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Medi Quest BRS Hospital

A monthly News letter from BRS Hospital

Congenital Anomalies of Hand

Part II

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CLASSIFICATION

IFSSH Modification of Swansons

I. Failure of formation of parts
II. Failure of differentiation of parts
III. Duplication of parts
IV. Overgrowth
V. Undergrowth
VI.Congenital constriction band
syndrome
VII. Generalized skeletal
abnormalities

INCIDENCE of CONGENITAL ANOMALIES OF THE HAND

| Syndactyly | 35% |
|-------------------|-------|
| Polydactyly | 14.3% |
| Camptodactyly | 13.6% |
| Transverse arrest | 11.4% |

| Radial club hand | 10% |
|------------------|------|
| Clefthand | 8.6% |
| Clasped thumb | 1.4% |
| Others | 5.7% |

1. FAILURE OF FORMATION OF PARTS

The upper limb fails to develop, distal to area of transverse arrest and in the radial, ulnar or central aspect with respect to longitudinal arrest, leading to the deformities, such as radial club hand, ulnar club hand, cleft hand complex & phocomelia. (non development of a segment of upper limb.)

Transverse arrest

- Shoulder
- Arm
- Elbow
- Forearm
- Wrist
- Carpal
- Metacarpal
- Phalanx



GENERAL MEDICINE, GENERAL SURGERY, PEDIATRICS AND NEONATOLOGY PLASTIC AND COSMETIC SURGERY, ENT SURGERY, OB AND GYN UROLOGY, NEPHROLOGY, DIALYSIS, VASCULAR AN<u>D NEUROLOGY.</u>



Longitudinal arrest

- Radial ray deficiency
- Ulnar ray deficiency
- Central ray deficiency
- Inter-segmental deficiency (Phocomelia)



Fig.1: TRANSERVERSE ARREST - Finger Level



Fig.2: TRANSERVERSE ARREST - Forearm Level

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Fig.3: RADIAL CLUB HAND



Fig.4: ULNAR CLUB HAND



Fig.5: CENTRAL RAY DEFFICIENCY - Cleft Hand

2. FAILURE OF DIFFERENTIATION OF PARTS

Soft-tissue involvement

Cutaneous syndactyly - Fused Fingers Camptodactyly - Bent Finger Thumb in palm deformity -Bent Thumb Chinodactyly - deviated finger

Skeletal involvement

Shoulder Elbow-synostosis Radio-ulnar synostosis Osseous syndactyly Synostosis of carpal bones Arthrogrypois

Congenital tumorous conditions Hemangiotic Lymphatic Neurogenic Connective tissue Skeletal

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Fig.6: Syndactyly



Fig.7: Camptodactyly



Fig.8: Clinodactyly



Fig.9: Arthrogrypois

3. DUPLICATION OF PARTS

- 1. Whole limb
- 2. Humeral segment
- 3. Radial segment

4. Ulnar segment (Mirror hand) - 10 or more fingers mirror image. No opposing thumb or thumb web.
5. Digital polydactyly – Too many Fingers

- Radial (preaxial) Thumb side.
- Central–Central portions of Hand.
- Ulnar (postaxial) Little Finger.



Fig.10: Polydactyly (Familial)

4. HYPERPLASIA (Over Growth)

Macrodactyly is the overgrowth of the epiphyseal centres due to increase in blood supply. Common causes are Neurofibrolipoma, haemangioma, lymphangioma and tumorous conditions



Fig.11: Hyperplasia



Fig.12: Macrodactyly



Fig.13: Macrodactyly

5. HYPOPLASIA (Under Growth)



6. CONGENITAL CONSTRICTION BAND SYNDROME

These are mostly amniotic bands and cause autoamputation, Ring like banding and distal lymphoedema is seen.





Management of Common Anomalies of Hand seen in clinical Practice such as Syndactyly, Polydactyly, Cleinodactyly, Trigger Thumb and Constriction Band Syndrome.

Congenital Anomalies of Hand – PART III Contd. In next issue of MEDIQUEST

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