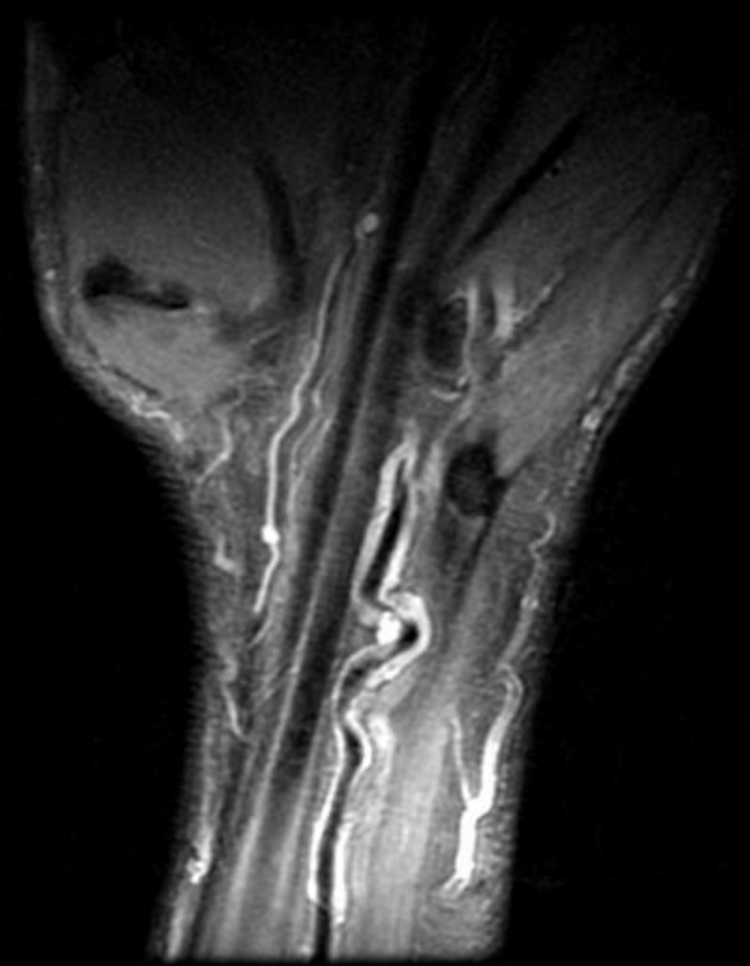
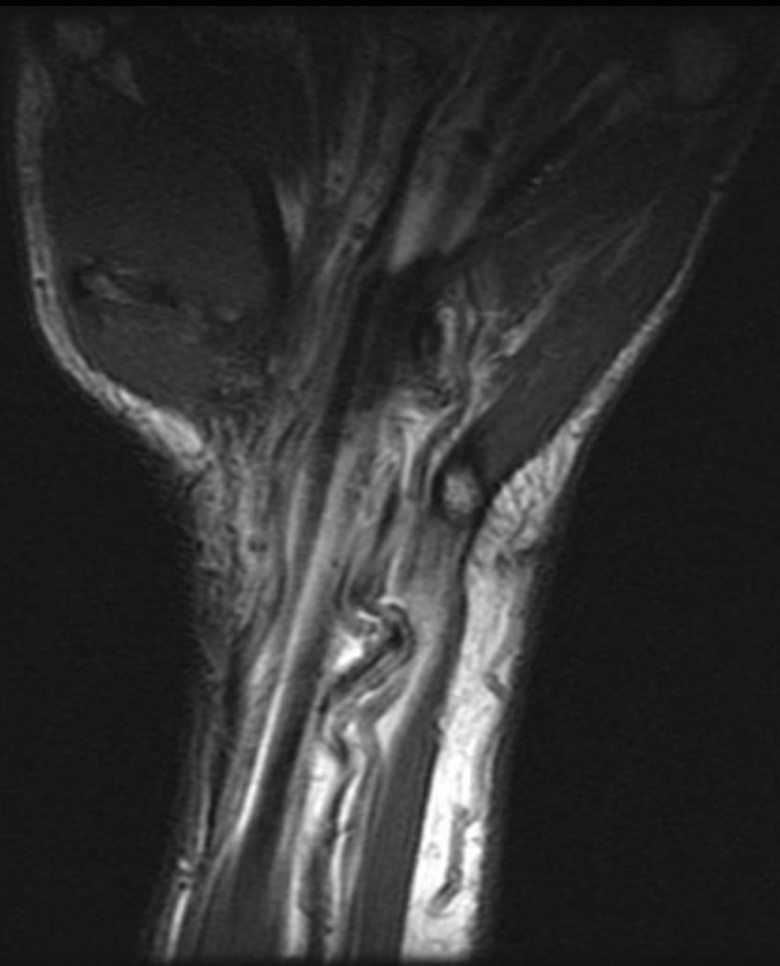
