- Describe the foot deformity you see in this clinical photo

1. **Equinus** of the hindfoot,
2. **Varus** (or inversion) of the subtalar joint complex (hindfoot),
3. **Cavus** (plantar flexion of the forefoot on the hindfoot),
4. **Adductus** of the forefoot on the midfoot.

- What is your Diagnosis for this deformity ?

- **Congenital Talipes Equinovarus (Clubfoot)**

- Define Talipes Equinovarus ?

- Contractural malalignment of the bones and joints of the foot and ankle.

- Congenital dysplasia of all musculoskeletal tissues (musculotendinous, ligamentous, osteoarticular, and neurovascular structures) distal to the knee.

Describe the four recognized classes of clubfoot

1. Idiopathic.
2. Postural.
3. Neurogenic.
4. Syndromic.

- Describe syndromes associated with clubfoot

TABLE 29-2 Syndromes with Which Clubfoot Is Commonly Associated

Arthrogryposis
Constriction bands (Streeter dysplasia)
Prune belly
Tibial hemimelia
Möbius syndrome
Freeman-Sheldon syndrome (whistling face) (autosomal dominant)
Diastrophic dwarfism (autosomal recessive)
Larsen syndrome (autosomal recessive)
Opitz syndrome (autosomal recessive)
Pierre Robin syndrome (X-linked recessive)

- What is the **Pirani** classification.

*This is a system to score the **severity of a clubfoot deformity**.*

It consists of :

A) a ***hindfoot score***: assessing the posterior heel/ankle crease, the position of the calcaneum in the heel and the rigidity of the equinus and

B) a ***midfoot score***: assessing the medial crease, the lateral curvature of the foot and the lateral coverage of the head of the talus by the navicular.

Each component scores 0, 0.5 or 1 giving a **maximum of 6 points** for the *most severe deformity.*

1. **Posterior heel/ankle crease:**

0=normal (multiple fine creases which do not change the contour of the heel)

0.5=one or two deep creases which do not appreciably change the contour of the heel

1=one or two deep creases which appreciably change the contour of the heel.

2. Position of the calcaneum in the heel:

0=calcaneum easily palpable;

0.5=calcaneum palpable deep inside the heel

1=not palpable.

3. Rigidity of equinus:

0=foot comes up to a dorsiflexed position of more than 5°

0.5=range between 5° of plantar flexion and 5° of dorsi flexion

1=fixed equinus of more than 5°.

4. Medial crease:

0=normal (multiple fine creases which do not change the contour of the arch)

0.5= one or two deep creases which do not appreciably change the contour of the arch

1= one or two deep creases which appreciably change the contour of the arch.

5. Curvature of lateral foot border:

0=straight lateral border from the heel to the 5th metatarsal head

0.5=mildly curved lateral border (the curvature appears to be in the distal part of the foot in the area of the metatarsals

1=pronounced curvature (it appears to be at the level of the calcaneo-cuboid joint).

6. Lateral talar head coverage:

0=complete reduction of the navicular onto the talar head

0.5=partial reduction of the navicular onto the talar head

1=easily palpable talar head because of fixed medial subluxation of navicular.

How will you manage- at birth and late stage.

The Ponseti method is the preferred treatment.

It starts soon after birth and consists of:

1. Weekly serial casting with **above knee** plasters for about 6 weeks.
2. Percutaneous Achilles tendon release in about 80% of patients at about 6 weeks.
3. Further post-operative casting for about 3 weeks (a cast change during this period might be necessary).
4. **Boots** on a bar 23 hours a day for 3 months.
5. Boots on a bar for during the night up to the age of 4/5 years.

- Ponseti treatment is also effective in older children in correcting all or part of the deformity.

- Depending on the severity of the deformity additional surgery is required.

