



Childrens Orthopaedic Surgery

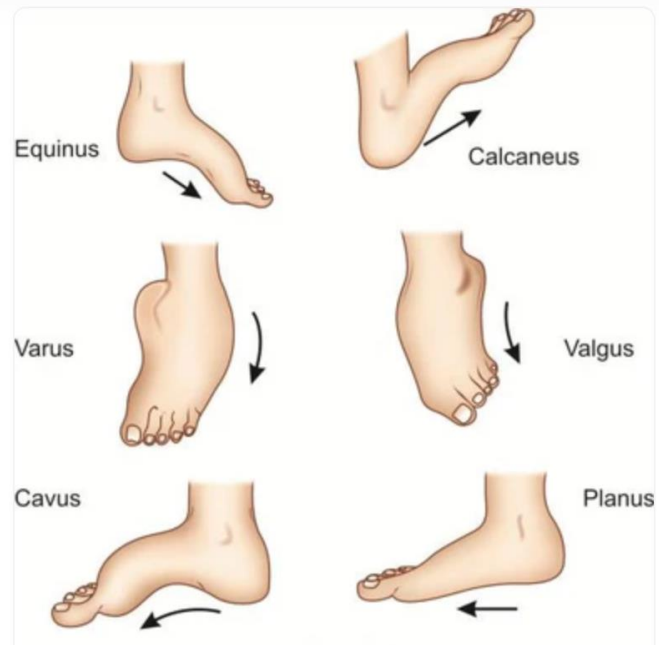
Paula Kelly

Paediatric Orthopaedic Surgeon
Clinical Director CHI

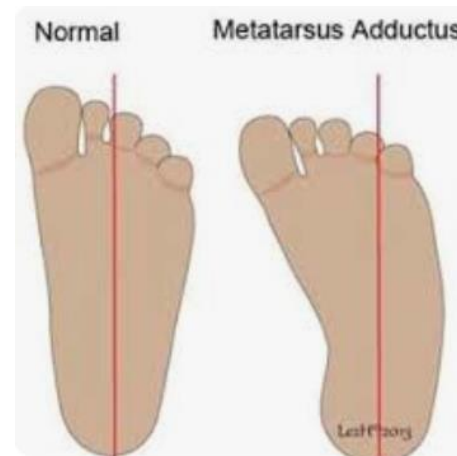
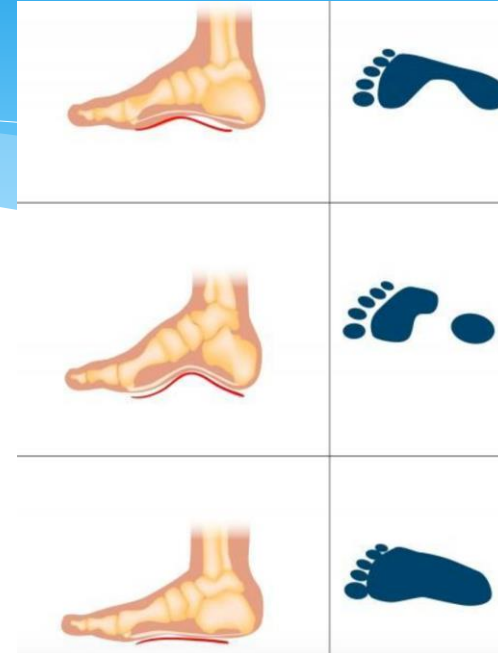
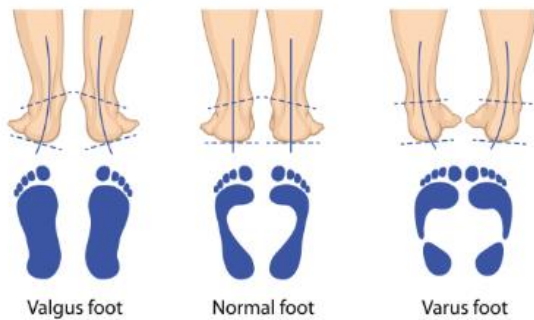
Topics

- * Flat feet
- * Neonatal congenital foot deformities
- * Cavus foot
- * Talar OCLs
- * Foot pain
- * Limb Reconstruction
- * New Children's Hospital

Foot Deformity



VALGUS and VARUS deformity of the foot



Flatfeet

Flatfoot - Definition

- * Pes planus - Absent or depressed longitudinal arch
- * Pes planovalgus – when associated with a hindfoot valgus



2 Types

- * Flexible (99%)

?

- * Rigid (1%)

Flexible flatfoot

- * Physiological
- * Hypermobile flatfeet- excessive ligamentous laxity
 - * Familial
 - * Hyperlaxity syndrome
 - * Trisomy 21
 - * Marfan's
 - * Ehler-Danlos syndrome

Flexible flatfoot

- * Neuromuscular
 - * Myopathy
 - * Peripheral nerve lesions
 - * Spinal cord – spina bifida
 - * Brain – cerebral palsy

Normal flatfeet

- * Physiological up to 4-6 years
- * Infant –fat in medial arch
- * ? OUTRULE UNDERLYING PATHOLOGY

Hyperlaxity Syndrome – 11 year old

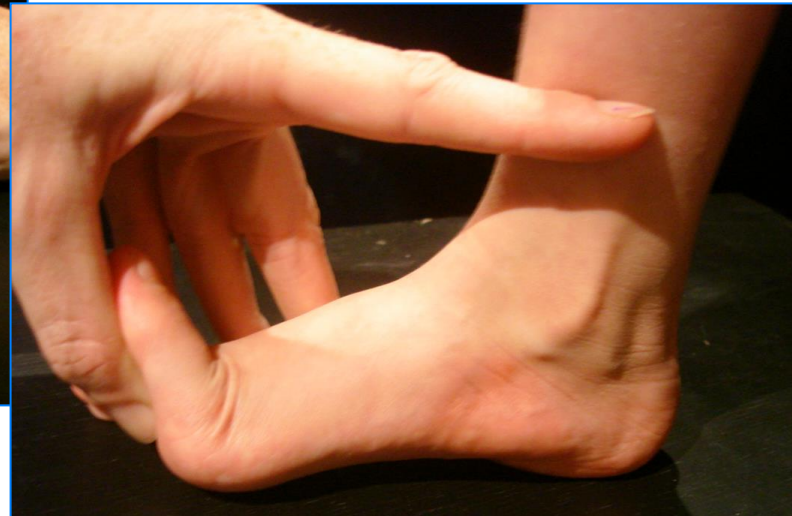
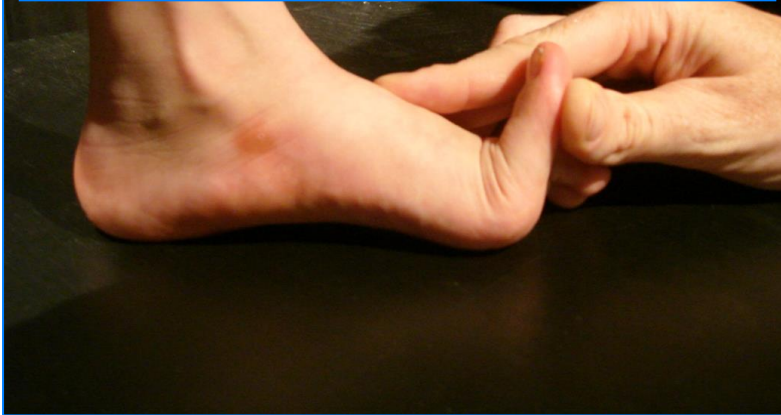


