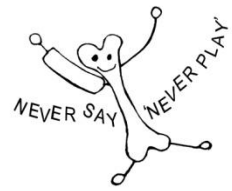


FRACTURES OF THE LATERAL CONDYLE OF HUMERUS IN CHILDREN

DR. MANDAR ACHARYA
PEDIATRIC ORTHO SURGEON
PUNE



- 17% of all distal humeral fractures
- Rarerly associated with neuro vascular injuries

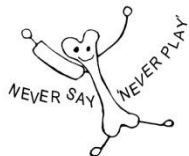


RADIOLOGY

SEEMINGLY NORMAL XRAYS



WATCH FOR SOFT TISSUE SWELLING AND CORRELATE CLINICALLY



FRACTURE LATERAL CONDYLE



STRESS VIEW!

SAME PATIENT



INTERNAL OBLIQUE VIEW



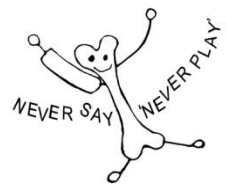
[J Bone Joint Surg Am.](#) 2007 Jan;89(1):58-63.

Internal oblique radiographs for diagnosis of nondisplaced or minimally displaced lateral condylar fractures of the humerus in children. [Song KS](#), [Kang CH](#), [Min BW](#), [Bae KC](#), [Cho CH](#).



OPPOSITE ELBOW A FRIEND IN NEED!!





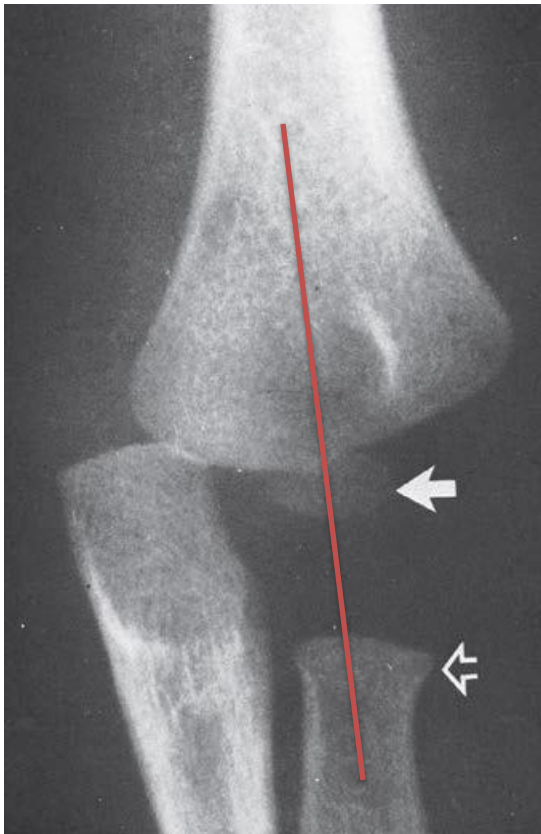
RADIO CAPITELLAR LINE

- It is necessary to differentiate between complete distal humeral physeal separation and a true lateral condylar fracture in a young child.
- In displaced lateral condylar fracture, RC line is lost and there is lateral translocation of ulna
- In complete physeal separation, RC line is intact and proximal Radius and Ulna are displaced postero-medially