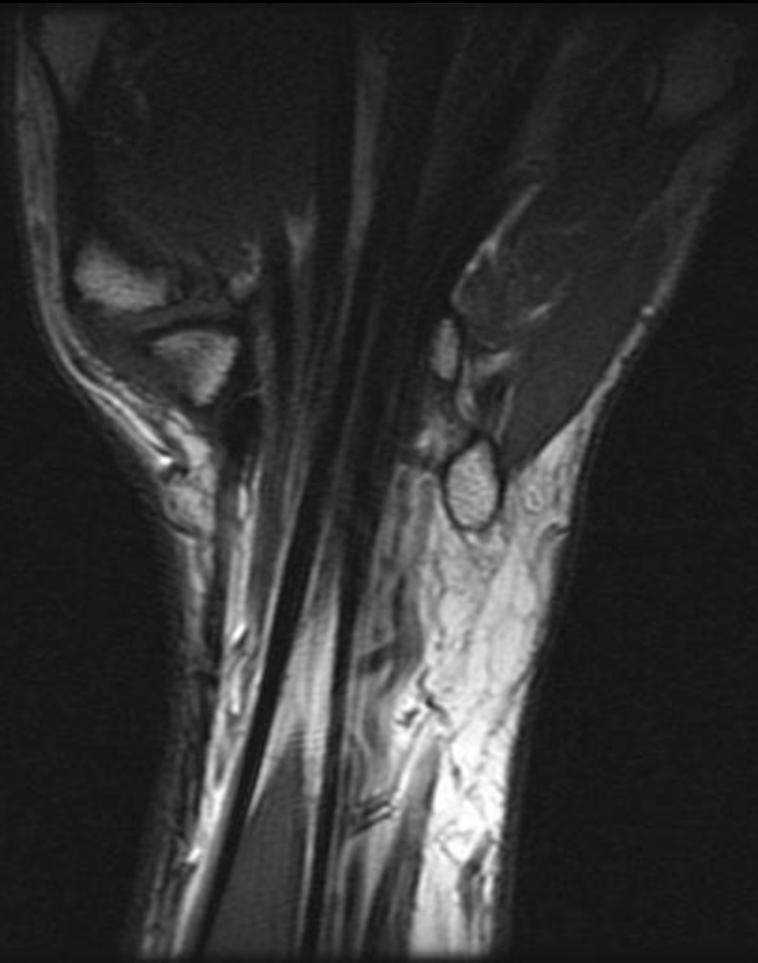
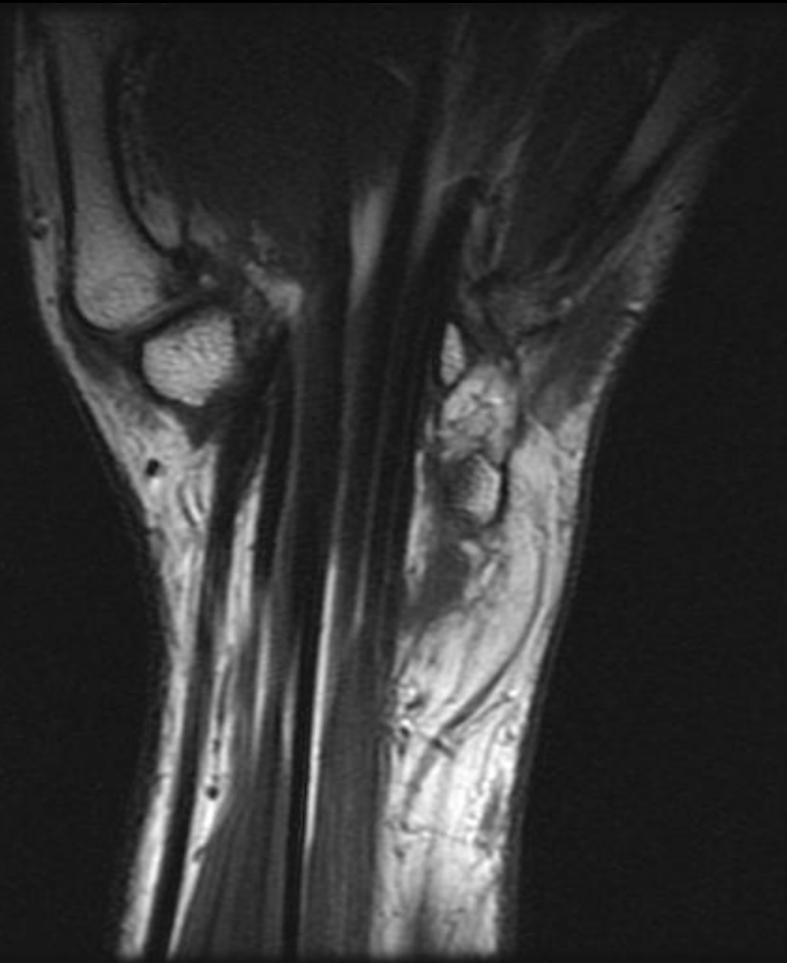