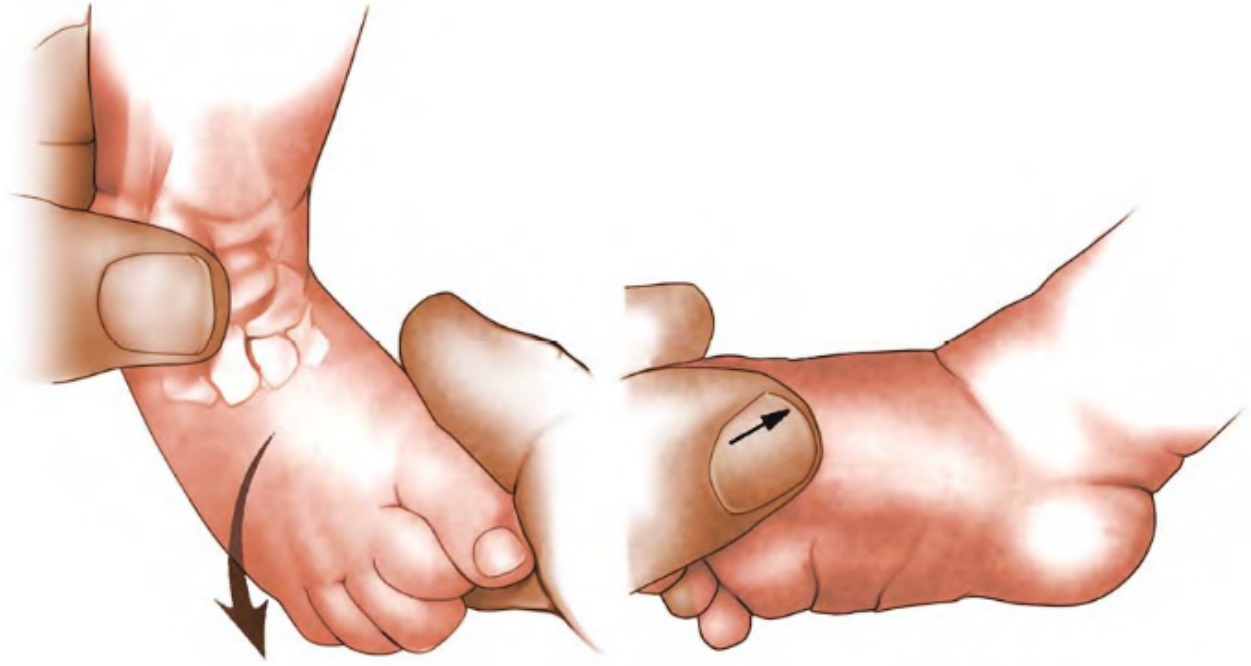
- Describe the general order of deformity correction via the Ponseti method ?

- The acronym ***CAVE*** outlines this order of deformity correction

- Describe the steps of **Ponseti method**

- The foot is manipulated for 1 to 3 minutes.
- Maintained for 5 to 7 days.
- cast extending from the toes to the upper third of the thigh and the knee at 90 degrees of flexion.

