

CONGENITAL ANOMALIES OF LOWER LIMB- PART 1

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CTEV- CONGENITAL TALIPES EQUINO VARUS



- 1 IN 1000 LIVE BIRTHS.
- AUTOSOMAL DOMINANT TRAITS WITH INCOMPLETE PENETRANCE
- BILATERAL IN 50% CASES.

- WHAT IS THE ETIOPATHOGENESIS?
- WHAT ARE THE DEFORMITIES?
- HOW TO ASSESS SEVERITY?
- HOW TO MANAGE?
- WHAT IS DIFFERENCE BETWEEN NEGLECTED AND UNTREATED CLUBFOOT?
- WHAT IS DIFFERENCE BETWEEN REPLAPSED AND RECURRENT CLUB FOOT?

ETIOPATHOGENESIS

- IDIOPATHIC- SINGLE MUSCULOSKELETAL DEFORMITY
- SYNDROMIC ASSOCIATION: ARTHROGRYPHOSIS

DIASTROPHIC DYSPLASIA

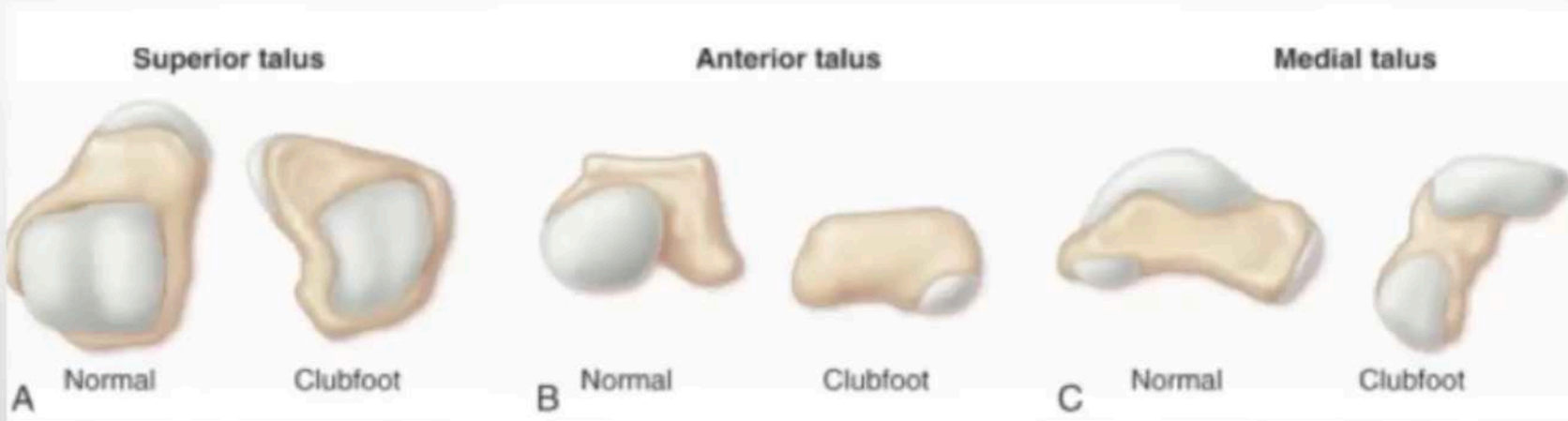
STREETER'S DYSPLASIA

FREEMON SHELDON SYNDROME