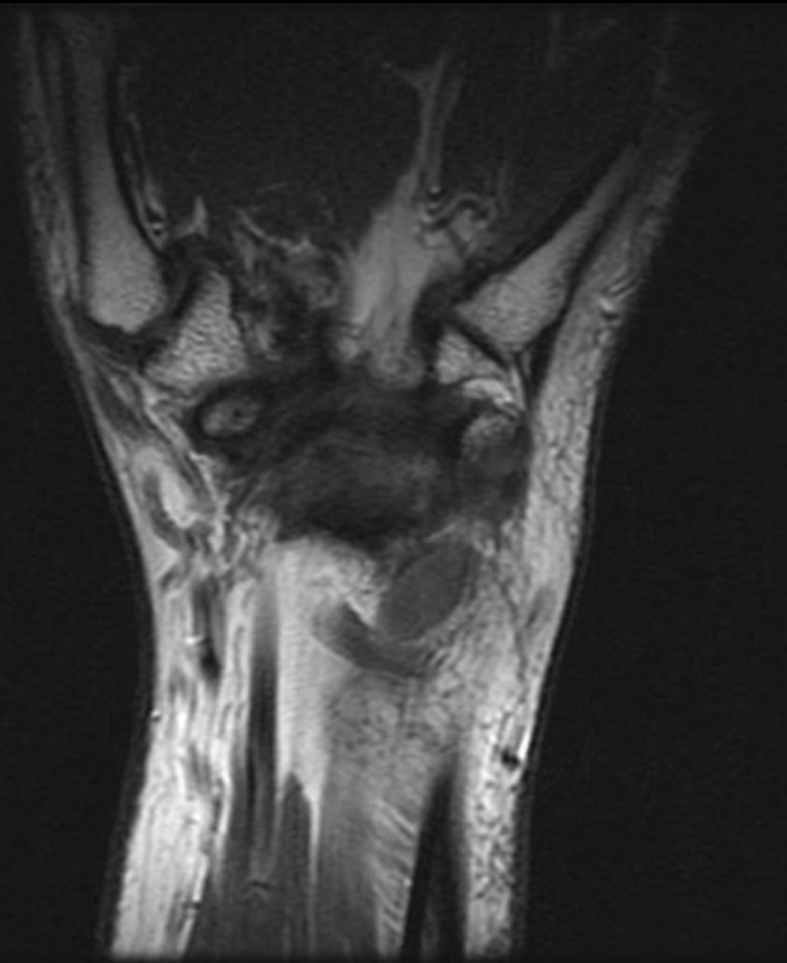


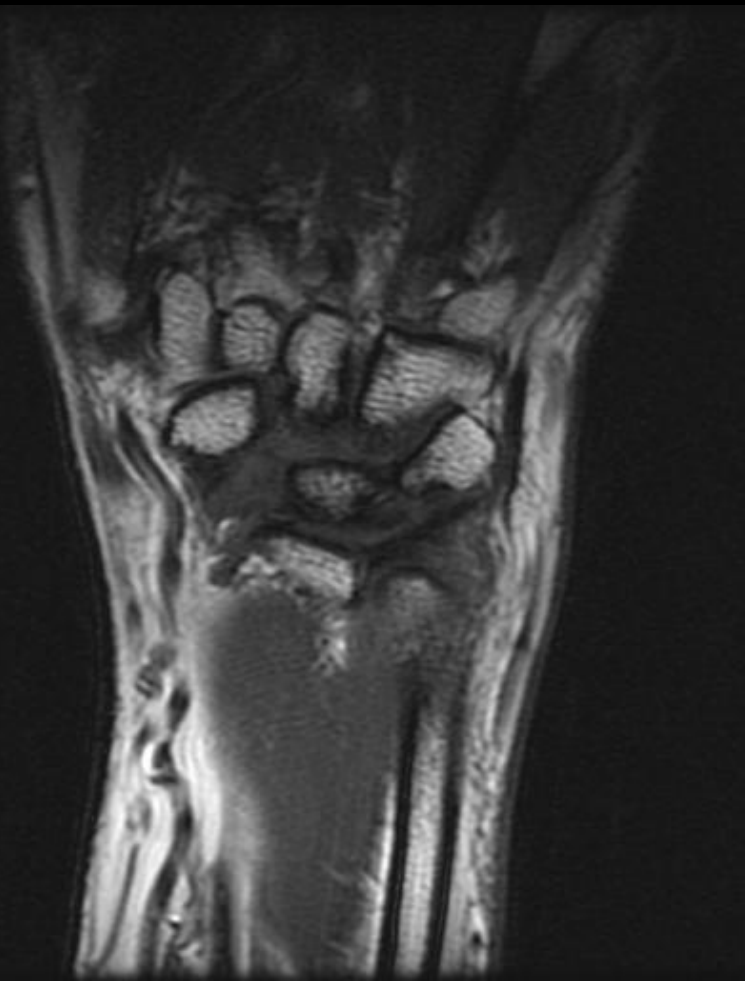
54 year old with wrist pain.