7 year old Ehler-Danlos Syndrome



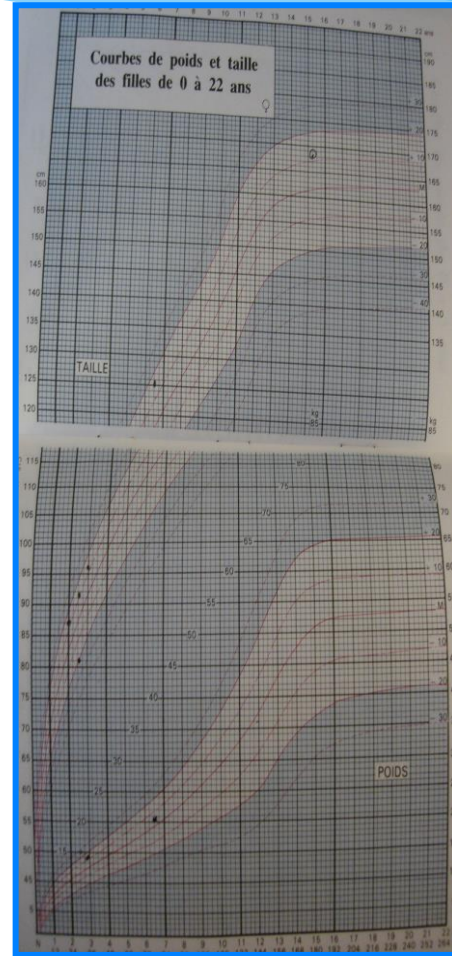
Check Skin Elasticity

Positive Jack Toe Rise

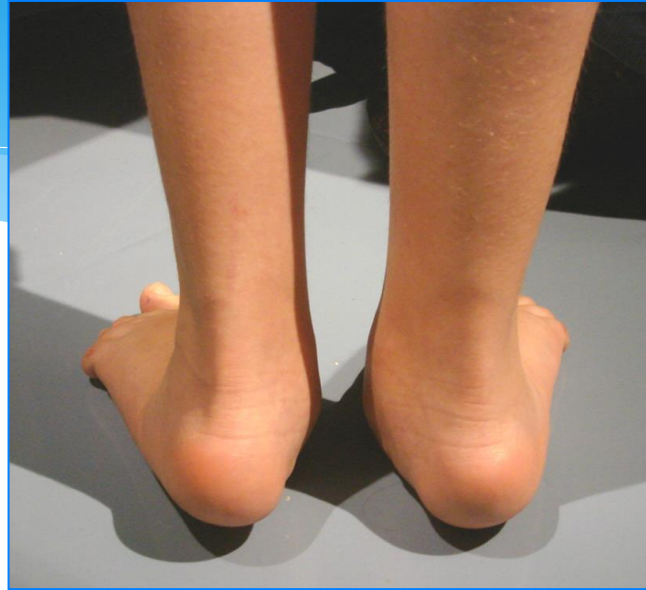


Marfan's syndrome

15 year old



12 year old cerebral palsy



Myelomeningocele 13 year old



CTEV over-correction



Neurofibromatosis



Rigid Flatfeet

- * Congenital

- * Tarsal coalition – inability to walk on lateral border of foot
- * Congenital vertical talus
- * Apert's syndrome

- * Acquired

- * Inflammatory
 - * Juvenile idiopathic arthritis
- * Post-traumatic
 - * Fractures involving subtalar joint

12 year old



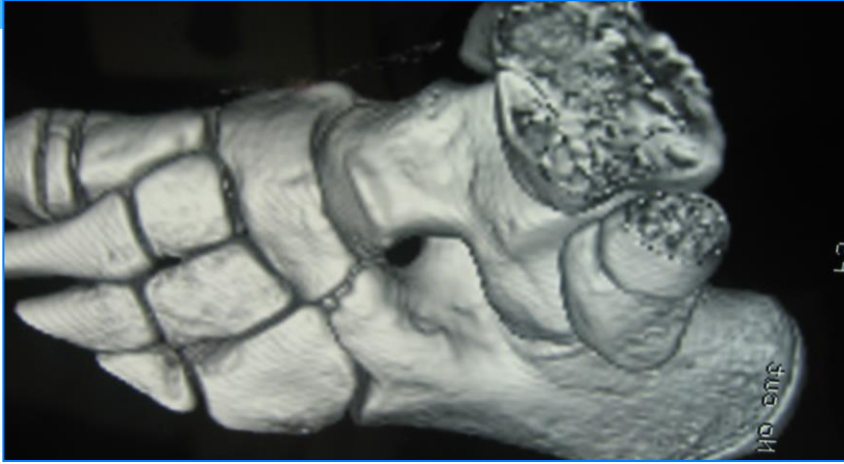
- * Persistent hind foot valgus on heel-rising

- * Positive foot progression angle

- * Inability to walk on external border of foot

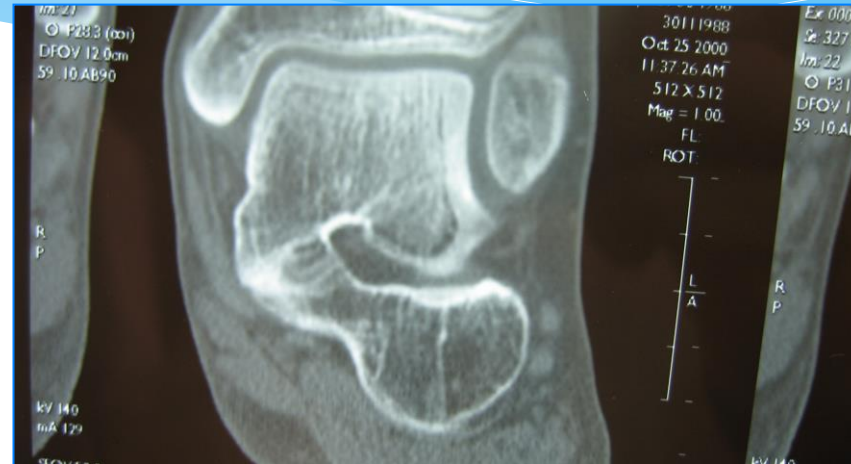
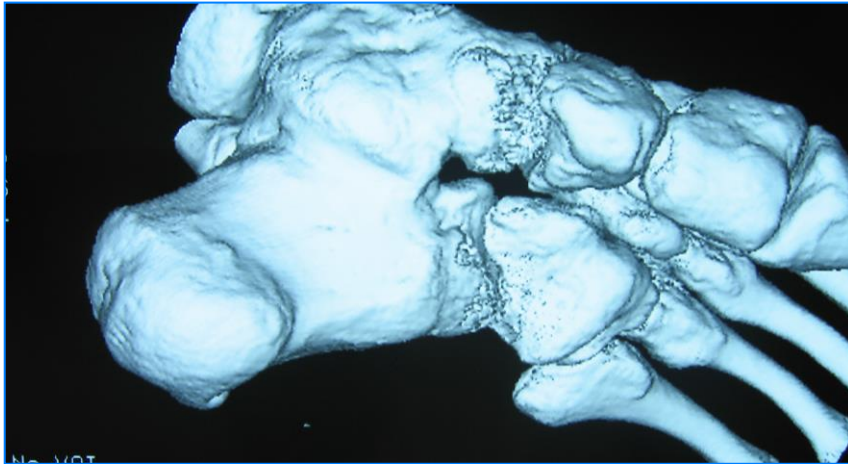