MOBIUS SYNDROME

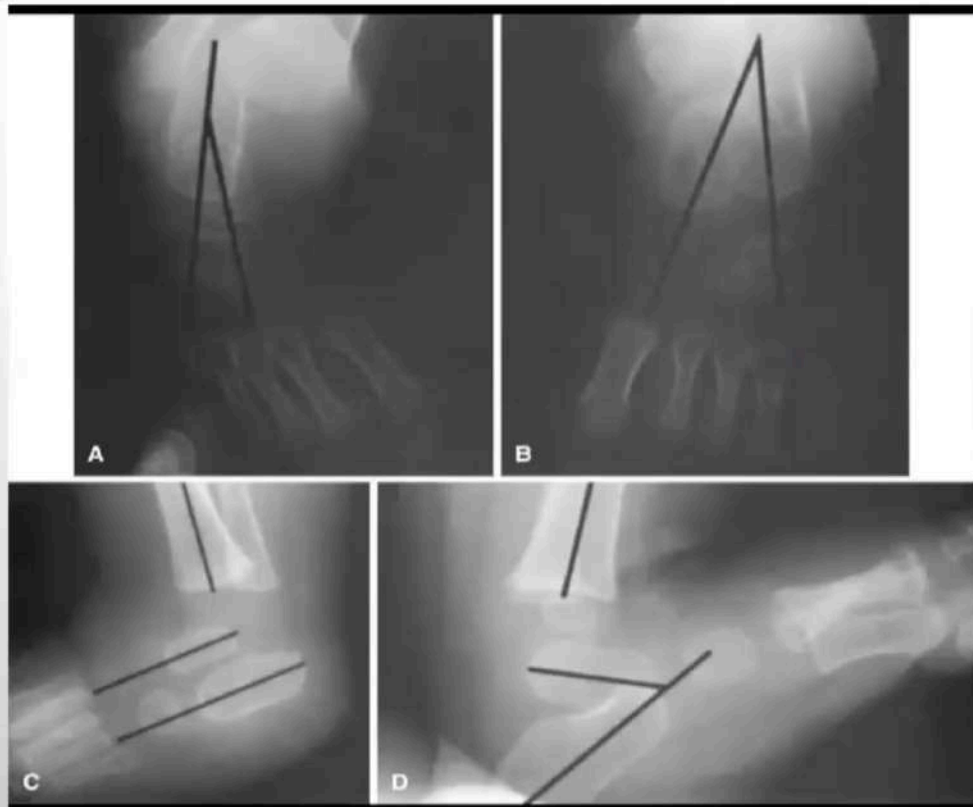
- ARREST IN EMBRYONIC DEVELOPMENT
- INCREASE IN COLLAGEN FIBRES AND FIBROBLASTIC CELLS IN LIGAMENTS AND TENDONS OF FOOT
- GERM PLASM THEORY- CARTILAGE DEFECT IN TALAR ANALGE- DYSMORPHIC NEK- NAVICULAR SUBLUXATION.

DEFORMITIES



JOINT ALIGNMENT	DEFORMING FORCES
TALO- CALCANEAL JOINT	CFL, SUPERIOR PERONEAL RETINACULUM, PERONEAL TENDON SHEATH, POSTERIOR TALO-CALCANEAL LIG.
TALO-NAVICULAR JOINT	DELTOID LIGAMENT,SPRING LIGAMENT, TN CAPSULE, DORSAL TN LIGAMENT, Y LIGAMENT, INFERIOR RETINACULUM, CUBONAVICULAR LIG.
CALANEO-CUBOID JOINT	BIFURCATED Y LIG, LONG PLANTAR LIGAMENT, UBONAVICULAR LIGAMENT, CRUCIATE LIG, DORSAL CC LIG.

