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 Congential Hands – Mr Stewart Watson
Congenital/Paediatric Hands

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

- 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
- D Release of 3\textsuperscript{rd} & 4\textsuperscript{th} in one sitting and 2\textsuperscript{nd} 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.
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
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
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
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

- *Clino*
  - 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 – Macrodactyly
- 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?