

Plan for this afternoon



- 14:00 Introduction – me
- 14:30 Development of the upper limb – Mark Chong
- 14:50 Madelung and Multiple Exostoses – me
- 15:20 Coffee!
- 15:45 Congenital Hands – Mr Stewart Watson

Congenital/Paediatric Hands



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Surprise! MCQs – Prize for best mark!



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



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

MCQ



3 In the formation of the upper limb, differentiation of the limb bud into arm, forearm and hand is under control of

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

MCQ



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



5 You are planning to release multiple syndactyly in a child. The 2nd, 3rd and 4th webspaces are syndactylysed. 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
- E Release of one syndactyly at a time

MCQ



6 Camptodactyly is most commonly caused by

- 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.

MCQ



7 Madelung deformity is

- 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
- E Excessive length of distal radius

MCQ



8 Differentiation of the limb bud into ulnar and radial side is controlled by

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

MCQ



9 You have a child with a mild hypoplastic thumb. You are planning to perform a Huber transfer. This involves

- 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

MCQ



10 The most common congenital hand anomaly is

- A Symbrachydactyly
- B Camptodactyly
- C Syndactyly
- D Polydactyly
- E Constriction Ring Syndrome

Terminology/Nomenclature



- Very Confusing at times!
- Classifications not always useful – research tool
- Best to describe what you see.
- Often disparity between clinical findings and X Ray appearance!

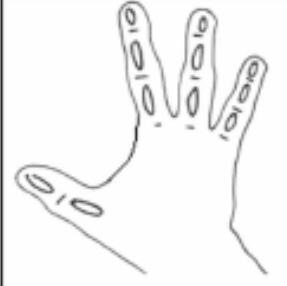
Picture guide!



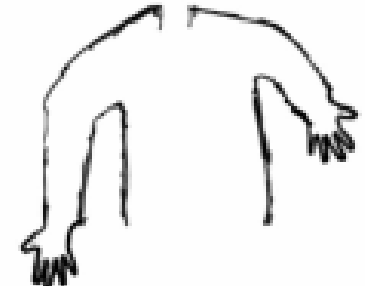
Brachy
short



Oligo
few



Phoco
sealed



Campto
flexed



Climo
bent (radial or ulnar)



Syn
fused side to side



Sym
fused longitudinally



Assessing the Child with a congenital hand problem



- History – Pay attention to
 - Family history
 - Gestation
 - Delivery – premature?, any difficulty?
 - Comorbidity – Syndromes?, GA fitness
 - Parental concern
 - Is child using hand?

Assessing the Child with a congenital hand problem



- Examination
- Number of digits
- All four limbs – not just hands and feet, look at the entire limb
- Facies - ? Syndromes

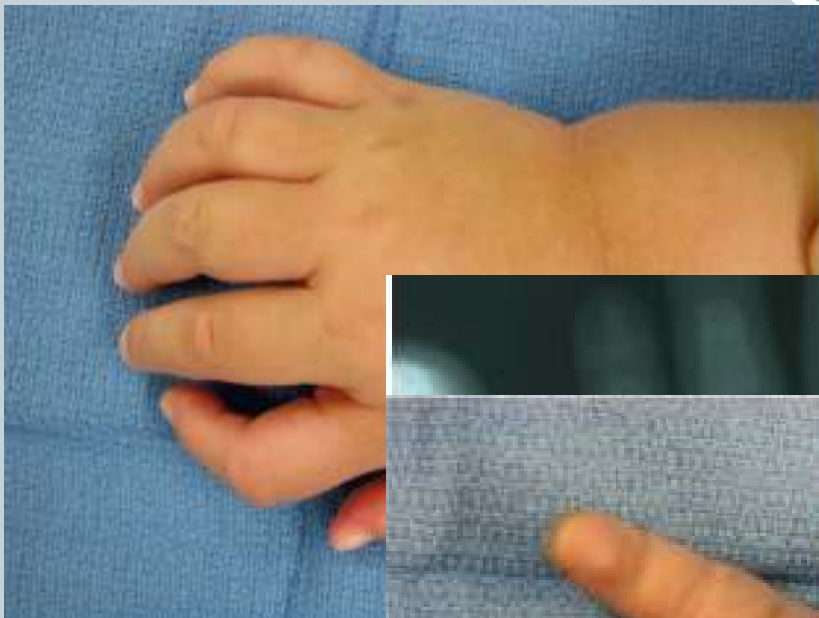
- Xrays – Often not valuable until child is 6 to 12 months
- Photographs











Assessing the Child with a congenital hand problem



- Remember that the parents are also your patients not just the child
- Find out what they have been told so far!
- Parents often go through some sort of grieving process in major deformity
- They will want to know about possible disability
- They are concerned that they might make the wrong decision for the child

- Offer access to Geneticist
- Refer to support groups and websites!

Assessing the Child with a congenital hand problem



- Do not underestimate the value of
- Nonoperative treatment – physio, splints
- Play assessment
- Your feet!

Assessing the Child with a congenital hand problem



- Indication for surgery
- Often a multidisciplinary decision between surgeon, parents, child, therapist
- Function vs cosmesis
- Often need multiple visits to decide on surgery
- Be realistic with parents about outcome



Assessing the Child with a congenital hand problem



- General plan for surgery
- Reduce tissue – Macroductyly
- Add Tissue – Syndactyly/Absence
- Correct Deformity – Clino/Camptodactyly
- Stabilise – Club Hands
- Create motion - Symphalangism

Assessing the Child with a congenital hand problem



- Timing
- Arguments about before vs. After normal development of hand function (brain plasticity)
- Other co-morbidity
- Anaesthetic support

Any Questions?

