



Clubfoot Congenital Talipes Equinovarus

Fifth Year – Tikrit Medical College

Orthopedic surgery lecture

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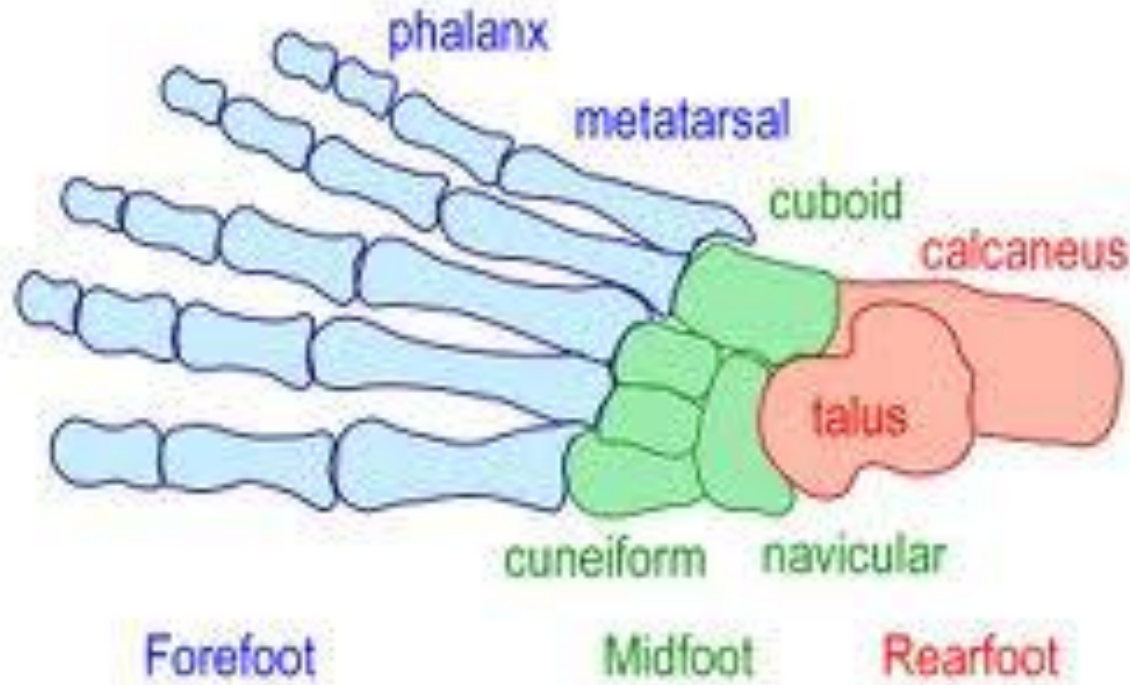
Objectives

- 1- definition of club foot
- 2- incidence and familial distribution
- 3- patho-anatomy of club foot
- 4- clinical feature
- 5- treatment guidelines
- 6- explanation of ponseti method
- 7- indications of operative treatment
- 8- outlines of surgical treatments according to the age
- 9 - complications