Tarsal coalition Calcaneonavicular



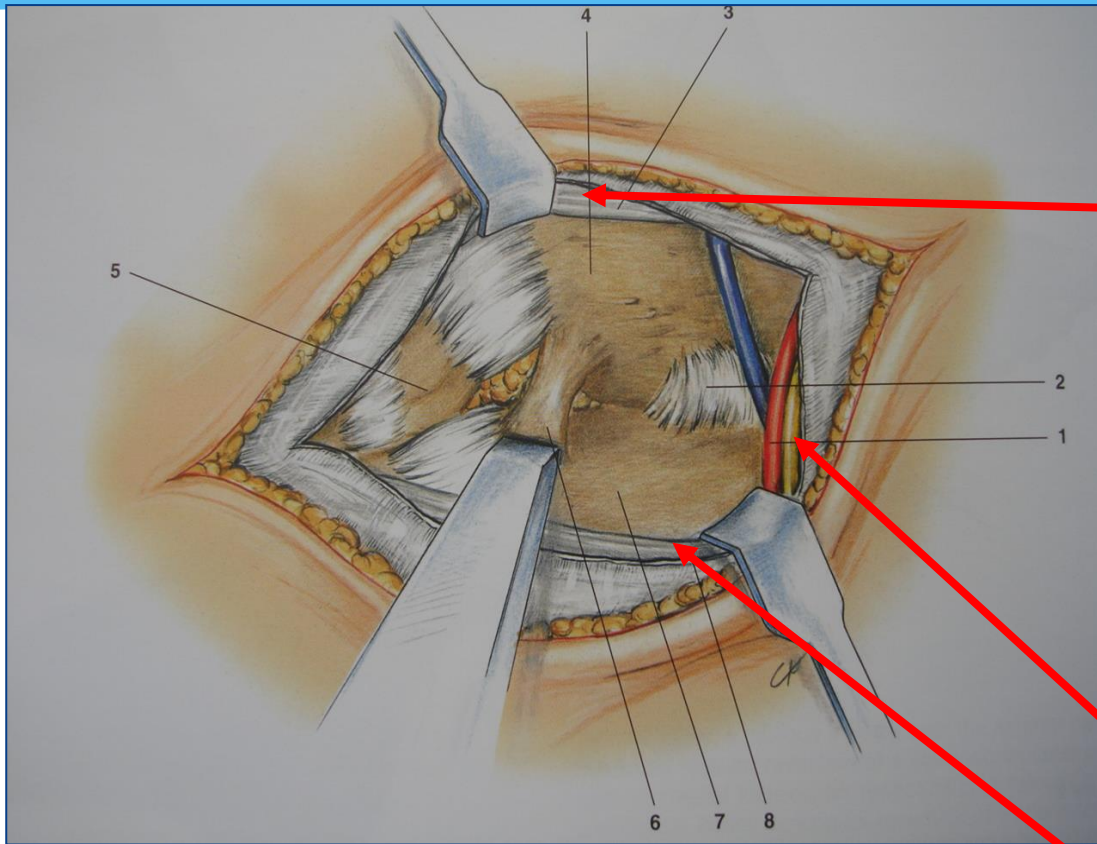
- * Resection plus interposition abductor hallucis muscle

Tarsal Coalition Talocalcaneal

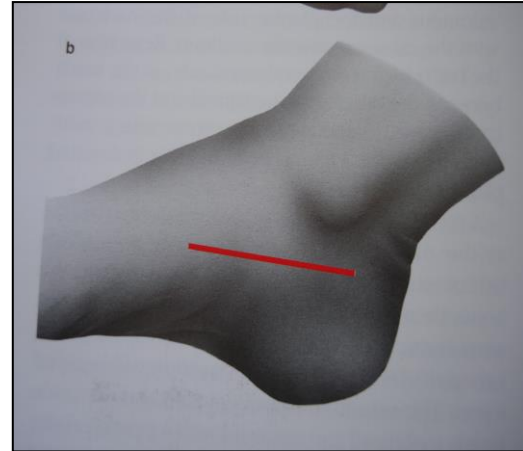


- * Resection if $< 50\%$ surface area
- Abductor hallucis muscle pull-through

Talocalcaneal resection



Tibialis posterior



Neurovascular bundle

Flexor hallucis longus

Fibular hemimelia with coalition



Congenital Feet

Calcaneovalgus



M.T.V.



- * Normal hindfoot
- * Adducted forefoot
- * Usually resolve by 8 months
- * Referral to local Ponseti clinic

Curly Toes

- * Conservative
- * Passive stretching with nappy change
- * Consider percutaneous flexor tenotomy > 4years if symptomatic or overlapping



C.T.E.V.

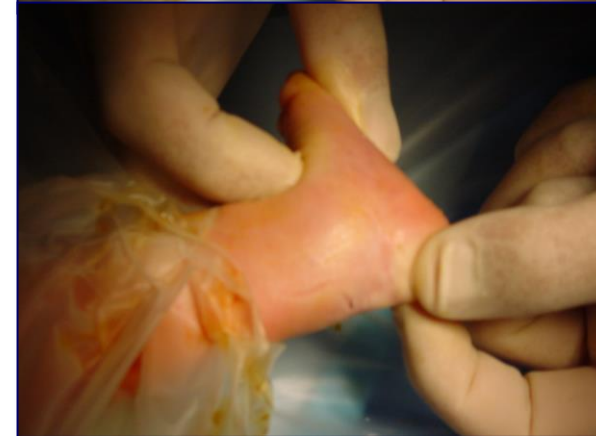
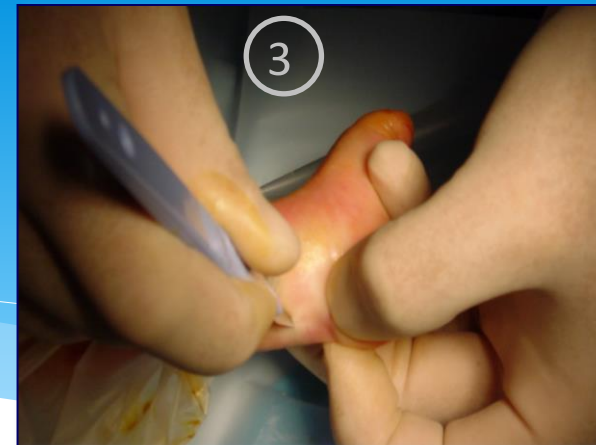
- * Hind foot equinus
- * Varus of forefoot and heel
- * Adduction of forefoot



