Madelung, Multiple Exostosis Proximal Radioulnar synostosis

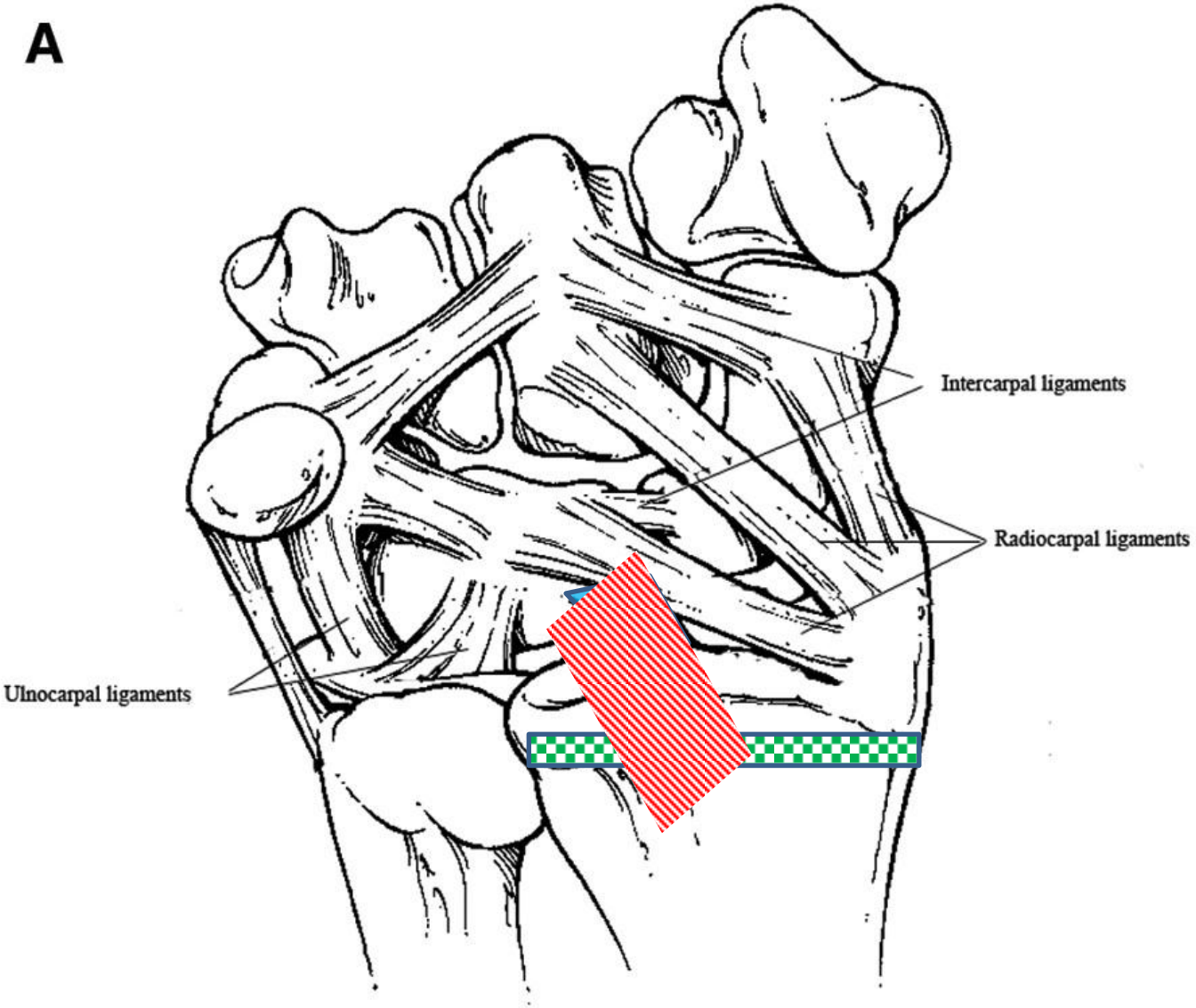
Jeff Auyeung

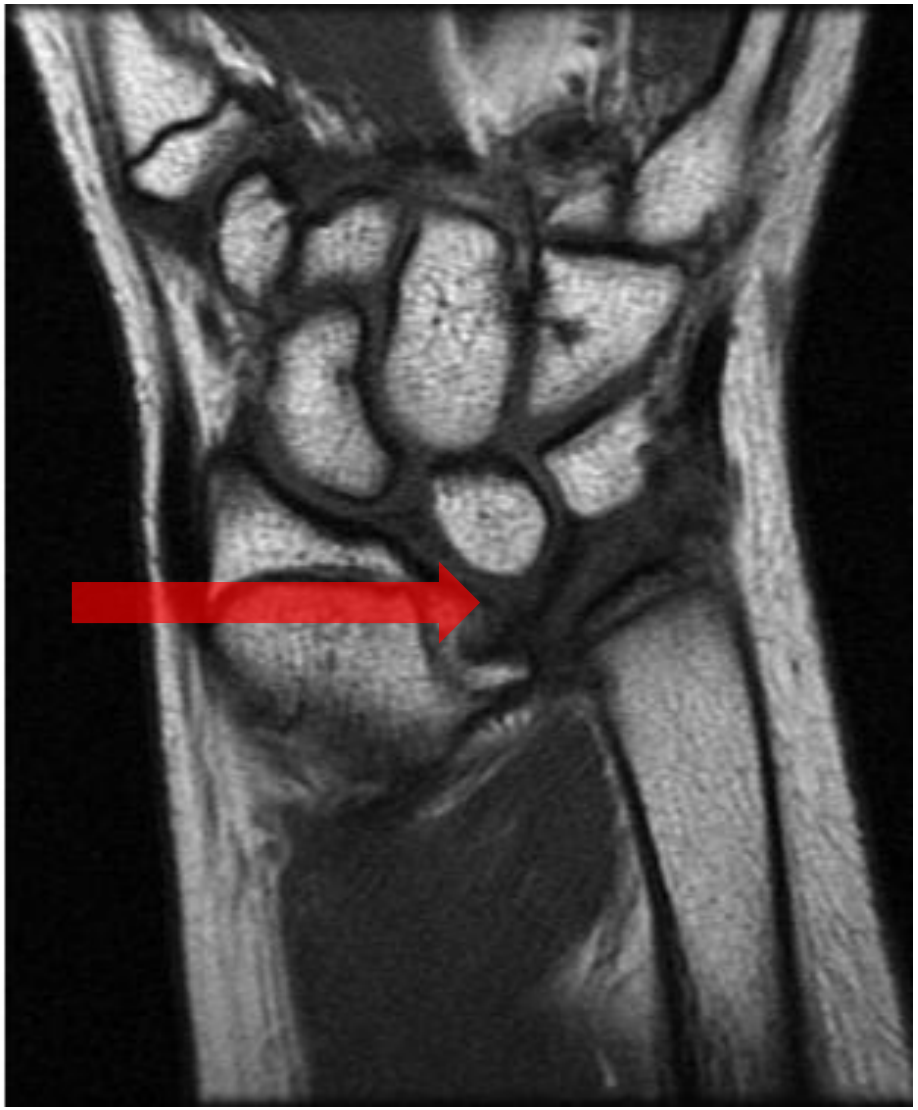
Madelung

- 1878 Otto Madelung described deformity in 8-14 yrs old
- Excess radial inclination and volar angulation
- Female
- Vickers ligament – tether between volar ulnar metaphysis and lunate.

