



MADDELUNG AND MULTIPLE EXOSTOSES

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CONTENT

- Madelung
- Forearm/wrist deformity due to Multiple Hereditary Exostoses



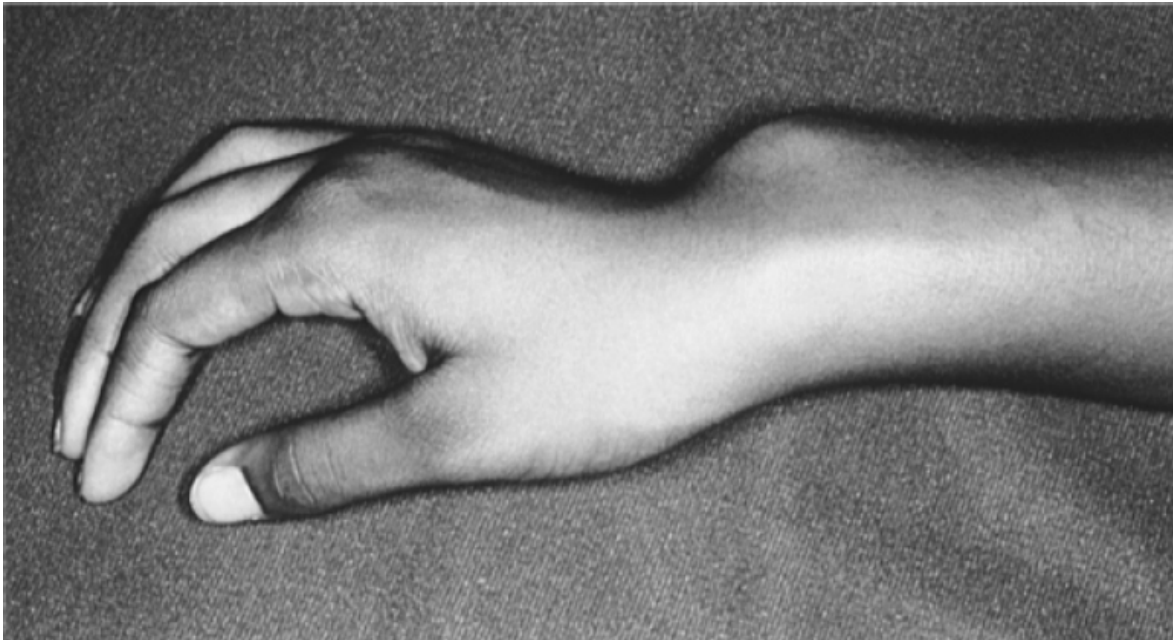
MADELUNG

- This is excessive radial and palmar angulation of the distal radius
- Caused by growth disturbance of palmar and ulnar part of distal radius physis
- Often a bony lesion in palmar and ulnar part of physis or abnormal ligament connecting distal radius to lunate (Vicker's Ligament)
- Girls>Boys
- Present 6 -13 years of age



MADELUNG – CLINICAL FINDINGS

- Prominent distal ulna
- Shorter forearm than normal
- Often little functional problem