Clinical Features

- * Positional/postural clubfeet
 - * dorsiflexion
- * Resistant type
 - * cannot be corrected to neutral
 - * deep creases over heel and medial sole of foot





Congenital Vertical Talus



- * Convex plantar surface
- * Autosomal dominant trait with incomplete penetrance
- * Rigid, convex plantar surface
- * Manipulation and serial casting
- * Surgery/ Serial casting

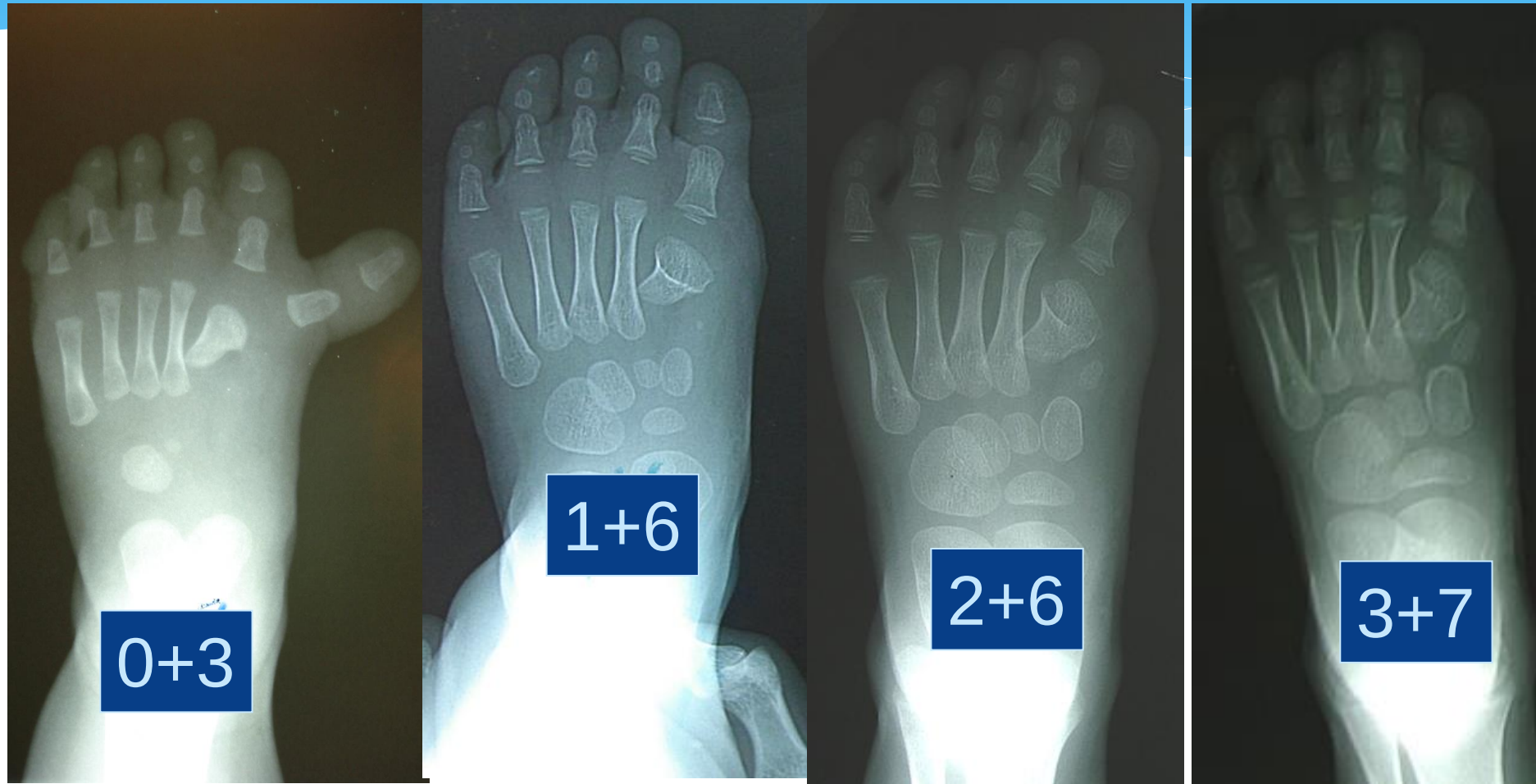
Central Ray Defect



Case 1 Amniotic Band Resection



CF



CE



CF





Infantile Fibrosarcoma



The Cavus Foot

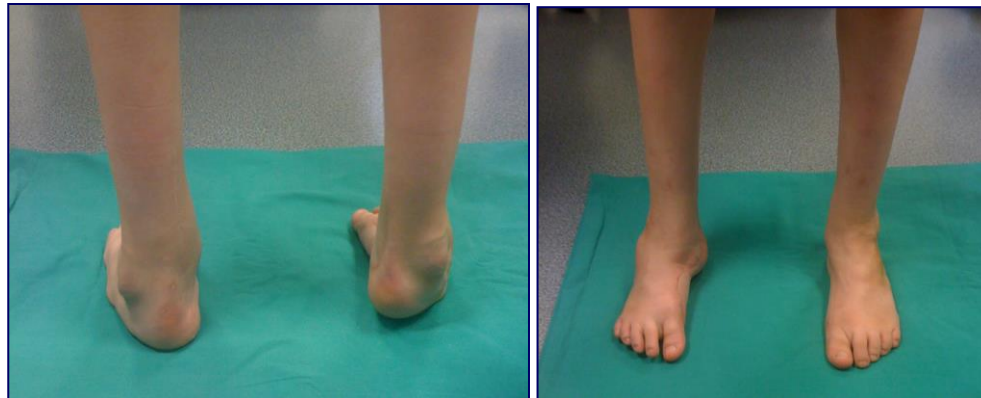
Aetiology- Neuromuscular

- * Cerebral Palsy
- * Polio
- * Friedreich's ataxia
- * Myelomeningocele
- * Spinal cord pathology
- * Peripheral nerves
 - * HSMN
 - * Sciatic nerve injury
 - * Compartment syndrome