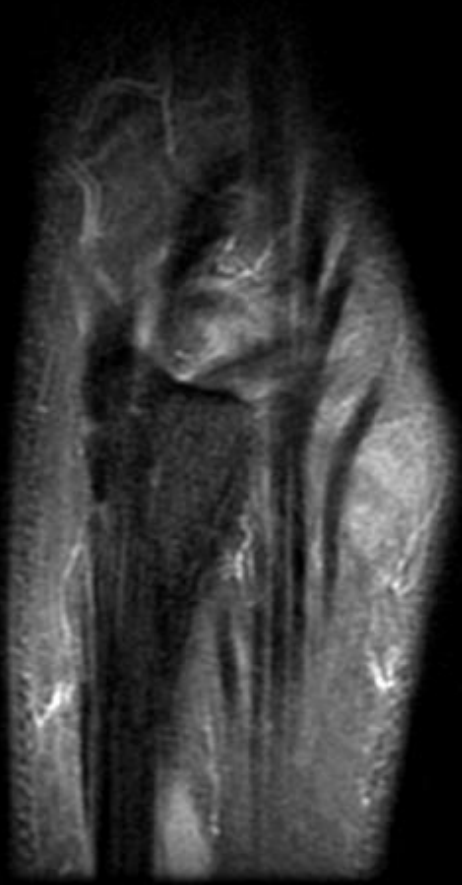
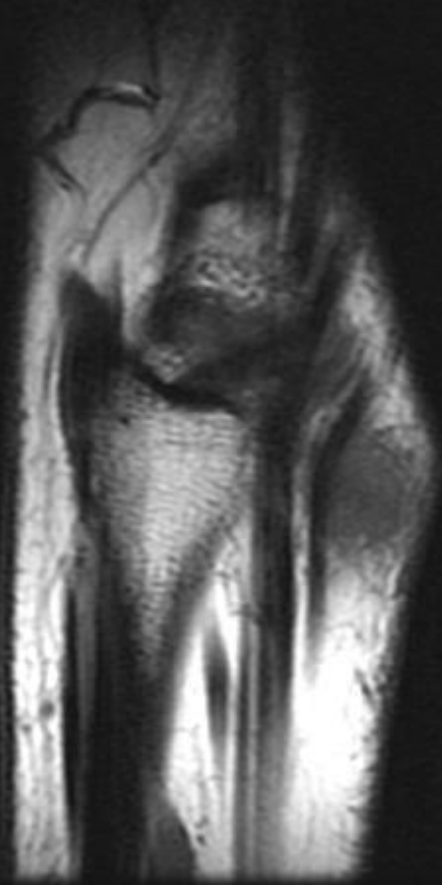