RADIOGRAPHY



Normal Range of Radiographic Angles for Comparison to Clubfoot

Talocalcaneal angle

Anteroposterior view: 30-55 degrees

Dorsiflexion lateral view: 25-50 degrees

Tibiocalcaneal angle

Stress lateral view: 10-40 degrees

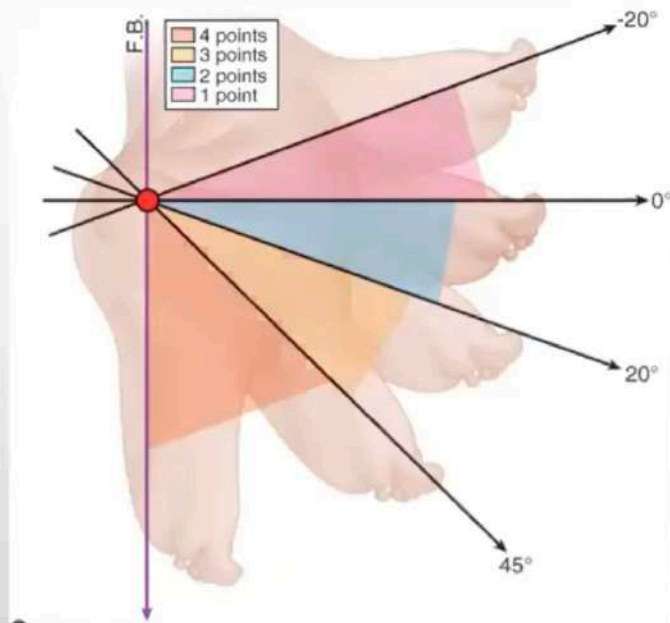
Talus-first metatarsal angle

Anteroposterior view: 5-15 degrees

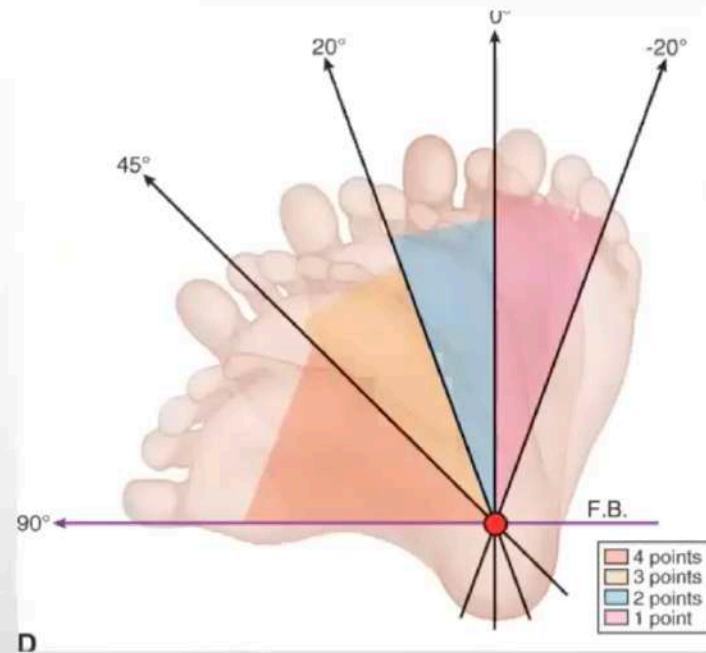
PIRANI SCORING SYSTEM

PHYSICAL EXAMINATION FINDINGS	
Curvature of lateral border of foot	Fibula-Achilles interval (hip flexed, knee extended, foot and ankle maximally corrected)
Severity of medial crease (foot held in maximal correction)	Rigidity of equines (knee extended, ankle maximally corrected)
Severity of posterior crease (foot held in maximal correction)	
Medial malleolar-navicular interval (foot held in maximal correction)	Rigidity of adductus (forefoot is fully abducted)
Palpation of lateral part of head of talus (forefoot fully abducted)	
Emptiness of heel (foot and ankle in maximal correction)	Long flexor contracture (foot and ankle held in maximal correction)

