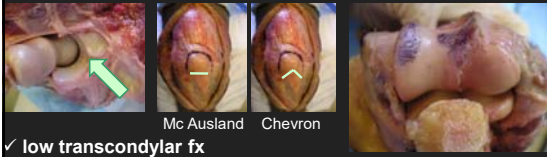
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Surgical Approach permits different joint exposures


Olecranon osteotomy-100%	Paratricepetal-90%	Triceps splitting-0%
		

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Olecranon osteotomy



✓ low transcondylar fx
✓ intra-articular fx



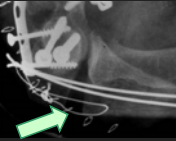

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Olecranon Osteotomy

Provides excellent exposure of the distal humerus


However....

- Reports of complications numerous:
 - delayed union
 - non union
 - separation of the osteotomy
 - painful hardware up to 85% of cases



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Failed osteosynthesis despite adequate exposure with olecranon osteotomy



Poor reduction
Inadequate fixation
Non or malunion will result
Up to 10% of cases following ORIF

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Case: elbow fracture
Elderly, thin man sustained low energy injury
Low T-condylar



Surgical Approaches: What to do?

- Triceps Splitting
- Olecranon Osteotomy



Arch Orthop Trauma Surg (2014) 134:803–811
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TRAUMA SURGERY

Comparing approaches to expose type C fractures of the distal humerus for ORIF in elderly patients: six years clinical experience with both the triceps-sparing approach and olecranon osteotomy

Chi Zhang · Biao Zhang · Cong-feng Luo

Compared the effects of two exposure methods: 1) triceps-sparing approach and 2) olecranon osteotomy, on the functional outcomes
Cohort: Elderly patients with type C distal humerus fractures treated with ORIF
Results: Better functional outcomes for type C1 and C2 distal humerus fractures that were exposed using the triceps-sparing approach rather than olecranon osteotomy
Similar recoveries in elbow function were achieved using either approach, even in the most complex fractures (C3 fractures)

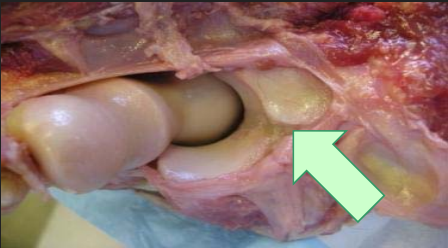
Paratricipital Approach:

My preferred technique for C3 distal humerus fxs

- Triceps is on
- You can still do an olecranon osteotomy
- Keeps your options open for TEA, if needed later on
- Better triceps preservation because insertion is intact
- Intact olecranon is template for reconstruction of trochlea

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If olecranon intact then trochlea can be reduced to it




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TECHNIQUE

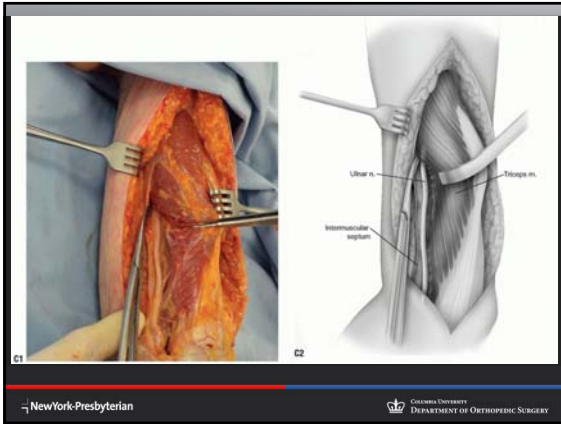
Paratricipital-Triceps Splitting "Two-Window" Approach for Distal Humerus Fractures

