Congenital Talipes Equinovarus

INTRODUCTION

- **Congenital Talipes Equinovarus (CTEV) (The ‘Club Foot’)**
- The Club Foot is deformed in three planes .
- In true CTEV the deformity is fixed. Intrauterine moulding can cause an identical pattern of deformity that is postural and therefore correctable.

INCIDENCE

- The reported incidence varies from 1 to 6 per 1000 live births, depending on racial differences.
- It is more common in boys and bilateral in approximately 50% of cases. A family history is common but inheritance is multifactorial.
- Boys > Girls (2:1)

AETIOLOGY

Idiopathic in most cases

Postural- associated with placenta previa and breech presentation

Neuromuscular= Spina bifida (Myelomeningocele) Arthrogryphosis

Syndromic- Trisomy 15

PATHOLOGY

Triplanar deformity

Hind foot
- Equinus
- Varus

Mid foot
- Cavus

Forefoot
- Adduction
- Supination

PATHOLOGY

- Deformed talar head and neck - Talonavicular joint subluxation (Navicular bone – displaced medially and planterwards).
- Thickening and shortening of…….

1. Ligaments- Calcaneofibular
2. Tendon sheaths- posterior tibial tendon

- Smaller Gastrocnemius, Soleus and posterior tibial muscles.

CLINICAL FEATURES

Two types

Postural

Structural

fixed deformity

CLINICAL FEATURES

Postural

- Can be manipulated into a normal position- eversion and dorsiflexion. Toes will touch the front of the shin
- Minimal medial creases
- Shallow and multiple posterior creases

CLINICAL FEATURES

Structural

- Can not be corrected beyond neutral
- Marked cavus
- Shortened Tendo Achilles
- Deep medial and single posterior crease
- Small calf
- Small foot

INVESTIGATION

- Using Antenatal USS, can detect the deformity.
- X-ray- helpful in assessing progress after treatment

TREATMENT

Non surgical

- If mild- manipulation- teach mother
- If significant- serial manipulation and casting (Ponseti method) 95% of foot deformity will be corrected
- After correction, position is maintained by foot abduction orthosis (FAO)
- Keep the foot in external rotation and slight dorsiflexion
- Worn full time for 3 months
- At night for atleast 18 months (Denis Browne night splints)

TREATMENT

PONSETI METHOD

- The method described by Ponseti corrects foot deformity in
- 95% of idiopathic cases without the need for a formal surgical release and has now become the treatment of choice for all such feet.
- Treatment commences within a few days of birth.
- A specific series of manoeuvres, followed by a series of well moulded above-knee plaster casts, results in gradual correction of the deformity .

TREATMENT

- **PONSETI METHOD……**

- The head of the talus is the fulcrum around which the rest of the foot rotates.
- After the forefoot has been corrected, most feet (about 80%) require a percutaneous Achilles tenotomy (performed under local anaesthetic in the clinic setting) in order to dorsiflex the foot satisfactorily.

TREATMENT

- Once corrected the foot position is maintained by a foot abduction orthosis (FAO) that holds the feet in external rotation and slight dorsiflexion.
- The FAO is worn full-time for 3 months and at ‘night and nap-time’ for up to 4 years.
- Poor compliance with the FAO is associated with a higher relapse rate.
- The Ponseti method is significantly better than other reported conservative regime.

TREATMENT

Surgical

- Release of pathologically tight structures (elongation of Tendo Achilis)
- Complications

1. Stiffness
2. Over correction
3. Under correction

TREATMENT

SURGICAL TREATMENT

- When conservative treatment fails, surgical intervention is required, ideally before walking age.
- Surgical release is generally performed ‘à la carte’, with equential release of the pathologically tight structures via either a Turco incision or the Cincinnati incision to reduce the subluxated joints.
- Stabilisation may require the use of temporary Kirschner wires.

TREATMENT

- Deformity correction should not be compromised by wound closure and the Cincinnati Treatment incision can be left to heal by secondary intention if necessary.
- Postoperative casting is followed by splinting and physiotherapy as required. Good or excellent results are reported in 60–80% of children treated surgically but stiffness and overor undercorrection are common complications.

TREATMENT

- Surgical procedures may involve further soft-tissue releases or tendon transfers but, in the presence of fixed deformity, bony correction is often necessary.
- The foot becomes progressively stiffer with each surgical intervention.