- Other conditions can give Madelung like deformity – no Vickers ligament

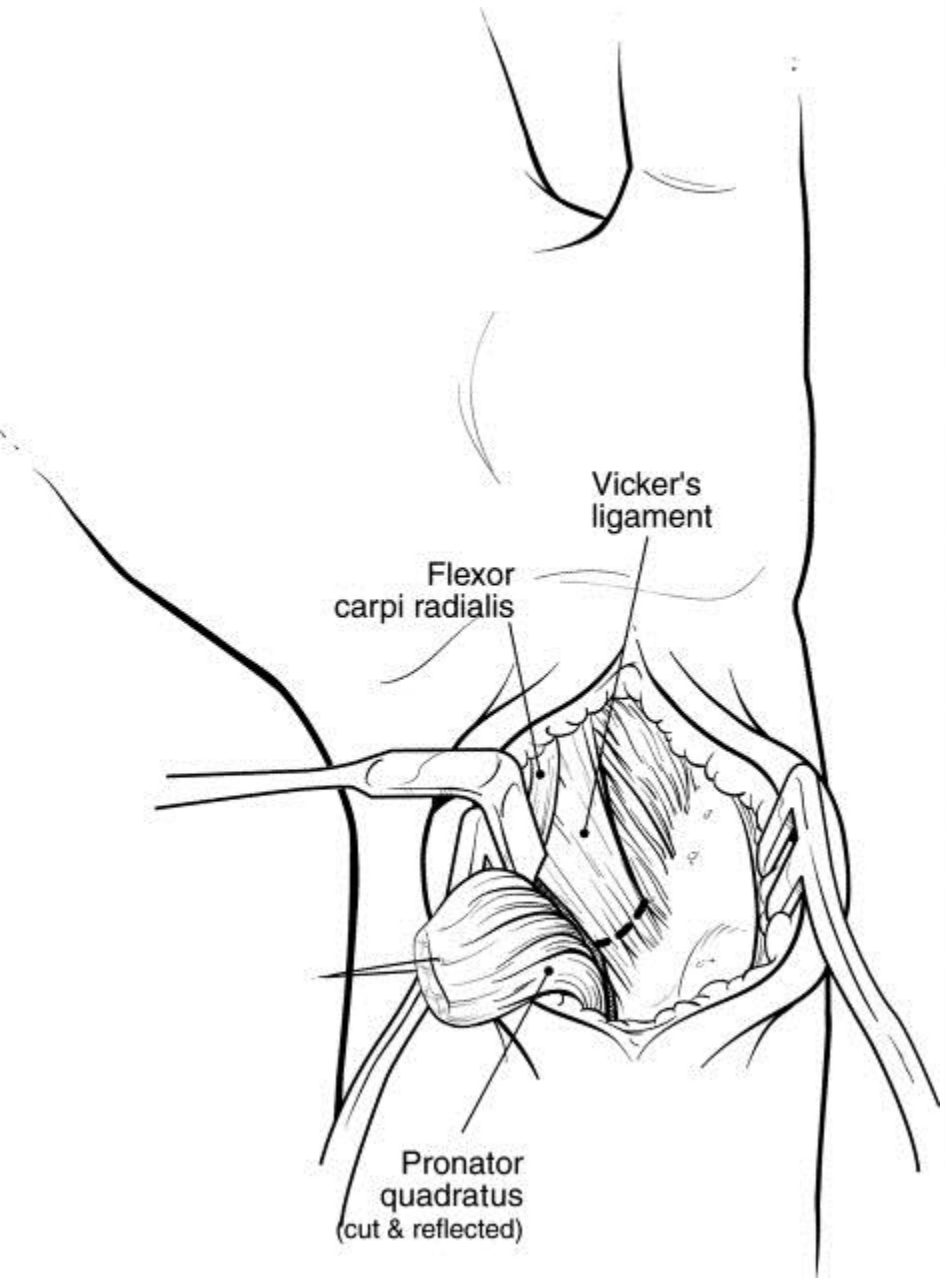
A

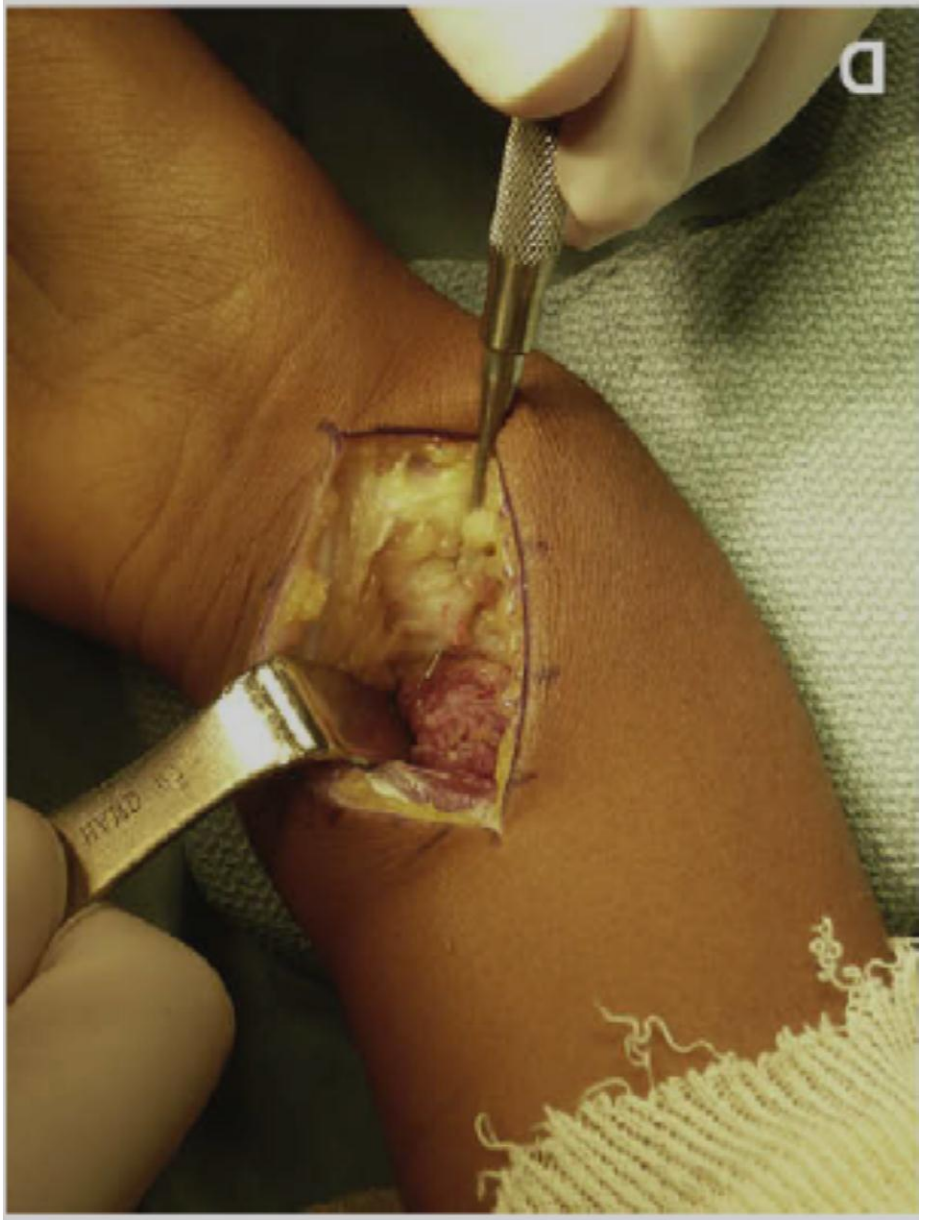

Intercarpal ligaments
Radiocarpal ligaments
Ulnocarpal ligaments

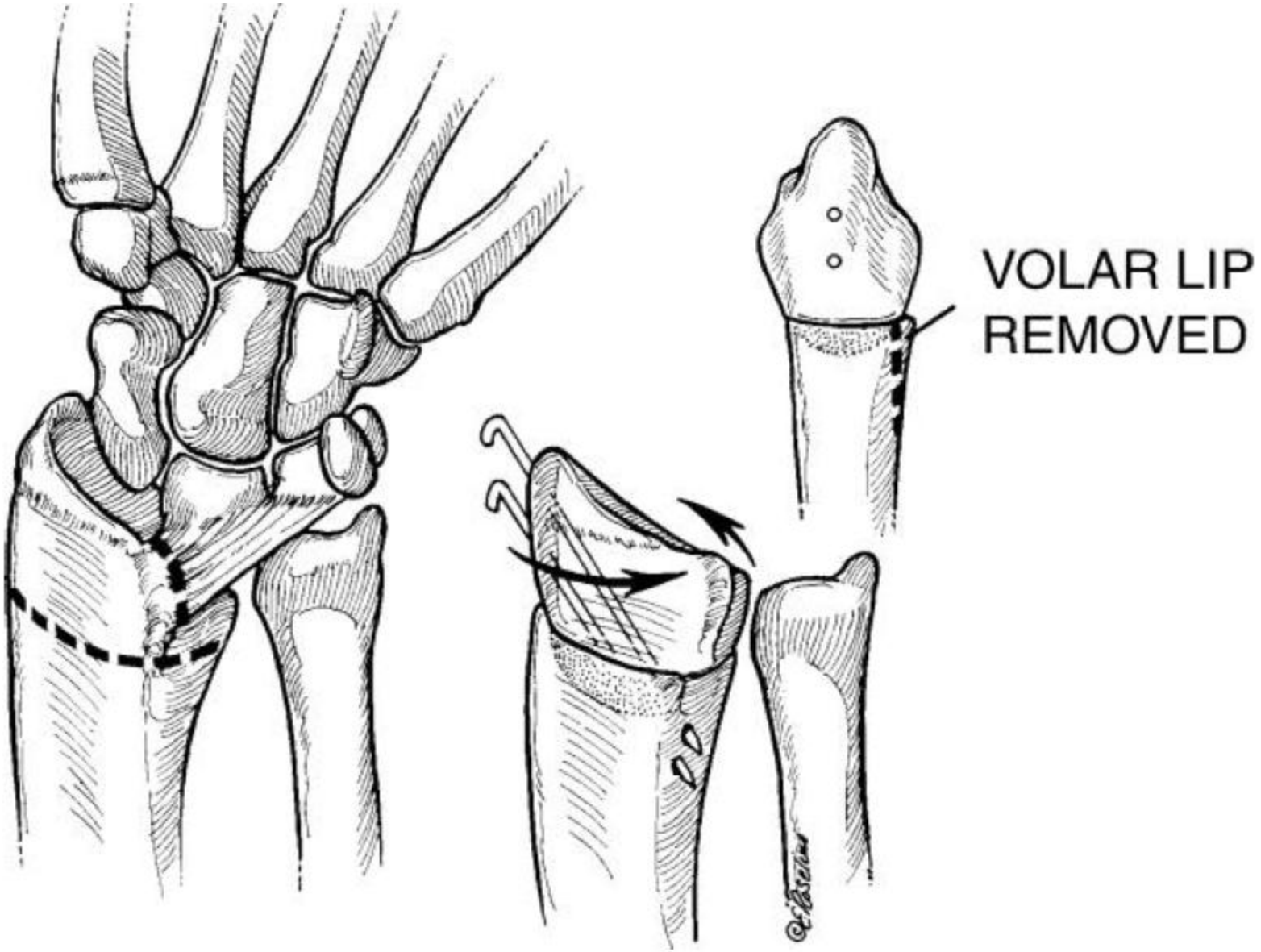


Madelung - Treatment

- None if asymptomatic
- Options:
- Physiolysis +/- release of Vicker's ligament
- Dome osteotomy
- Radial Closing wedge and ulnar shortening
- Radial Osteotomy and distal ulna resection
- Radial Osteotomy and Sauve Kapandji


Vicker's
ligament
Flexor
carpi radialis
Pronator
quadratus
(cut & reflected)




VOLAR LIP
REMOVED

Hereditary Multiple Exostoses

- Also known as Diaphyseal Aclasia
- AD – high but variable penetrance
- Do not confuse with Multiple Enchondroma – Ollier's disease
- EXT gene at fault