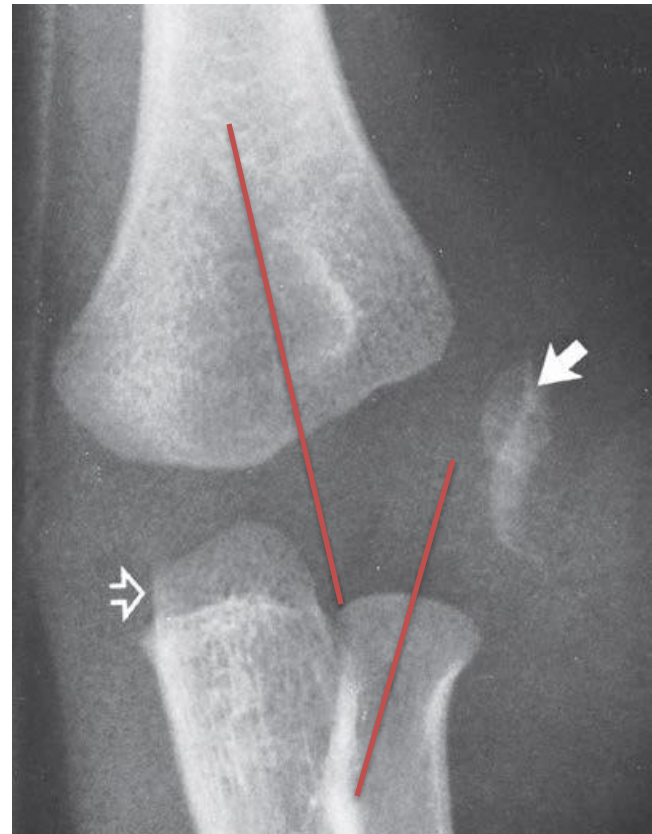


RADIO CAPITELLAR LINE

Complete Physeal Separation

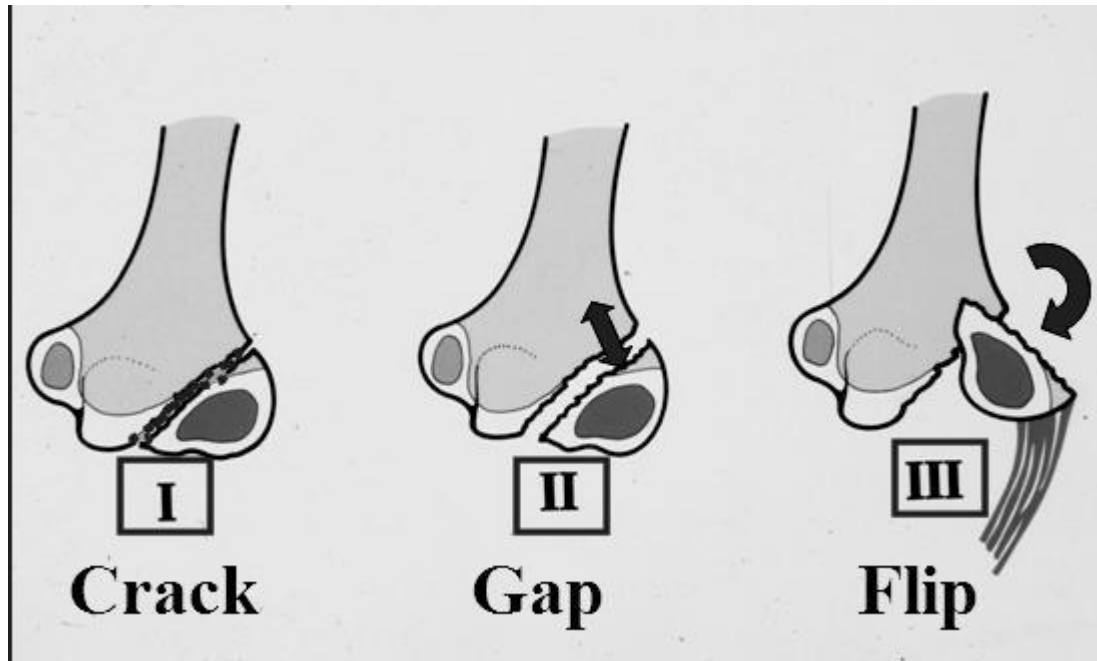


Fracture Lateral Condyle

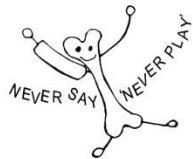




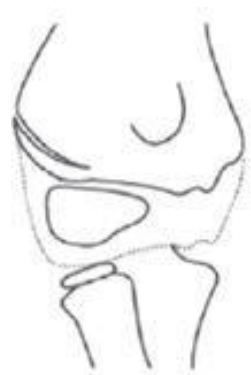
CLASSIFICATION



Stanley's Classification



STAGES OF DISPLACEMENT



Stage 1



Stage 2



Stage 3



Stage 4

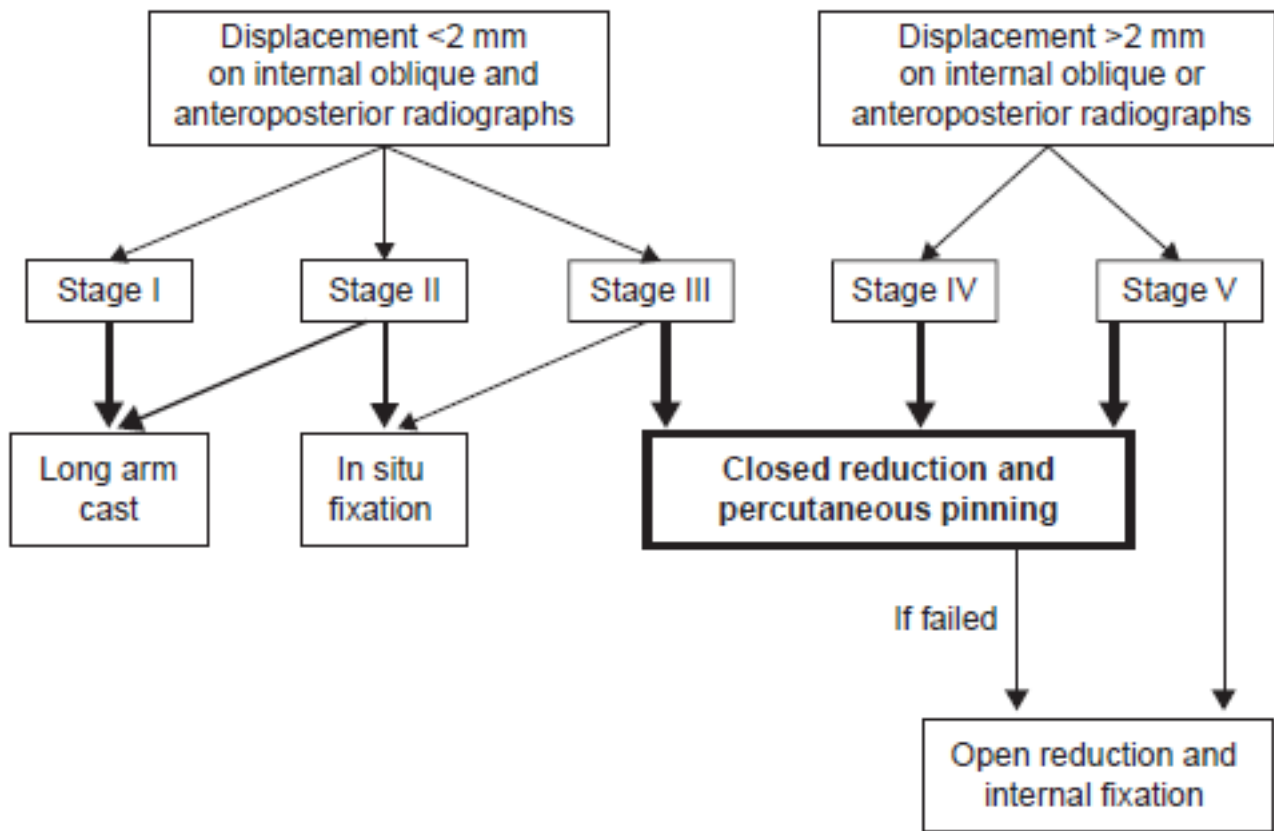


Stage 5

SONG ET. AL.



TREATMENT PROTOCOL





ARTHROGRAM



Arthrogram stops short of joint surface.

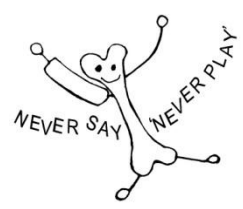


Arthrogram dye goes through to joint surface.



ARTHROGRAM





MRI



INTACT CARTILAGE



TREATED CONSERVATIVELY



OPEN REDUCTION

- Lateral approach
- Completely clean the hematoma
- Anatomical reduction under vision and palpation of joint surface
- Stay anterior, avoid posterior stripping.
- Fix with two divergent K wires or 4mm CC screw if large metaphyseal fragment.
- Check stability with varus / valgus stress after pinning
- Suture lateral periosteum to avoid spur formation.
- Immobilise till radiological union (6 to 12 weeks)



