MUSCULOSKELETAL SYSTEM



POLYDACTYL:

- Definition:Polydactyly is a deformity in which the hand has one or more extra fingers in any of three places of the hand:
- on the small finger side—most common (ulnar)
- on the thumb side, also called **thumb duplication**—less common (radial)
- in the middle of the hand—least common (central)

POLYDACTYLY



- **ETIOLOGY:**
- During normal embryonic development (while the baby is still in the womb), the hand initially forms in the shape of a paddle, and then—at about the sixth or seventh week of gestation—splits into separate fingers. Polydactyl results if there’s an irregularity in this process: An extra finger forms when a single finger splits in two.

- **INVESTIGATION:**
- Polydactyly can be seen by ultrasound prenatally, and by eye at birth. Your doctor will use x-rays to assess the underlying structure of your baby’s finger and determine a course of treatment.

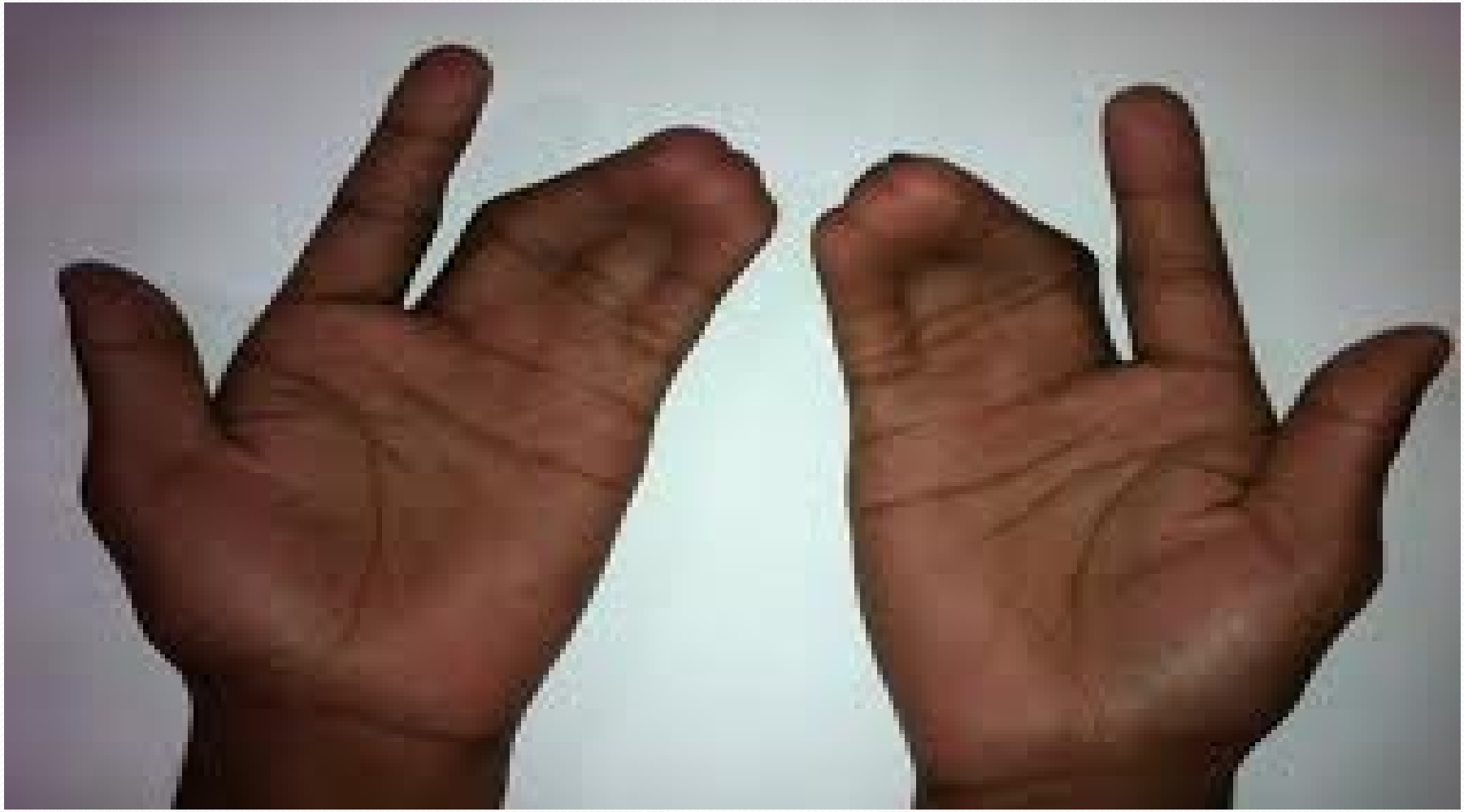
TREATMENT

- Children’s orthopedic surgeons and plastic surgeons usually treat polydactyl by surgically removing the extra finger—typically, when the child is between 1 and 2 years old, young enough that he won’t miss developmental milestones such as grasping (prehension), but late enough that he can tolerate anesthesia and surgery well

SYNDACTYLY

- This is congenital anomaly of the hand is evidenced by a persistence of the webbing between adjacent digits, so that they are attached to each other. this anomaly also occur in the feet. there may be varying degree of attachment between the digits. since the metacarpals and phalanges in the fingers are of different lengths,an attachment between them,

limits the amount of movement of the affected joints. this may ultimately result in deformities of the joints. with a loss of function.



