MADELUNG 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:
  - 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
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
  - Hemiepiphysseodesis with staples
  - Lengthening of ulna – acute vs distraction techniques
  - One bone forearm if all fails
QUESTIONS?
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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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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- B  ZPA
- C  Wnt pathway
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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
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- A Release of all syndactyly in one sitting
- B Release of 2\textsuperscript{nd} and 3\textsuperscript{rd} in one sitting and 4\textsuperscript{th} at a later date
- C Release of 2\textsuperscript{nd} & 4\textsuperscript{th} in one sitting ad 3\textsuperscript{rd} at a later date
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- B Volar plate contractures.
- C Abnormalities of the palmar fascia and Landsmeer ligament.
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- B Excessive length of ulnar
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- A Apical Ectodermal Ridge
- B Zone of Polarising Activity
- C Wingless type signalling centre
- D Fibroblast Growth Factor
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- B Transfer of FDS Ring to restore Thumb Adduction
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- D Transfer of ADM to restore Opposition
- E Transfer of ADM to Thumb Flexion
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C Syndactyly
D Polydactyly
E Constriction Ring Syndrome
MCQ – ANSWERS

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