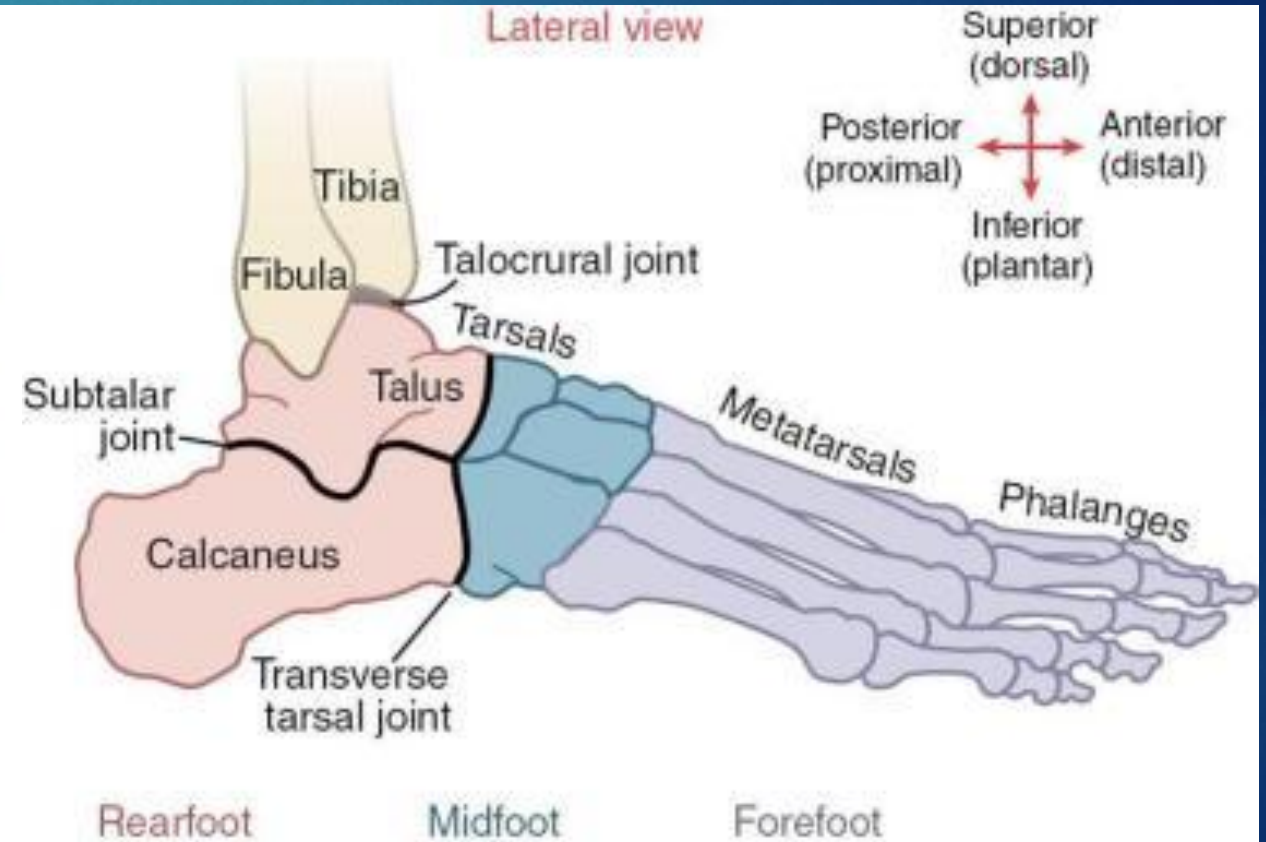
Introduction

- ▶ Idiopathic deformity of the foot / unclear etiology
- ▶ Incidence ... 1:250 to 1:1000
- ▶ Males > Females
- ▶ 50 % bilateral
- ▶ familial in 25%

Foot anatomy review !!!!!



Bones Within Foot Region



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(From Neumann: Knowledge of the Musculoskeletal System, 2nd edition.)

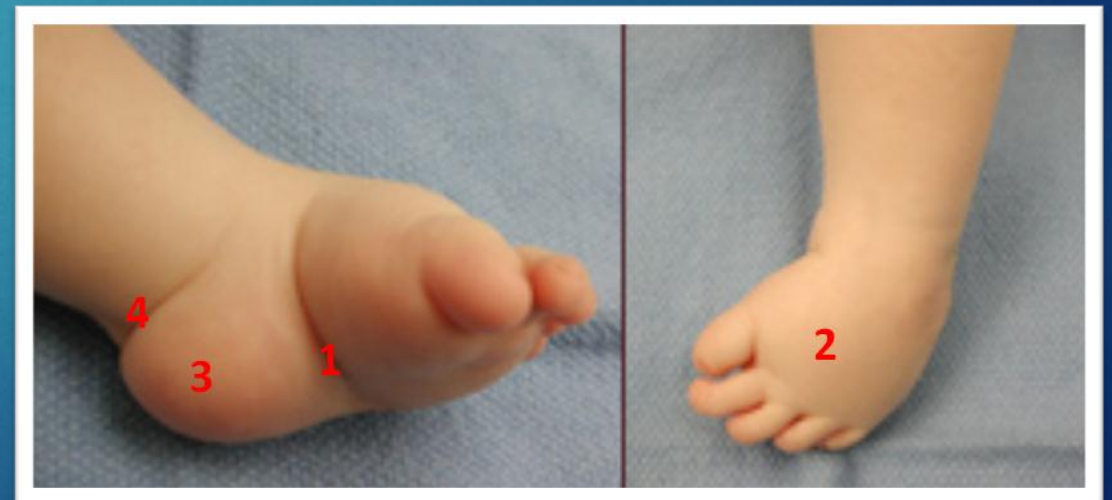
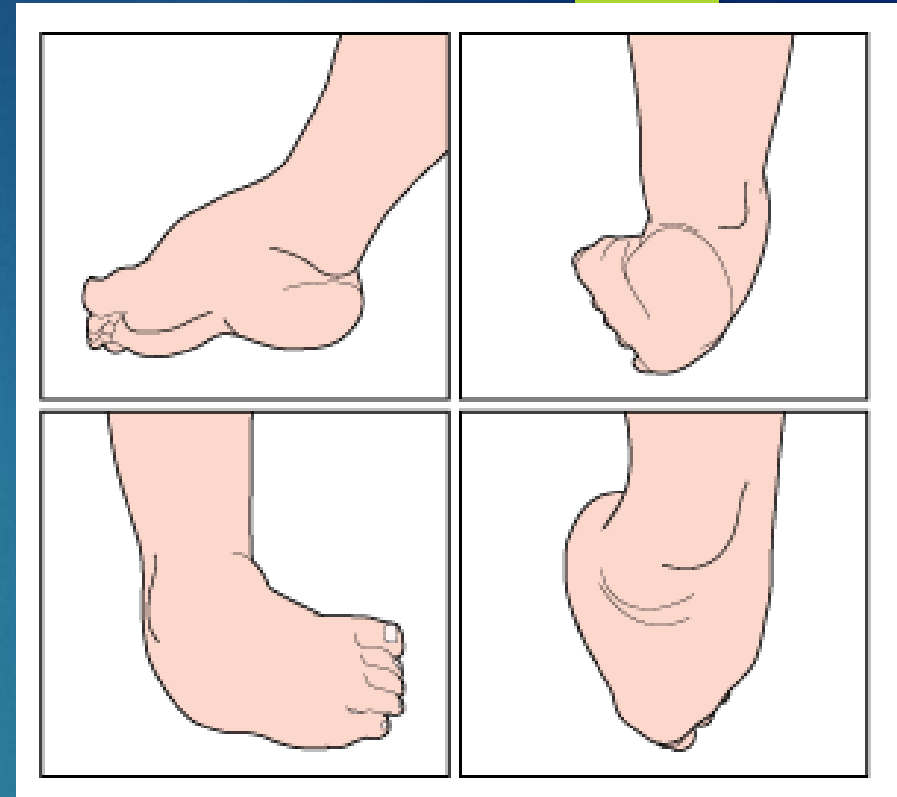
Pathoanatomy