- Investigation:
- History collection
- Radiological examination
- X-rays

Midwifery management:-

- Successful management of these children involve member of professional team. The parents and children themselves must be included as a team members.
- Parents need supportive care
- Prostheses are used for the lower extremities when the infant attempts to sit up and pull towards standing position.
- Surgical modification of the malformed limbs may be necessary.
- midwife teach the parents how to use prosthetic devices.

Conti…

- Parents should be able to accept their child needs for both dependence and independence and to help the child accept being different from other child.
- Providing psychological support.

TALIPES



club foot or talipes

- **Definition:** is a congenital disorder in which the foot and ankle are twisted and cant be manipulated into the correct position also known as talipes.it may be unilateral clubfoot which is more common than bilateral.

- Is one of the most common orthopedic deformities. It occurs in approximately 1 in 700 to 1000 lives births.
- **Etiology :**
- Arrested development during the 9th and 10thweeks of embryonic life, when the feet are formed.
- Deformed talus and shortened Achilles tendon
- Possible genetic predisposition.

- **TYPES OF TALIPES:**
- **Talipes equinovarus**: in this condition the foot is fixed in plantar flexion and deviates medially, the heel is elevated.
- **2.Talipes varus**: due to heel's being turned inward from the midline of the leg. only the outer portion of the sole rests on the floor.

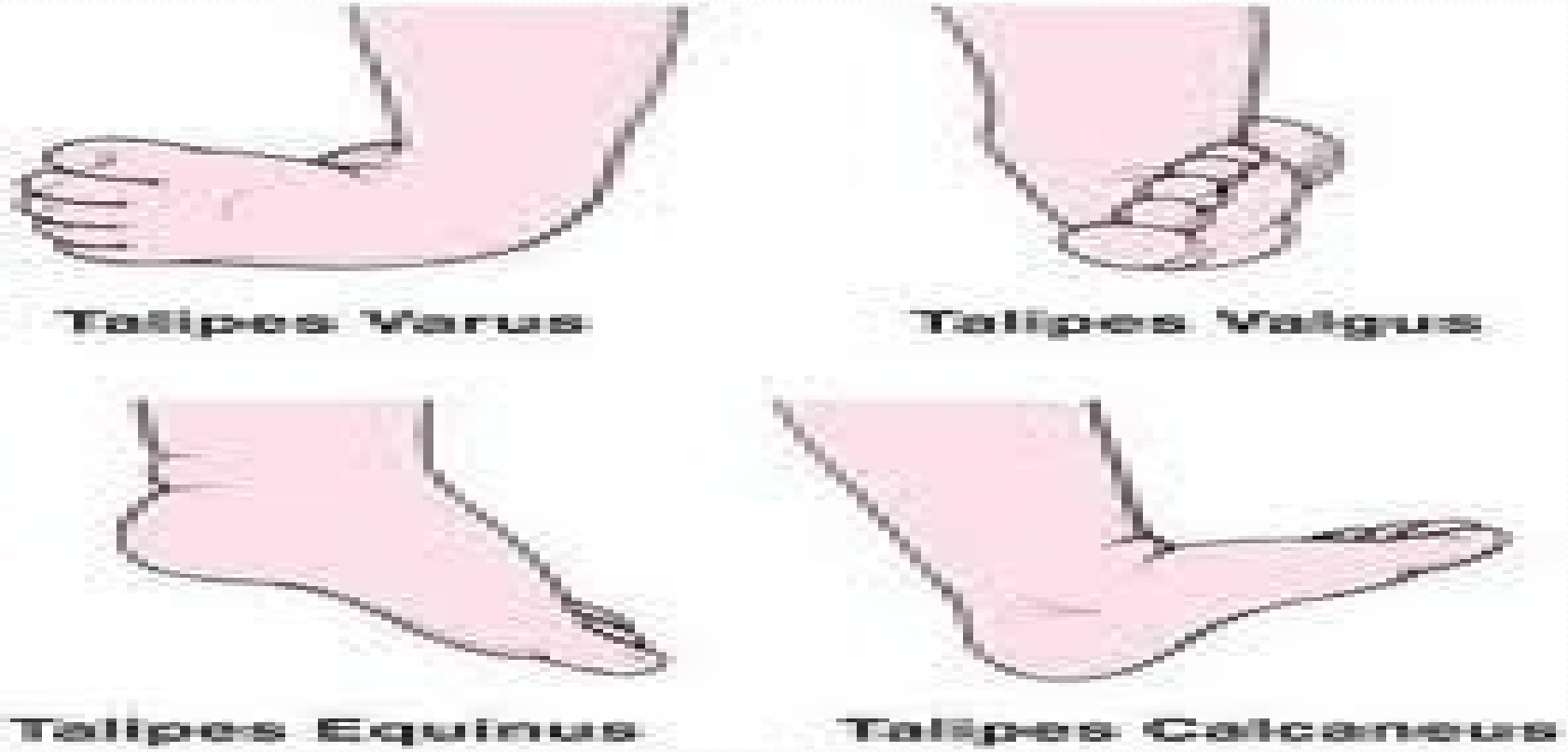
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- **3.Talipes equinovalgus**: Due to the heel's being elevated and turned outward from the midline of the body.
- 4. **Talipes calcaneovarus:** Due to the heel's being turned toward the midline of the body and the anterior part of the foot being elevated. Only heel rests on the floor.