- Involves long bones, pelvis, scapula, ribs and vertebrae

Hereditary Multiple Exostoses
Clinical Features

- Bump search
- Note size of lumps
- Check for forearm rotation

- Most lumps asymptomatic
- Some cause local symptoms or deformity

Hereditary Multiple Exostoses Classification – Forearm deformity

- Masada Classification
- Type I – Distal Ulna Exostoses, Radial head in joint
- Type II – Distal Ulna Exostoses, Radial head dislocated
- Type III- Distal Radius Exostoses with short radius


B

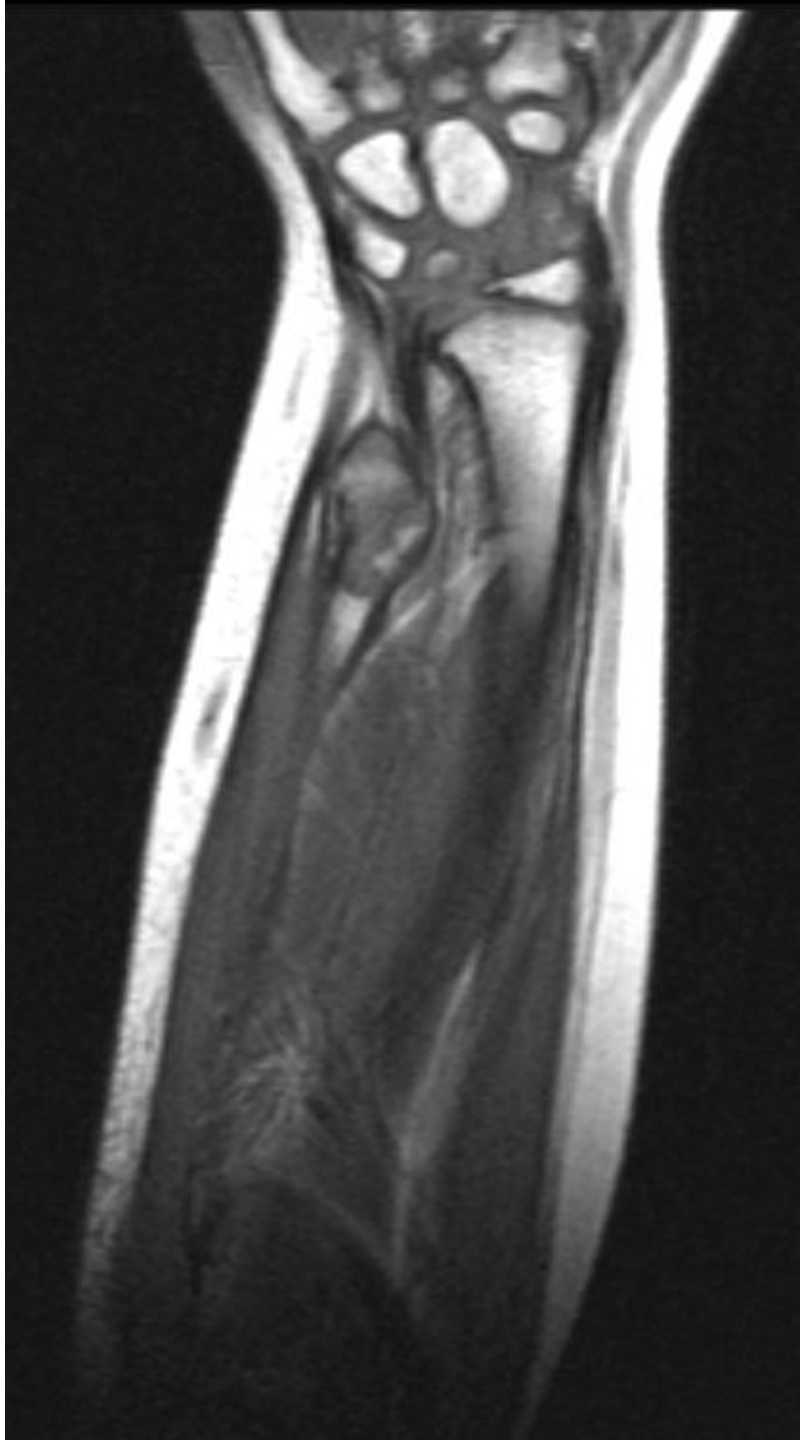

R30

Hereditary Multiple Exostoses Surgery

- Indication – Pain, Nerve compression, decrease ROM, Deformity, Possible Malignant Transformation