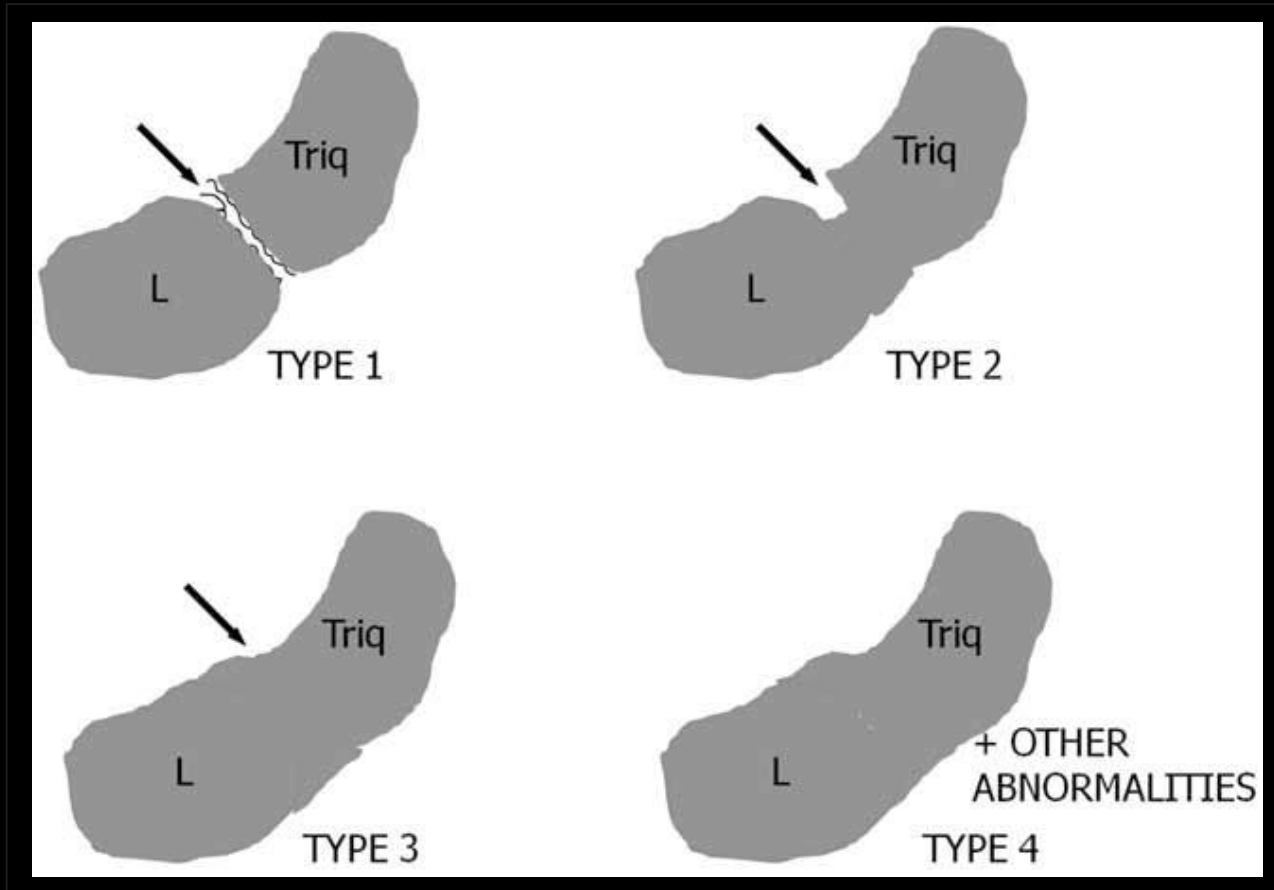
# COMPANION CASE



# CONGENITAL CARPAL COALITION

- Malsegmentation between two or more normally distinct carpals resulting in coalition
  - Failure of cavitation of the cartilaginous hand bud precursor during 4<sup>th</sup>-8<sup>th</sup> week of gestation
- Primary forms: osseous vs non-osseous (fibrous/cartilaginous)
- 0.1% estimated incidence
- Most commonly involves lunate and triquetrum
  - F:M = 2:1; African Americans
  - Commonly bilateral- 60%
- 2<sup>nd</sup> most common- capitolunate coalition
- Dominant non-sex linked trait

# de Villiers Minaar Classification





# Clinical Presentation

- Asymptomatic osseous coalitions
  - Predispose to fractures due to altered mechanics
- Type 1- uncommonly symptomatic
  - Pseudoarticulation in cases of fractures as weaker fibrocartilaginous coalition more susceptible to stress or trauma
  - Degenerative OA due to altered biomechanics and thinned cartilage
  - Disturbed motion of carpus may lead to cartilage damage of surrounding joints

# PITFALL

- Scapholunate interosseous space widening has been associated with LTC due to compensatory thickening of the cartilage between the scaphoid and lunate.
- Important differential consideration in post-traumatic setting.
- Examination of contralateral wrist may be useful.

**Table 4** Carpal coalitions in congenital malformation syndromes

Condition	Reported coalition deformities
Ellis van Creveld	Capitate–hamate (most common); massive fusions involving multiple carpals [9]
Osteochondritis dissecans	Capitate–trapezium [15]
Holt Oram syndrome	Abnormally shaped scaphoid fused to other carpals; narrowing of joint space between scaphoid and trapezium; presence of accessory carpal bones noted [27]