Talipes Equinovarus



TALIPES VARUS



pathophysiology

- Abnormal development of the foot during fetal growth leads to abnormal muscles and joints and contracture of soft tissue.
- Apparent clubfoot
- Results when a fetus maintains a position that gives his feet a clubfoot appearance at birth, it can usually be corrected manually.
- Another form of apparent clubfoot is inversion of the feet, resulting from the denervation type of progressive muscular atrophy and progressive muscular dystrophy.

- **Investigation:**
- History collection.
- Physical examination
- Radiography.
- X-rays show superimposition of the talus and calcaneus and a ladder like appearance of the metatarsals.

Clinical manifestation

- Deformity is usually obvious at birth
- Child is restless
- The foot is small with a shortened Achilles tendon
- Muscles in the lower leg are atrophied.

complication

- Delayed growth and development
- Impaired mobility
- Physical injury.

management:

- The short term goals in the care of an infant who has talipes are to correct the Deformity and to maintain the body part in as normal position as possible.
- The long term goal is to prevent a recurrence of the deformity.
- Neonates correction of feet started as soon as possible, delay makes correction more difficult.
- Manipulation of the foot ,use of a denis browne splint or application of a cast to hold the foot in a corrected position.

- **Manipulation of the foot:** parents are manipulate the foot, they should taught the procedure and supervise in practice, manipulate the exercise program to be done several times a day.
- **Care of an infant in a denis browne splint:**applicance is made of two footplates attached to a crossbar. When splint is fitted to the feet, varying position of angulations can be maintained, as the infant kicks the feet are automatically moved into a corrected position. Infant feet may be attached to the splint with adhesive tape.

Child with **denis Browne splint**



- **Care of child in a cast:** the use of casts on an infant who has talipes encourages gradual stretching of tight muscles and contraction of previously relaxed muscle until a position of overcorrection has been reached.
- **Parent education: infant** discharged from the hospital the nurse should discuss with the parents the need for regular follow up care, educate parents about care

Child with cast



Developmental dysplasia of hip

- Definition: is a abnormal development of the proximal femur or acetabulum.it may be associated with other congenital anomalies. Left hip is more commonly affected, but bilateral involvement occurs in more than 50 percent cases.

Etiology

- Genetic and environmental factors
- It may develop following breech delivery or other difficult deliveries
- When head of the femur may get dislocated upward and backward which may cause development of a false acetabulum.

Pathophysiology

- The structure of hip joint,i.e.acetabulum,femoral head and capsule may not be developed properly. These lead to partial or complete dislocations of femoral head from the shallow acetabular cavity. Partial dislocation or subluxation is more common. Ossification centres are delayed

clinical manifestation

- Asymmetry of thigh
- Presence of gluteal and knee folds
- Diminished spontaneous movements
- Shortening of the affected leg
- Posterior bulging of femoral head
- Affected leg appear short
- Positive ortolani sign (forced abduction of hip causes a clicking sound)
- Positive trendelenburgs sign (downward felt of pelvis on affected side
- Pain in the joint

Investigation

- Routine neonatal examination and physical examination during developmental assessment at regular interval.
- X rays,ultrasonography

management

- Management depending upon the age of the child and degree of the problem.
- Management started as early as possible to restore as closely as possible the anatomic alignment of the hip.
- Subluxation of hip can be managed by pavlik harness or abduction brace for maintenance of flexion abduction position till the hip become normal, usually 3 month of age.
- Dislocation of hip may be required traction and closed reduction followed by application of hip spica cast for 3 months

Conti..

- Surgical correction, closed reduction required some time to baby.
- Providing analgesic medication inj-diclofenac 2ml/kg
- Providing emotional support to parents
- Maintenance of skin integrity and prevention of complications of immobility.
- Rehabilitation care and teaching parents about baby care
- Follow-up care.

hip spica and traction





complications

- Avascular necrosis
- Loss of range of motion of the affected hip
- Early osteoarthritis
- Femoral nerve palsy