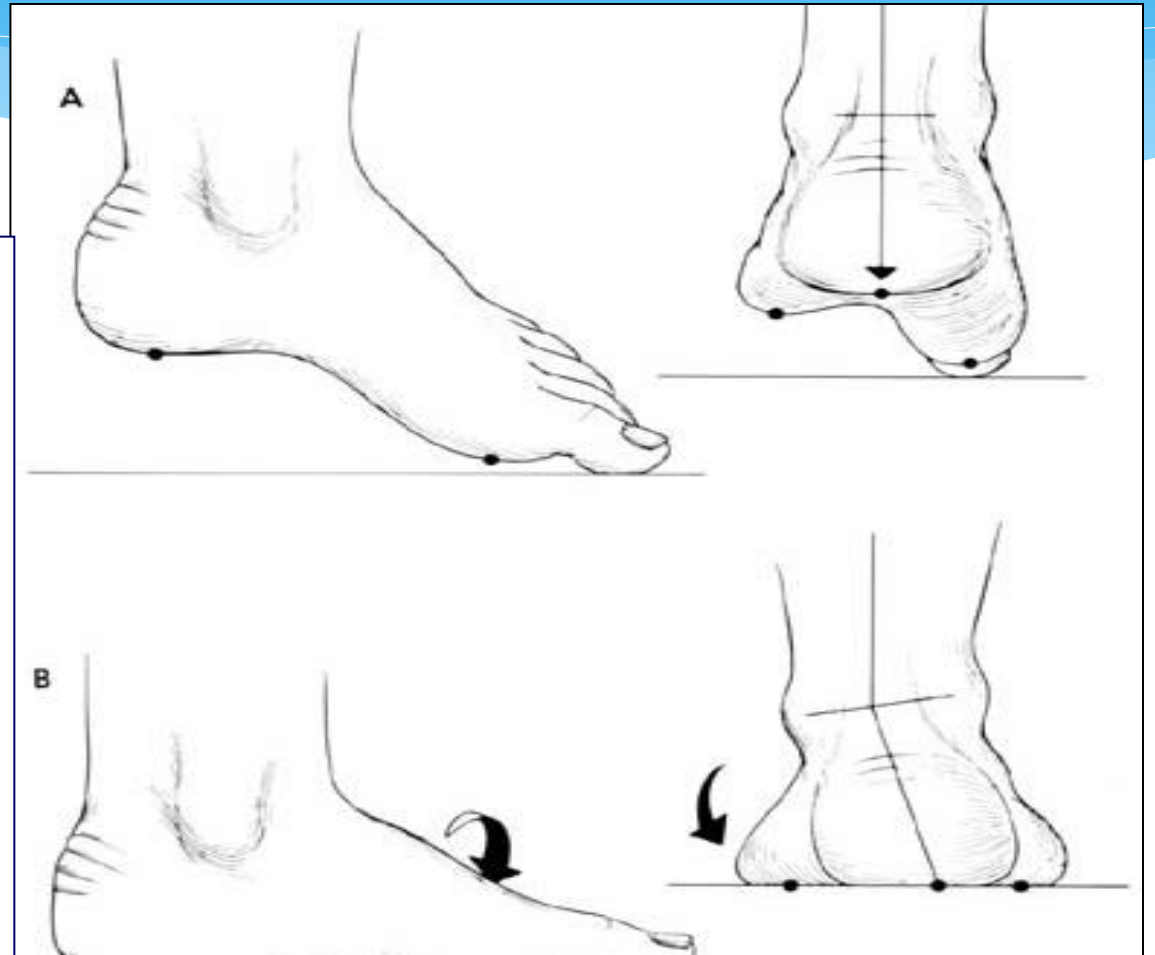
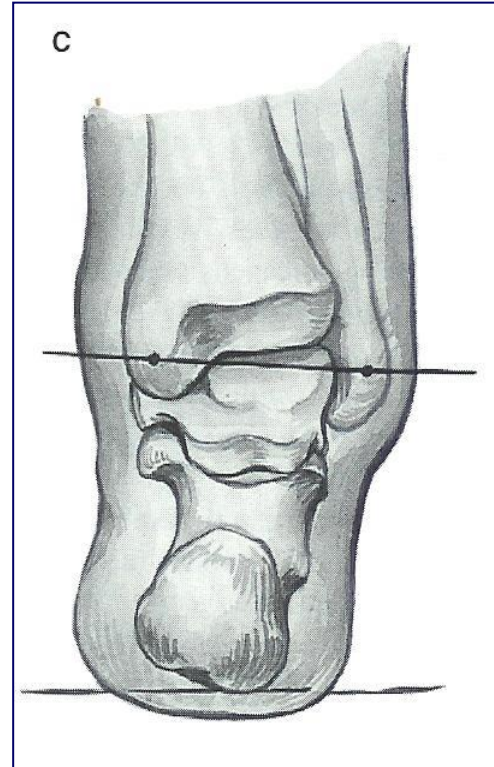
Aetiology

- * Congenital
 - * Arthrogryposis
- * Residual CTEV



Hindfoot varus

- * 1st Ray plantarflexed
- * Secondary hindfoot varus





Cavovarus





Modern Treatment (during childhood)

Surgical Technique





Modern Treatment

- * Avoid triple arthrodesis at the end of growth
- * Opening wedge osteotomies cuneiforms
- * Selective soft tissue release
- * Tendon transfers

CMT

Neglected cavovarus feet 15+6 year old



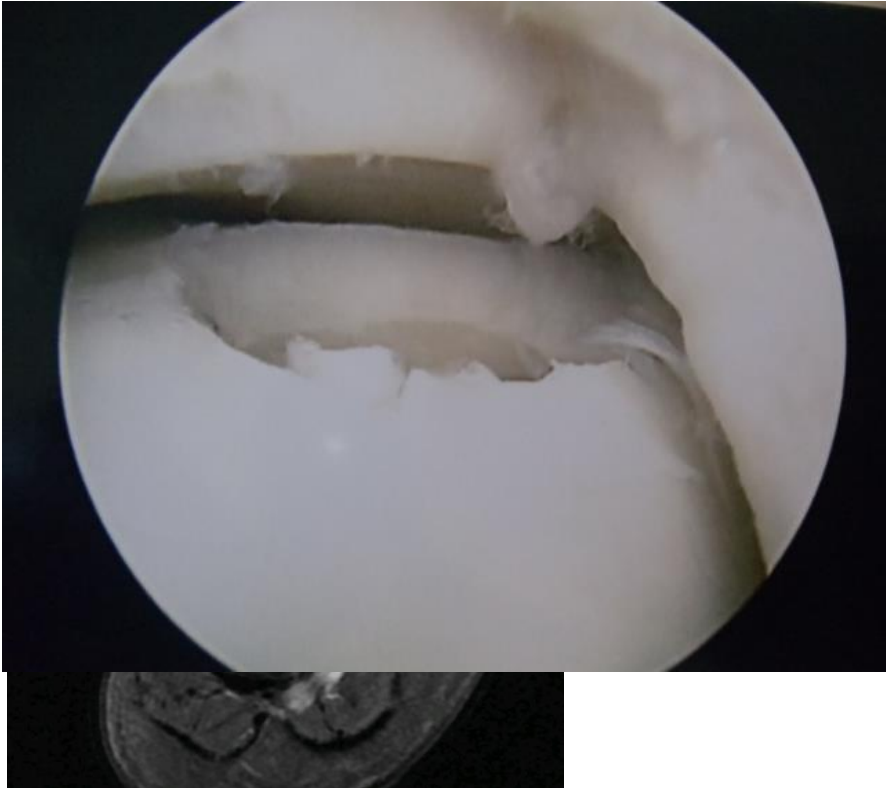
Talar Osteochondral Lesions

- * 12 year old with painful ankle
- * Camogie
- * Progressive clinically and radiologically