- ▶ Muscles contractures lead to the characteristic deformity (**CAVE**)
 - ▶ **Cavus** midfoot (tight intrinsics, FHL, FDL)
 - ▶ **Adducted** forefoot (tight tibialis posterior)
 - ▶ **Varus** hindfoot (tight tendoachilles, tibialis posterior, tibialis anterior)
 - ▶ **Equinus** hindfoot (tight tendoachilles)



Presentation

- ❑ small foot and calf
- ❑ medial and posterior foot skin creases
- ❑ Rigid hindfoot in equinus and varus
- ❑ midfoot in cavus
- ❑ forefoot in adduction



Treatment

1- Non operative

- ▶ serial manipulation and casting (**Ponseti method**)
- ▶ **Ponseti** method has 90% success rate
- ▶ goal is rotate foot laterally around a fixed talus
- ▶ order of correction (CAVE)
 - ▶ midfoot cavus
 - ▶ forefoot adductus
 - ▶ hindfoot varus
 - ▶ hindfoot equinus

Ponseti method



Ponseti method

- ▶ Weekly serial casting (with knee in 90° of flexion)
 - ▶ Correction order in CAVE
 - ▶ Achilles tendon lengthening at week 8 required in 80 %
-
- ▶ **Foot abduction orthosis (FAO)**
 - ▶ worn after full correction 23 hours / day for 3 months
 - ▶ then night time/nap time only until age 4 years



Operative

1- posteromedial soft tissue release and tendon lengthening

- ▶ performed at 9-10 months of age so the child can be ambulatory at one year of age

▶ Indications

- ▶ resistant feet in young children
- ▶ "rocker bottom" feet that develop as a result of wrong serial casting
- ▶ syndrome-associated clubfoot
- ▶ delayed presentation >1-2 years of age

operative management in older children

- ▶ older children from 3 to 10 years
 - ▶ medial column lengthening or lateral column-shortening osteotomy, or cuboid decancellation
- ▶ refractory clubfoot at 8-10 years of age
 - ▶ triple arthrodesis
- ▶ talectomy
 - ▶ salvage procedure in older children (8-10 yrs) with an insensate foot

Complications

► deformity relapse

- in child < 2 years  repeat casting
- relapse in child > 2 years
 - initially with casting
 - then repeat Achilles tendon lengthening +/- Tibialis anterior split transfer

► residual cavus

► pes planus from overcorrection

► in toeing gait

► osteonecrosis of talus