Oto palatal digital syndrome	Fusion of scaphoid with other carpal bones; various forms of intercarpal union; comma shaped trapezoid and transverse position of capitate [27]
Fetal alcohol syndrome	Capitate–hamate [18]
Brachydactyly	Capitate–hamate; unspecified or miscellaneous coalitions [2]
Turner’s syndrome	Lunate–triquetrum; abnormal shaped proximal row carpals [10]
Liebenberg syndrome	Triquetrum–pisiform; abnormal shape and size of various carpals [21]
Banki syndrome	Lunate–triquetrum [2]
Ulnar and Fibular Dimelia	Capitate–hamate [31]
Diastrophic dwarfism	Deformed carpal bones; narrowing of joint space with unspecified carpal coalition is common [27]
Dyschondrosteosis	Lunate–triquetrum (described in Madelung’s deformity) [27]
Arthrogryposis multiplex congenita	Variable carpal and tarsal coalition deformities; more often acquired evidenced by presence of remnant joint space in dissected specimens [25]
Symphalangism	Triquetrum–hamate (most common); diverse patterns of carpal and tarsal coalitions have been reported [16]
Hand–foot–uterus syndrome	Scaphoid–trapezium; deformity of the scaphoid is often evident [27]
Nievergelt’s syndrome	Massive bilateral carpal and tarsal coalition [25]
Mitral insufficiency, conductive deafness, fusion of cervical vertebra	Capitate–hamate, Lunate–Triquetrum, Scaphoid–Trapezium; tarsal fusions also noted [11]

# DDX

Important to exclude acquired fusions such as those secondary to arthritis, trauma, surgery or metaplastic conversion of mesodermal derivatives such as fibrous, cartilaginous, or ligamentous tissue to bone.

# TREATMENT

- Conservative
- Symptomatic Type 1- Resection of pseudoarthrosis + fusion

# References

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