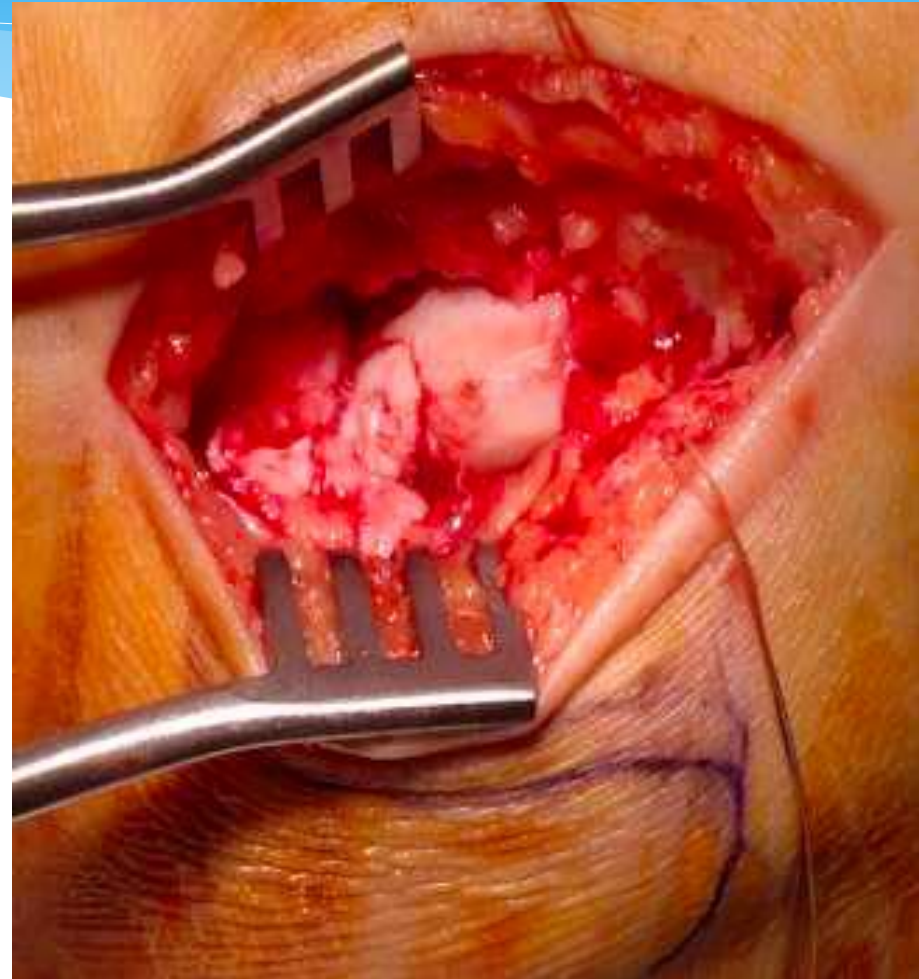


Talar Osteochondral Lesions

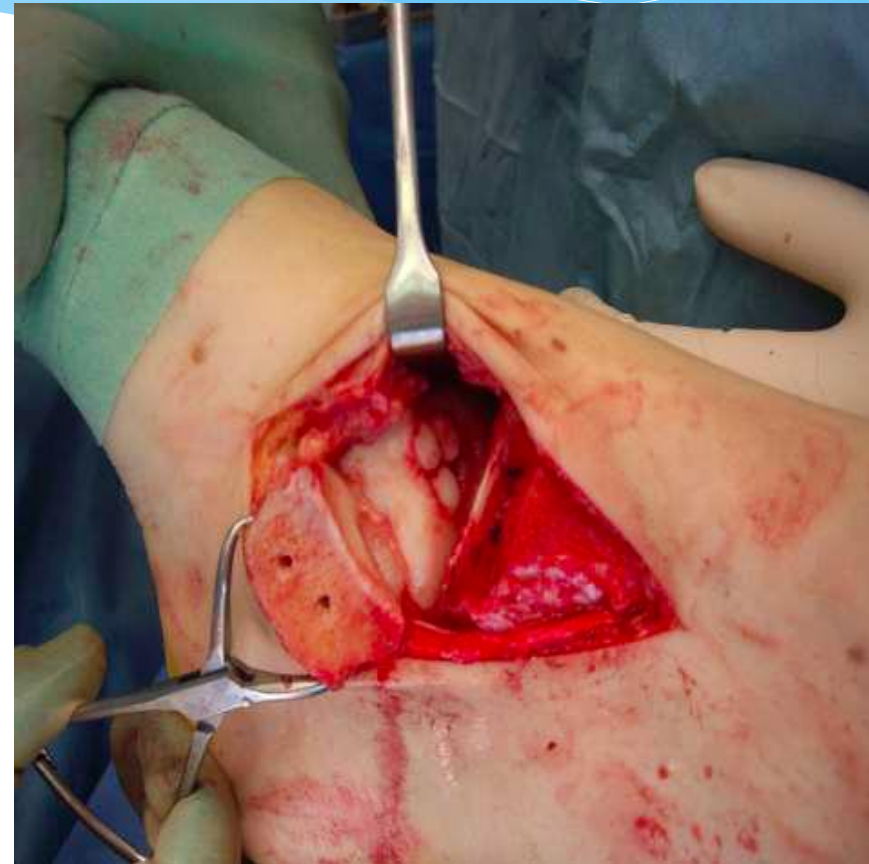
- * Ankle arthroscopy
- * Access articular cartilage
- * Retrograde drilling -