- Options:
- Excision – beware may regrow
- Hemiepiphyseodesis with staples
- Lengthening of ulna – acute vs distraction techniques
- One bone forearm if all fails


A
B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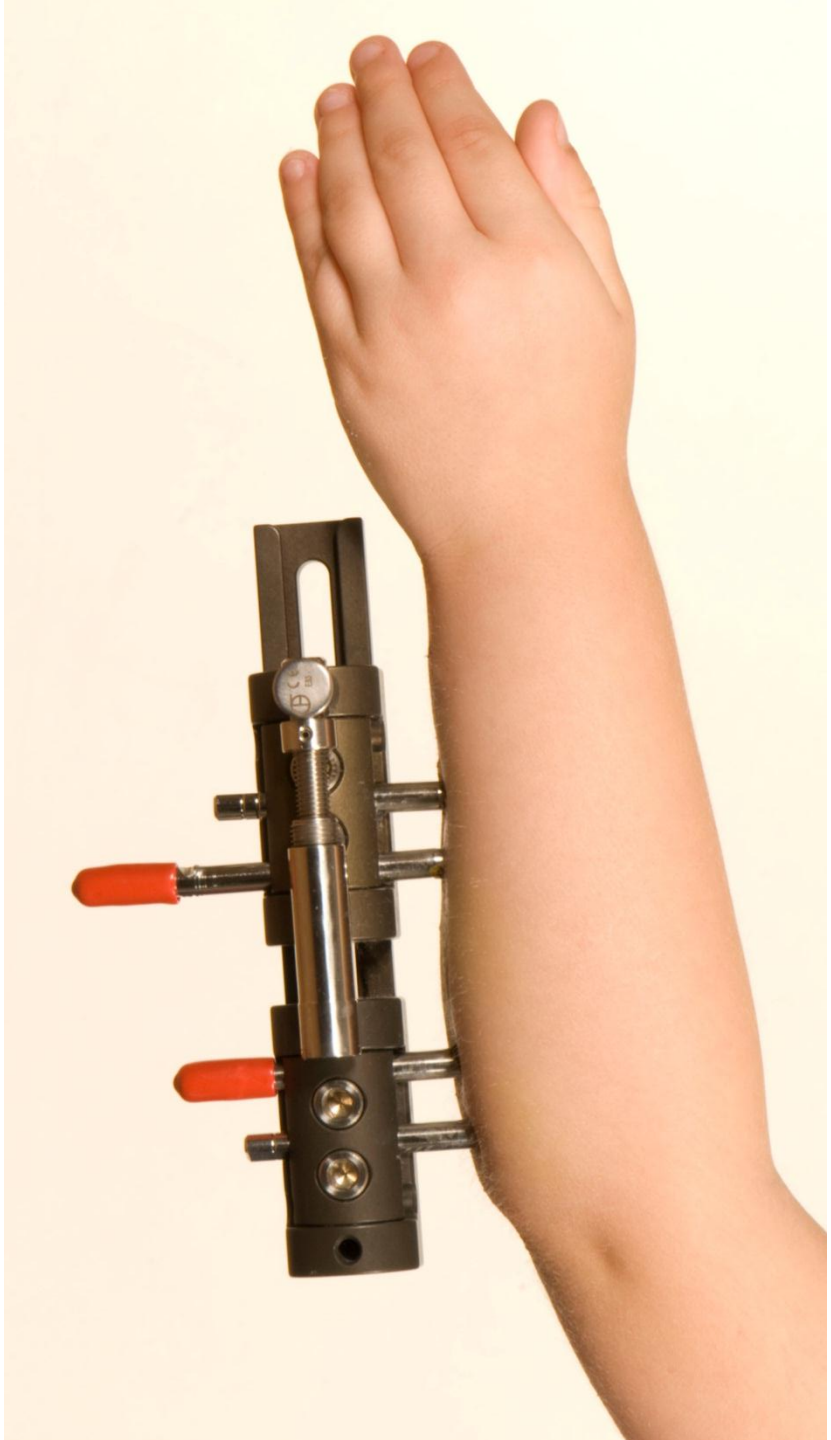