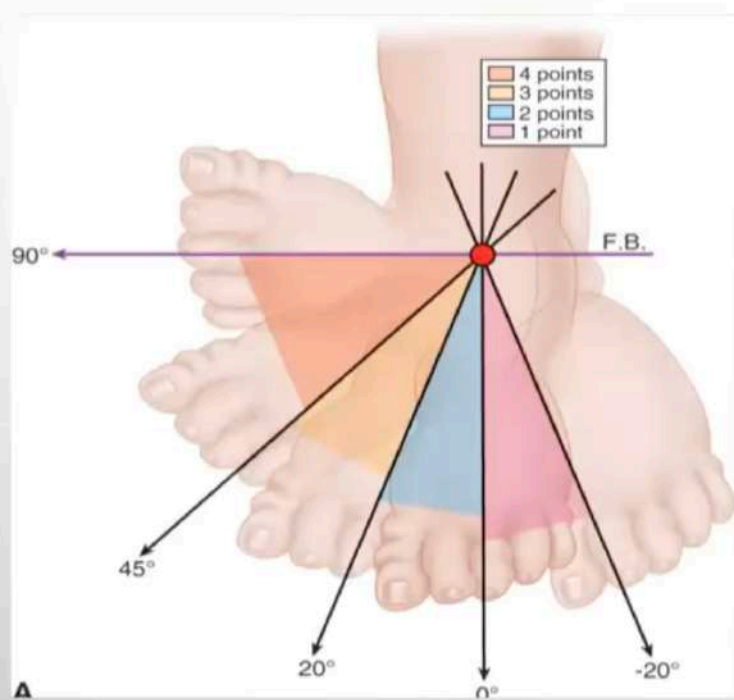
DIMEGLIO ET AL CLASSIFICATION



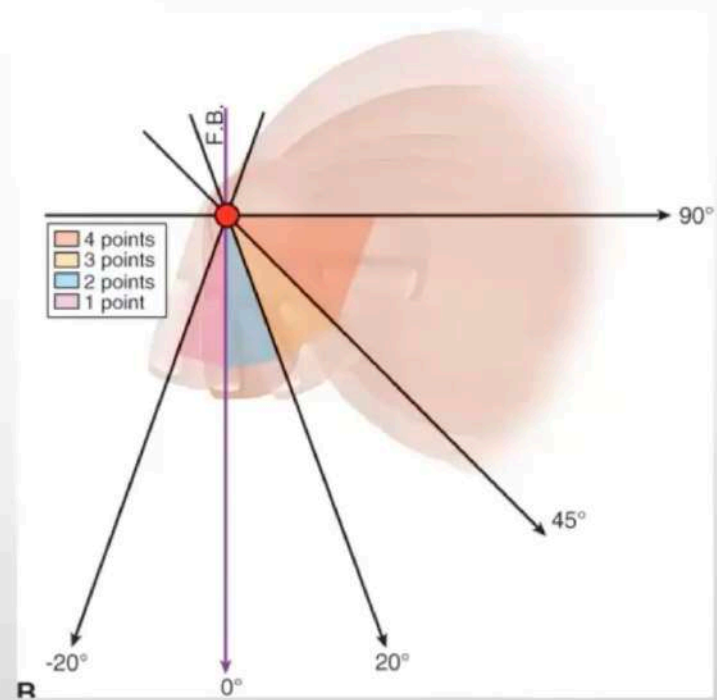
derotation



Adduction



Equinus deviation

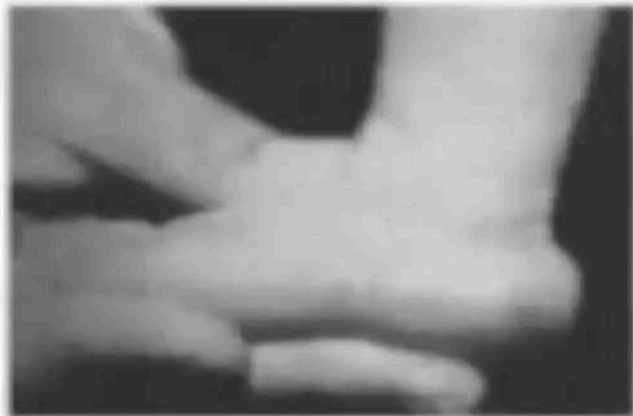


Varus deviation

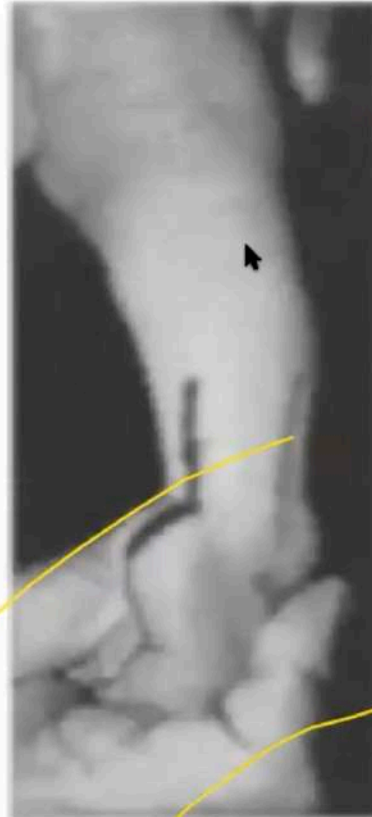
GRADE	TYPE	FREQUENCY (%)	SCORE	REDUCIBILITY
I	Benign	20	1-4	>90% soft-soft, resolving
II	Moderate	33	5-9	>50% soft-stiff, reducible, partially resistant
III	Severe	35	10-14	>50% stiff-soft, resistant, partially reducible
IV	Very severe	12	15-20	<10% stiff-stiff, resistant



Equinus: 3 points



Equinus: 2 points



Varus deviations, reducibility to 0°: 2 points



Deviation of calcaneopedal block: reducibility to -10° : 1 point



Adduction of forefoot, reducibility to 0° : 2 points

The Ponseti Method.....