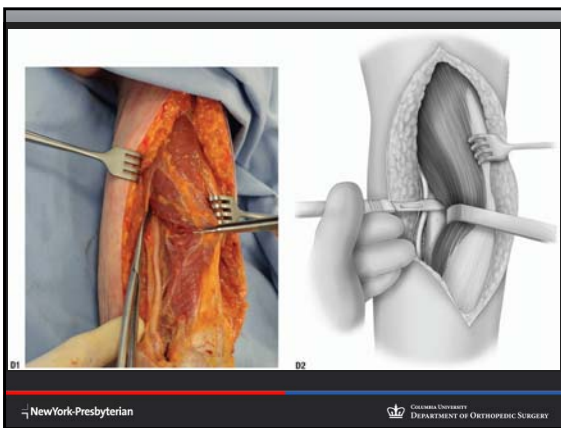
Marion Mühlbauer-Fodor, MD, Halil Bekler, MD,† Valerie M. Wolfe, MD,‡ Jason McKeon, MD,‡ and Melvin Paul Rosenwasser, MD, PhD‡*

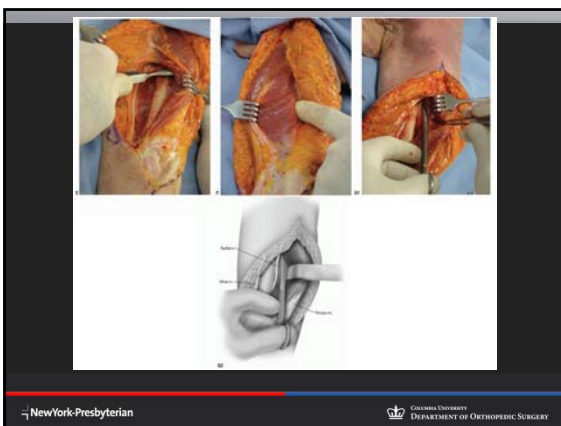


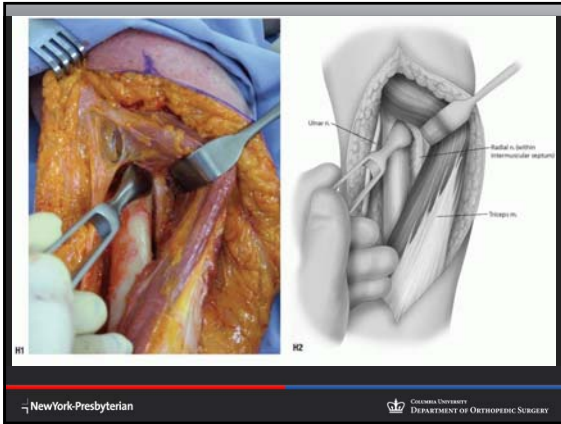
Tech Hand Up Extrem Surg 2011

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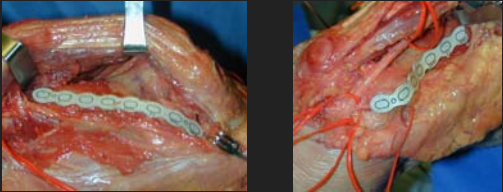
Paratricipetal Approach

- What's nice about it is you can start the procedure and since the triceps deep medial head is still attached
- It does allow for trochlea inspection and reassembly even with comminution
- Sequence of fixation based on side of major metadiaphyseal comminution
- Provisional longitudinal column K wires help the reassembly and do not block the plate screws
- Articular block screws are preferably outside the plate to guide the trajectory where you want despite variable axis capability

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Surgical Approaches: What to do?

-Two windows



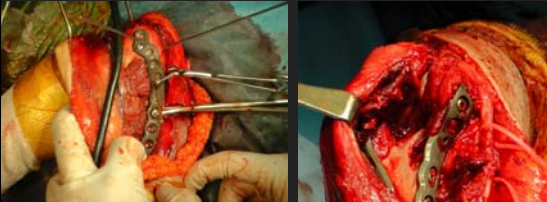
Lateral Column **Medial Column**

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What to do?

Olecranon Osteotomy vs Two Window Approach

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- Excellent articular exposure for 90/90 precontoured plating
- Do Not Narrow the distal humerus
- Maintain Olecranon Fossae

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