Talar OCD

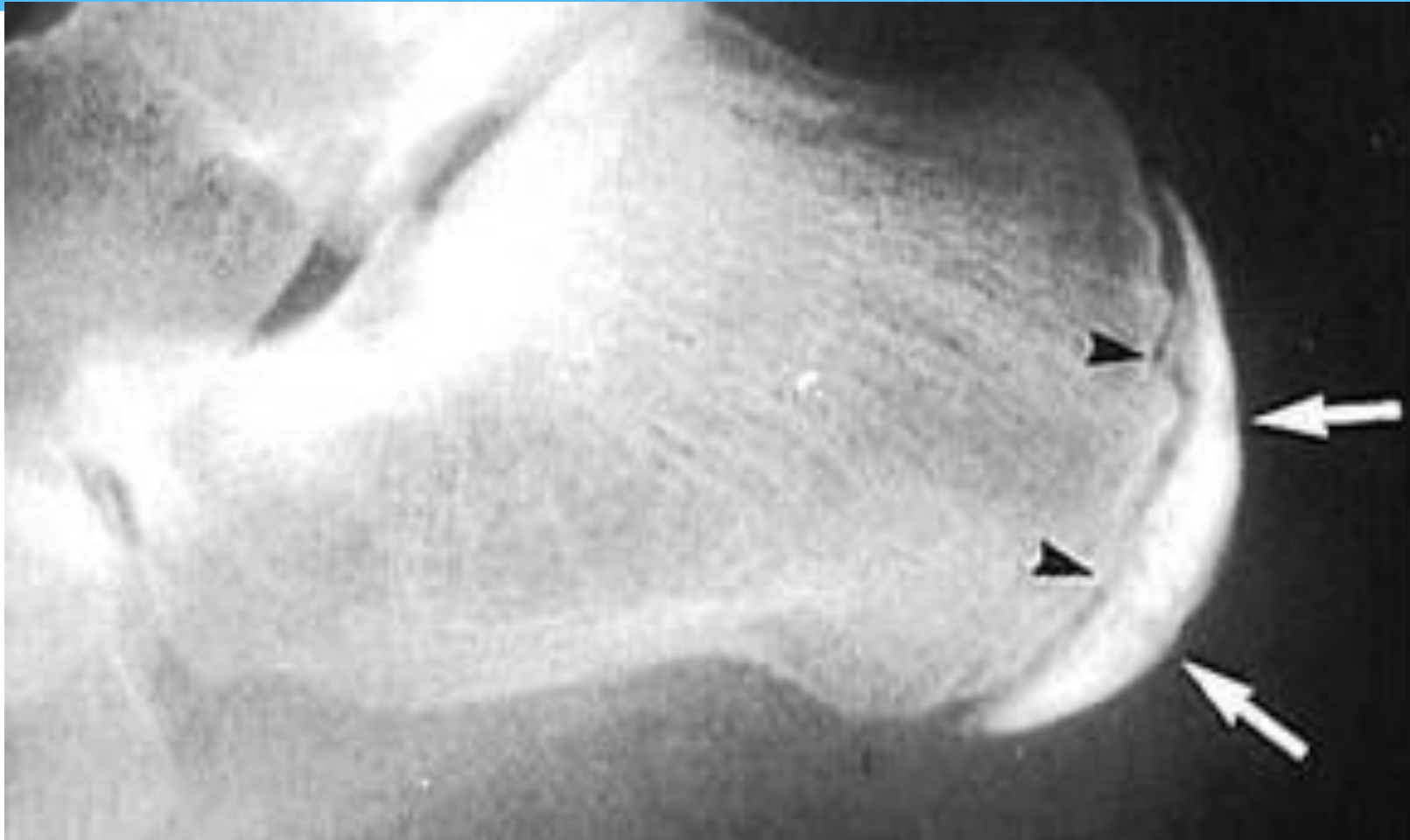


OCD Treatment

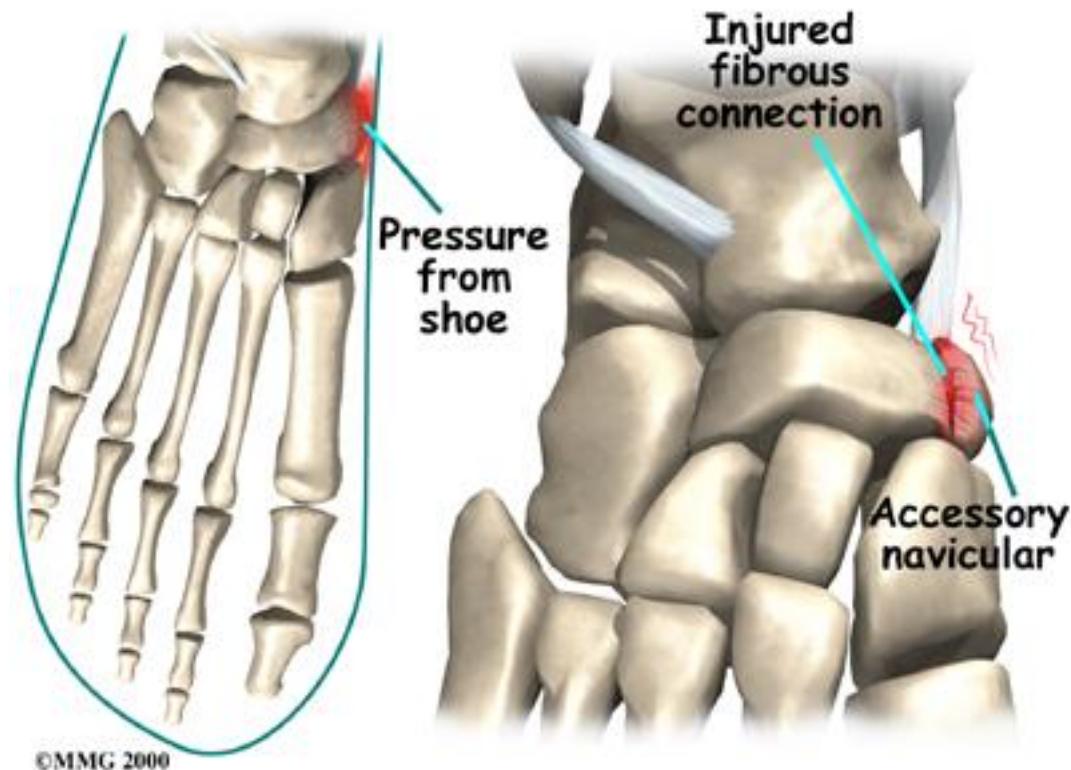


Foot Pain

Sever's Apophysitis

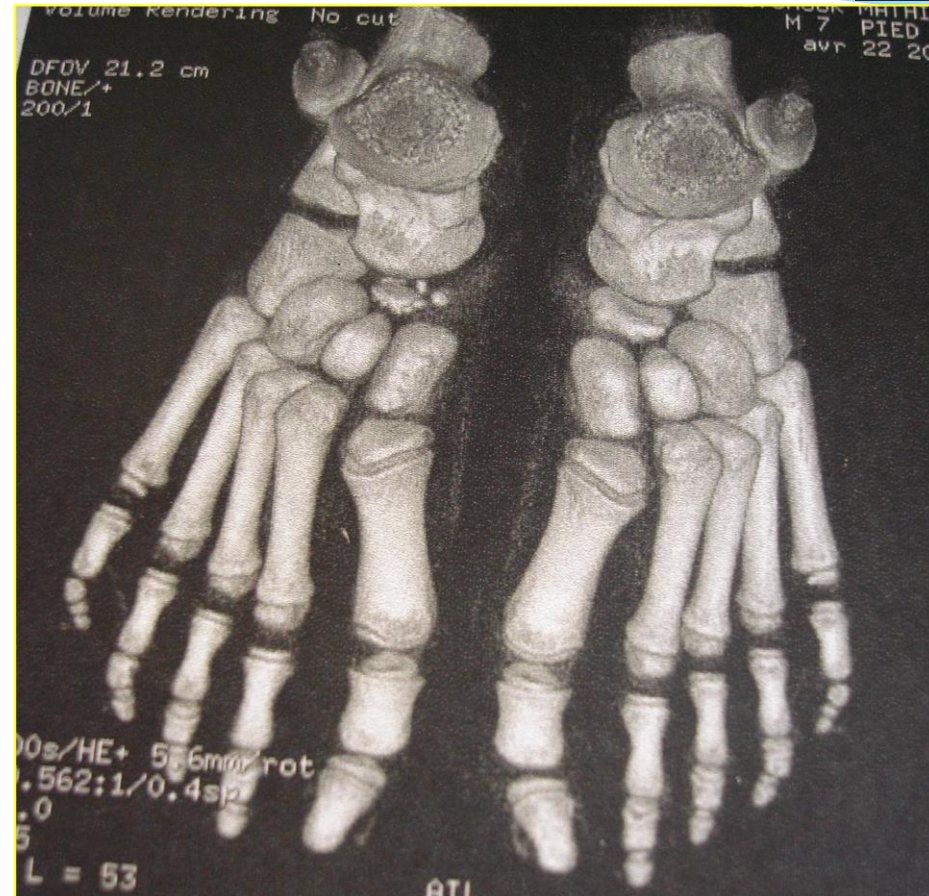


Accessory Navicular



Kohler's

7 ans



Pain Amplification Syndrome

- * Teenage girls
- * Non-specific pain
- * Symptoms disproportionate to signs
- * Autonomic signs
- * High achievers