MADELUNG – X RAYS

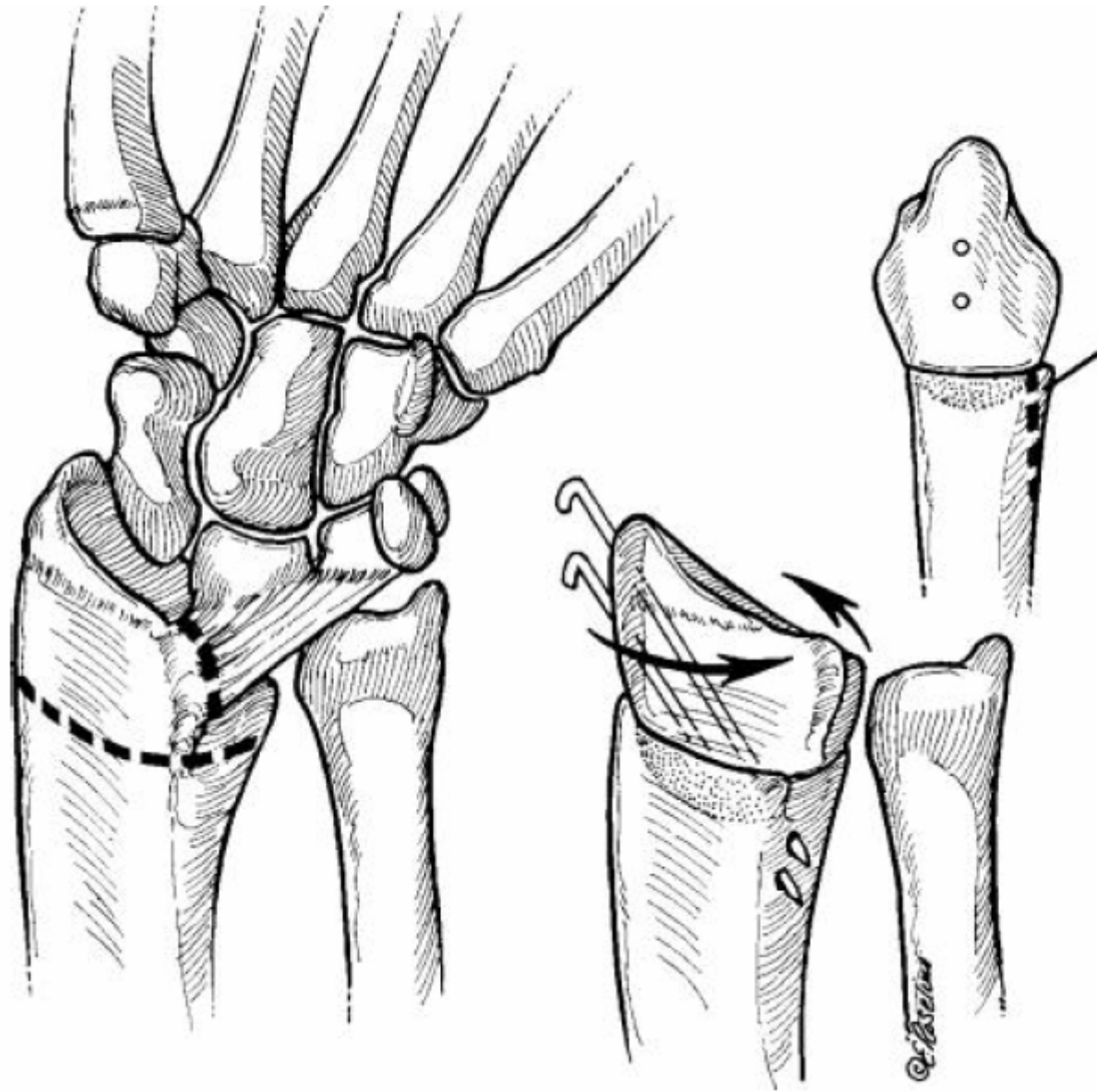
- Excess palmar and radial angulation
- Ulna Plus



MADELUNG - TREATMENT

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





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



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





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





QUESTIONS?

?



MCQ

1 The most common type of Thumb duplication according to the Wassell Classification is

- A Type I
- B Type II
- C Type III
- D Type IV
- E Type V



MCQ - Answers

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- **D Type IV**
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2 A Child presents to you with syndactyly of the left Middle and Ring finger. According to Swanson's classification is this

- A Failure of formation
- B Duplication
- C Undergrowth
- D Overgrowth
- E Failure of differentiation



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- A HOX genes
- B ZPA
- C Wnt pathway
- D LMX genes
- E Shh genes



MCQ - Answers

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4 You are called to the labour ward to review a child with congenital hand deformity. You are told that the parents are of African descent. The most likely abnormality you expect to see is

- A Thumb duplication
- B Radial Club hand
- C Post-axial duplication
- D Ulnar Club Hand
- E Hypoplastic Thumb



MCQ - Answers


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5 You are planning to release multiple syndactyly in a child. The 2nd, 3rd and 4th webspaces are syndactylised. The most appropriate surgery is:

- A Release of all syndactyly in one sitting
 - B Release of 2nd and 3rd in one sitting and 4th at a later date
 - C Release of 2nd & 4th in one sitting and 3rd at a later date
 - D Release of 3rd & 4th in one sitting and 2nd at a later date
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- A Volar skin deficiency.
- B Volar plate contractures.
- C Abnormalities of the palmar fascia and Landsmeer ligament.
- D Articular deformity of the proximal interphalangeal joint.
- E Anomalous lumbrical and superficialis insertions.



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- A Excessive radial and dorsal angulation of distal radius
- B Excessive length of ulnar
- C Excessive length of radius
- D Excessive radial and palmar angulation of distal radius
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MCQ – Answers

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- A Apical Ectodermal Ridge
- B Zone of Polarising Activity
- C Wingless type signalling centre
- D Fibroblast Growth Factor
- E BMP 2



MCQ – Answer

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- A Transfer of EIP to restore opposition
- B Transfer of FDS Ring to restore Thumb Adduction
- C Transfer of EIP to restore Thumb Adduction
- D Transfer of ADM to restore Opposition
- E Transfer of ADM to Thumb Flexion



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MCQ

10 The most common congenital hand anomaly is

A Symbrachydactyly

B Camptodactyly

C Syndactyly

D Polydactyly

E Constriction Ring Syndrome



MCQ – ANSWERS

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