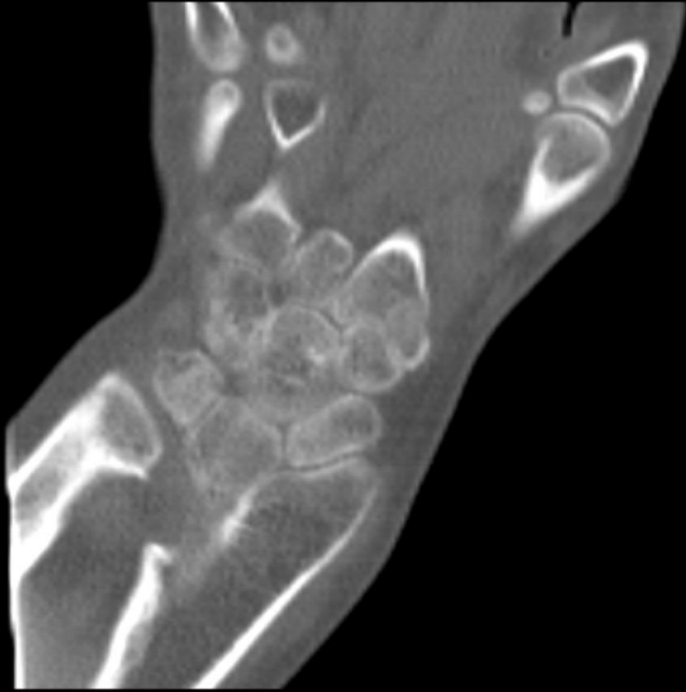




17 F with progressive hand
weakening

















Madelung deformity

Premature growth plate arrest at medial volar aspect of distal radius

Congenital MD can occur as part of Leri-Weill dyschondrosteosis

- Mutation in SHOX gene

Acquired- repetitive axial loading trauma to growth plate

Madelung deformity

More common in females 4:1, 6-13 y/o

P/w impaired grip strength, limited ROM, wrist pain

Wrist deformity from prominence of the relatively long ulna



Ali S, et al. Madelung deformity and Madelung-type deformities: a review of the clinical and radiological characteristics. 2015; 45(12).



Tranmer A, Laub D. Madelung
Deformity. *Eplasty*. 2016; 16:
ic34.



Thresholds

At least 33 deg of ulnar tilt

At least 4 mm of lunate subsidence

Lunate fossa angle of 40 deg or more

20 mm or more of palmar carpal displacement

Vickers ligament

Abnormal volar radiolunate ligament

Tethers medial radial metaphysis and TFC to palmar surface of lunate

Limits growth by compressing epiphyseal growth plate





Ali S, et al. Madelung deformity and Madelung-type deformities: a review of the clinical and radiological characteristics. 2015; 45(12).



Ali S, et al. Madelung deformity and Madelung-type deformities: a review of the clinical and radiological characteristics. 2015; 45(12).

Variant MD: entire radius

Increased radiocapitellar distance

More pronounced radial bowing

Shorter radius and ulna

Loss of elbow extension

More common in LWD and in pts with b/l involvement



Reverse Madelung deformity

Dorsal tilt of distal radius

Dorsal shift of carpus

Volar subluxation of ulna



Ali S, et al. Madelung deformity and Madelung-type deformities: a review of the clinical and radiological characteristics. 2015; 45(12).

Madelung-type deformity

Osseous dysplasias

- Ollier disease, multiple epiphyseal dysplasia, and multiple hereditary exostoses

Turner syndrome



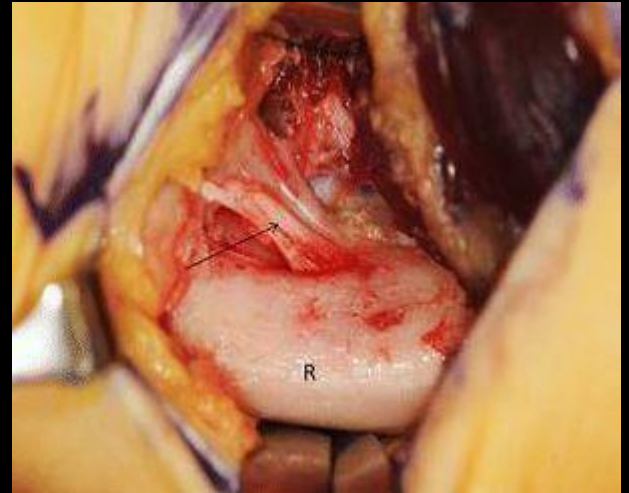
Ali S, et al. Madelung deformity and Madelung-type deformities: a review of the clinical and radiological characteristics. 2015; 45(12).

Surgical intervention

Can target radius deformity, ulnar protuberance, abnormal Vickers ligament

Radial dome osteotomy with Vickers ligament physiolyis/release

- Decrease pain, improve cosmetic appearance, increase ROM while preserving DRUJ



References

Tranmer A, Laub D. Madelung Deformity. *Eplasty*. 2016; 16: ic34.

Ali S, Kaplan S, Kaufman T, Fenerty S, Kozin S, Zlotolow DA. Madelung deformity and Madelung-type deformities: a review of the clinical and radiological characteristics. 2015; 45(12): 1856-1863.

Kim HK. Madelung deformity with Vickers ligament. *Pediatr Radiol*. 2009; 39: 1251.