- * Minor Trauma
- * Multidisciplinary management

Infection



Osteosarcoma



Limb Reconstruction

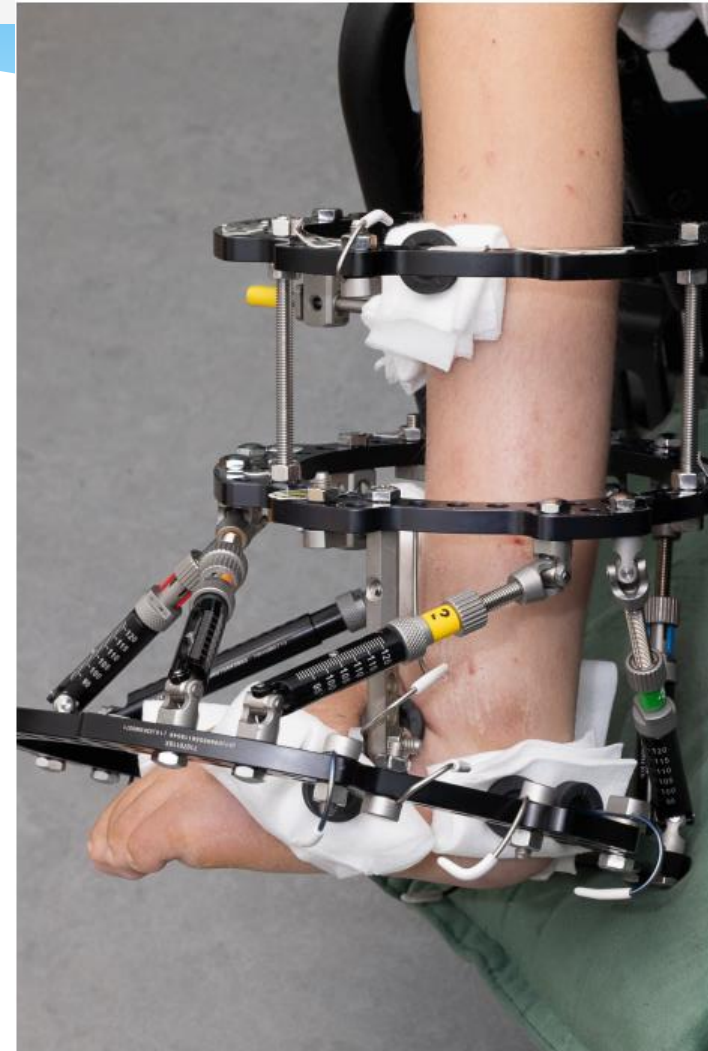
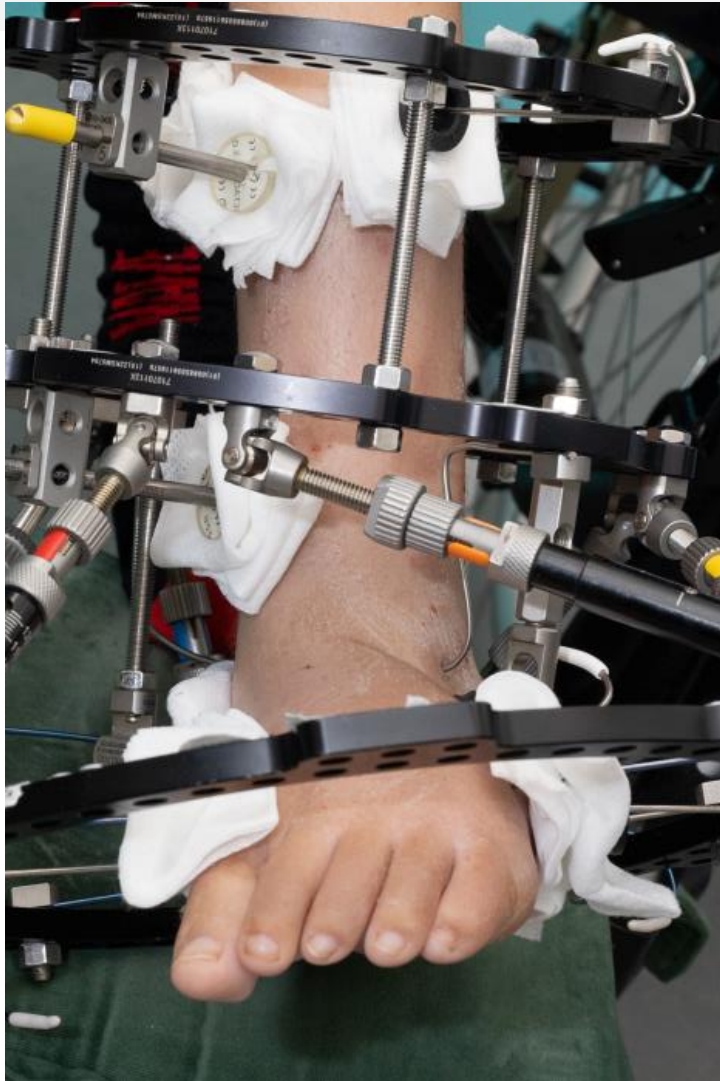
- * Deformity Correction
- * Leg lengthening
- * External Fixator
 - * Ilizarov
 - * Taylor Spatial Frame
- * Intra-medullary

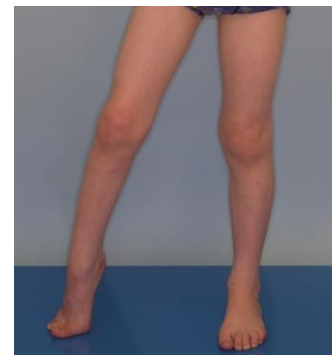












NCH Spinal Theatre