COMPLICATIONS



SPUR FORMATION



CUBITUS VARUS

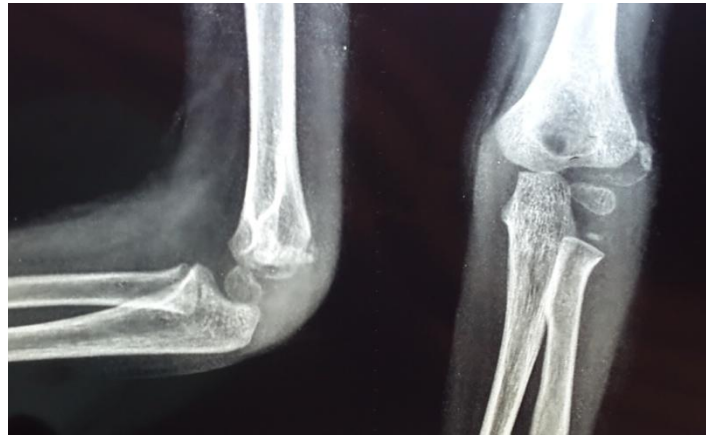


NON-UNION

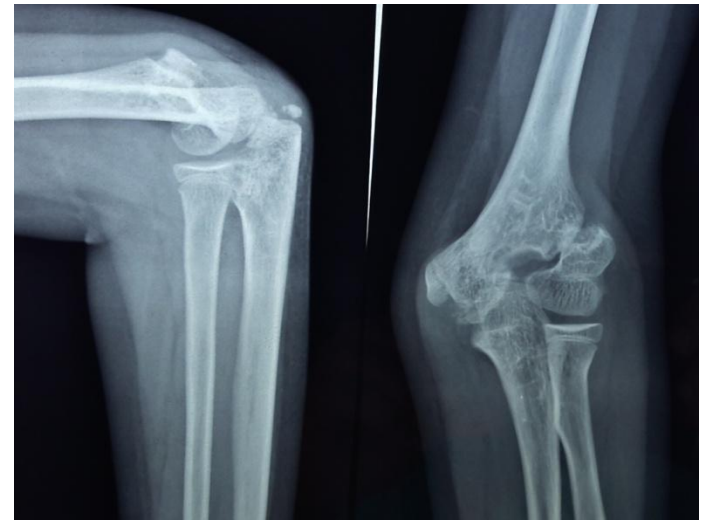
INJURY FILM



AFTER 4 MONTHS



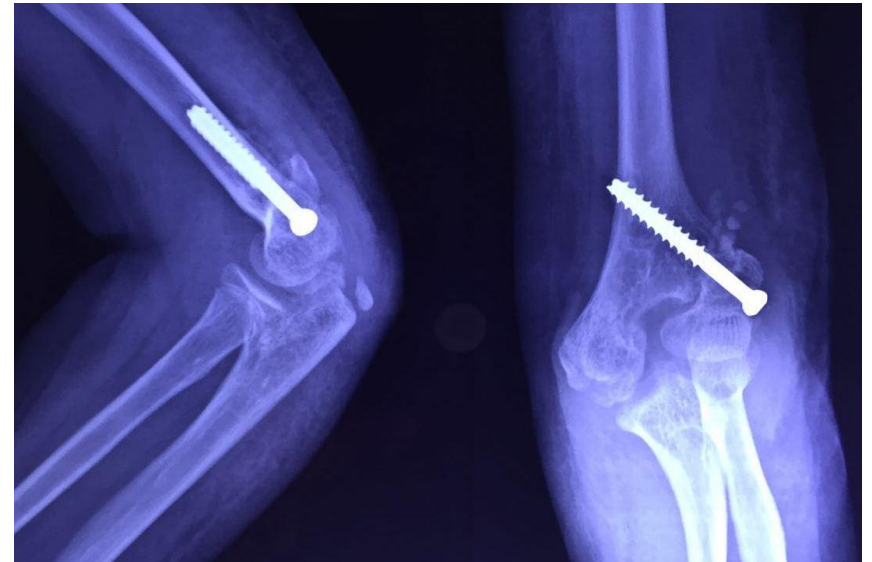
AFTER 7 YEARS





NON-UNION

- Don't open the fracture site
- Anterior dissection
- Don't attempt anatomical reduction
- 'IN SITU' Metaphyseal fixation and Bone grafting





PEARLS AND PITFALLS

- Proper imaging is must to avoid ‘missing’ the fracture.
- Conservative management or closed reduction and K wire only with arthrogram.
- When in doubt, ‘OPEN’
- Don’t hesitate to take down the common extensor origin by few mm to get a better view of reduction.



PEARLS AND PITFALLS

- Divergent K wires as the fragment tends to slip over parallel wires
- Check intraop stability
- Protect till clinico-radiological union.