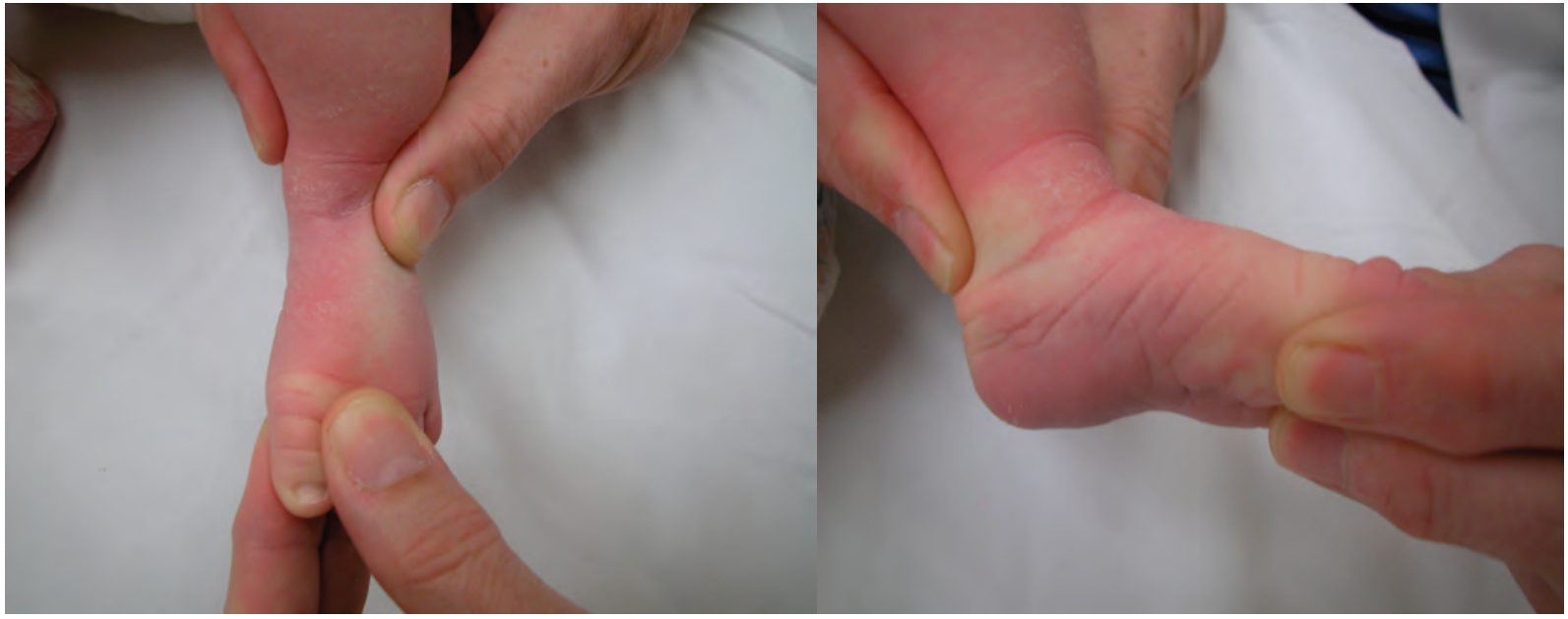
- The first manipulation strives to correct the cavus deformity by supinating the forefoot and dorsiflexing the first metatarsal.



- Metatarsus adductus and hindfoot varus are simultaneously corrected.

- First, forefoot abduction should be performed with the foot in slight supination.
- Second, the heel should not be constrained by premature dorsiflexion.
- Third, care is taken to locate the fulcrum for counterpressure on the lateral head of the talus.

The forefoot is never everted; rather, it is displaced as a unit.



A

B

- Thinly padded, well-molded.
- Initially extend to below the knee while it is molded.
- The heel prominence should be emphasized by molding above and around it.

- The correction is maintained not through pressure but through careful molding.

- The cast is then extended to the rotation.

- The cast is trimmed over the toes to allow the toes to exteupper thigh with the knee flexed at 90 degrees with the leg in slight external nd freely.