- 3 months post removal of ex fix

- 1 year post removal of Ex fix


OK, WHO FARTED?
DAVIS 4-26

Proximal Radioulnar Synostosis

- Affects area around PRUJ
- No rotation at forearm
- Not noticed until 1 year when children using hand more and found to be unable to rotate forearm

- Often other associated problem with upper limb:
  - Radial head dislocation
  - Short limb
  - Compensatory supination/pronation at radiocarpal joint

- Indication for surgery
  - extremes of supination/pronation
  - Interferes with function or intended occupation

- Surgery
- Restore rotation – interposition fat flaps
- Restore functional position of forearm with rotational osteotomy

- Young children = osteotomy and Steinman pin and POP fixation
- Older children = osteotomy and plate fixation
- Beware excessive forearm rotation can affect PIN function - ? Staged procedures/frame

Modified osteotomy (Kanaya's procedure) for congenital proximal radioulnar synostosis with posterior dislocation of radial head

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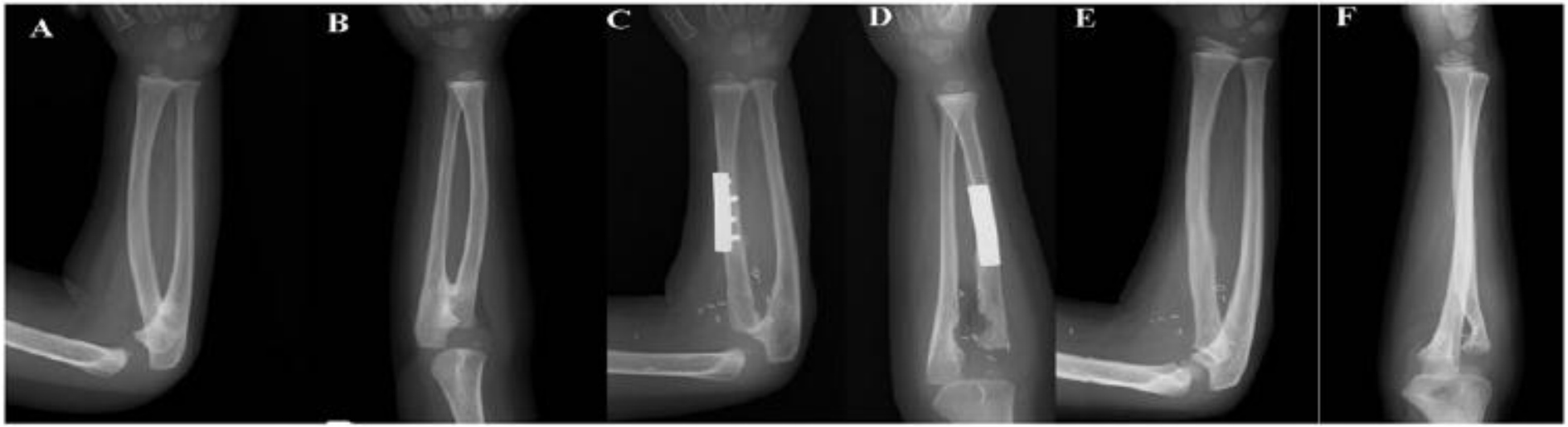
S. Sakamoto, K. Doi, Y. Hattori, C. Dodakundi and T. Montales



- 56 Degree or rotation on average at follow up

Single Osteotomy at the Radial Diaphysis for Congenital Radioulnar Synostosis

Emiko Horii, MD, Shukuki Koh, MD, Tatsuya Hattori, MD, Junko Otsuka, MD

- Osteotomy distal to synostosis
- Periosteum repaired and forearm held in POP

- 35 cases
- Average 6 weeks in POP
- No major complications


[F]


L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