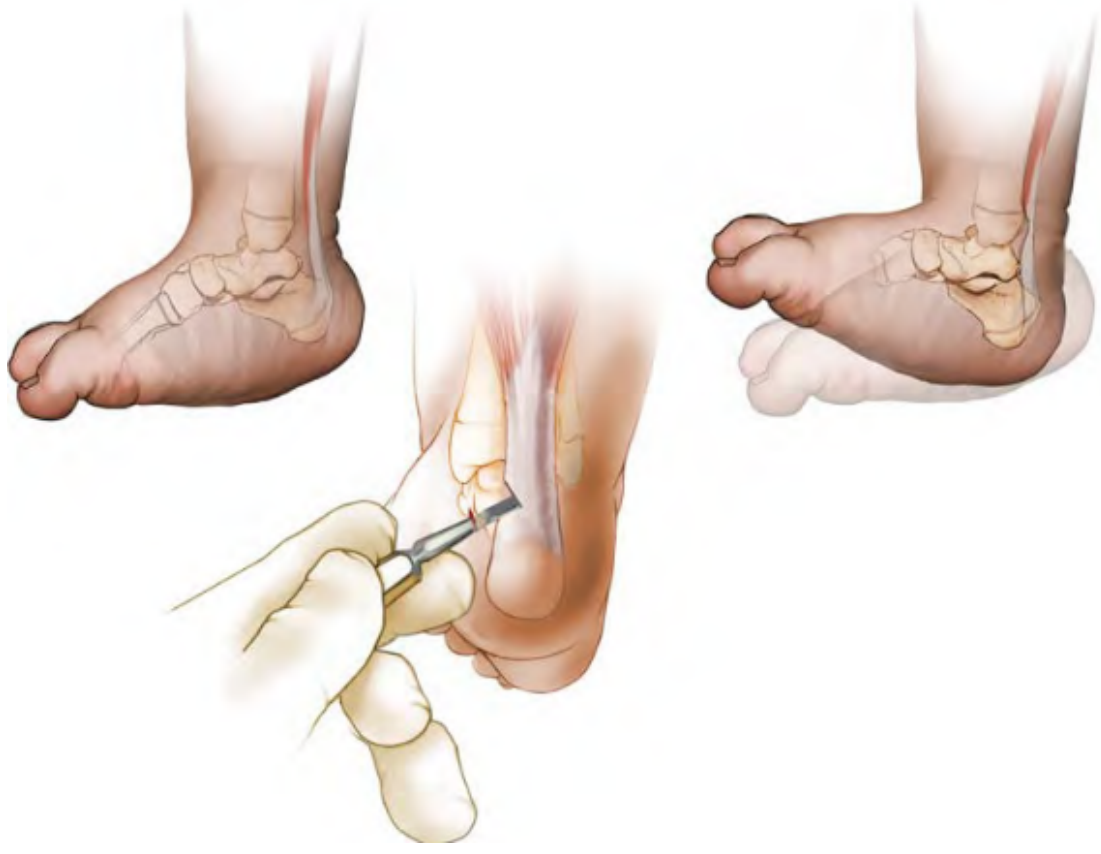
- Equinus is the last deformity that is corrected, when the hindfoot is in neutral to slight valgus and the foot is abducted 70 degrees relative to the leg.

- The foot is dorsiflexed by applying pressure under the entire sole of the foot and not much under the metatarsal heads to avoid a rocker bottom deformity.

- subcutaneous heel cord tenotomy is performed in the vast majority (at least 85%) of patients.

In this procedure the entire Achilles tendon is transected.

It is important to cut the tendon 0.5 to 1 cm proximal to its insertion

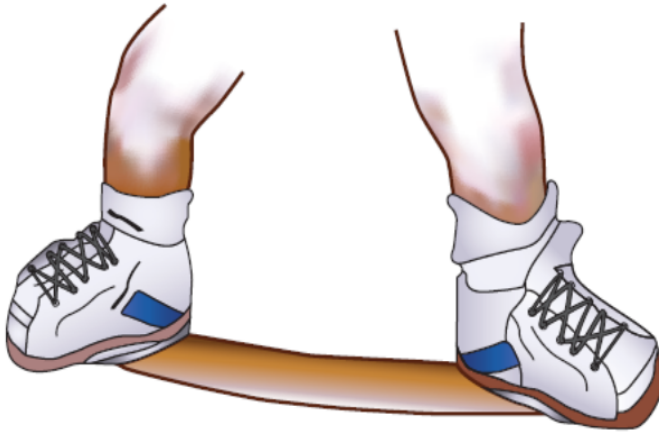


- With the final cast applied, the foot should be in 20 degrees of dorsiflexion and 70 degrees of abduction.

- This final cast is worn for 3 weeks.

Foot abduction orthosis (Denis Browne bar)

- Compliance with orthosis wear is mandatory for a successful outcome.



- 70 degrees external rotation.
- 10 degrees of dorsiflexion.
- Width of the child's shoulders.