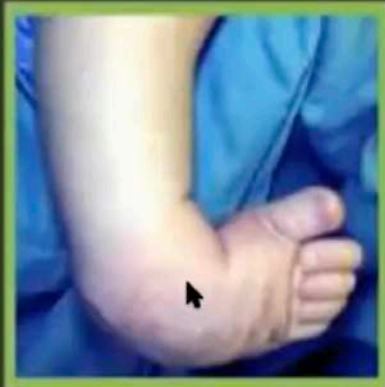


- The **Ponseti method** is a manipulative technique that corrects congenital clubfoot without invasive surgery. It was developed by the late **Dr. Ignacio V. Ponseti** of the University of Iowa, USA in the 1950s

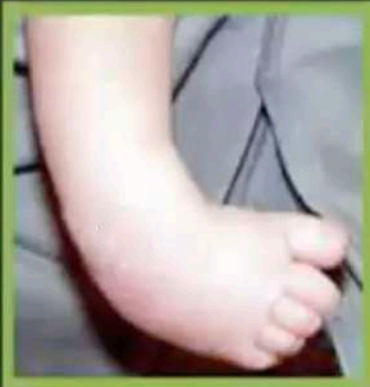
Ponseti technique

- **Weekly Serial manipulation and casting (long leg cast)**
- goal is to rotate foot laterally around a fixed talus
- order of correction (*cave*)
 - midfoot **c**avus
 - forefoot **a**dductus
 - hindfoot **v**arus
 - hindfoot **e**quinus (TAL)

Clubfoot treatment over 4 – 6 weeks



Stage 1



Stage 2



Stage 3



Stage 4



Stage 5



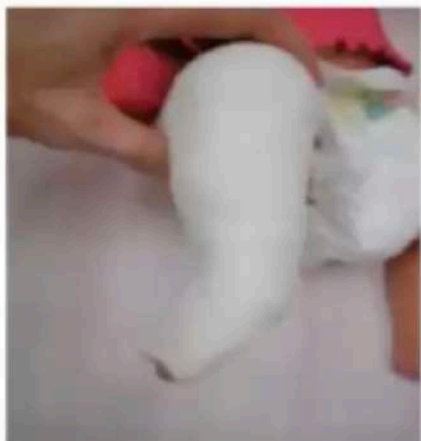




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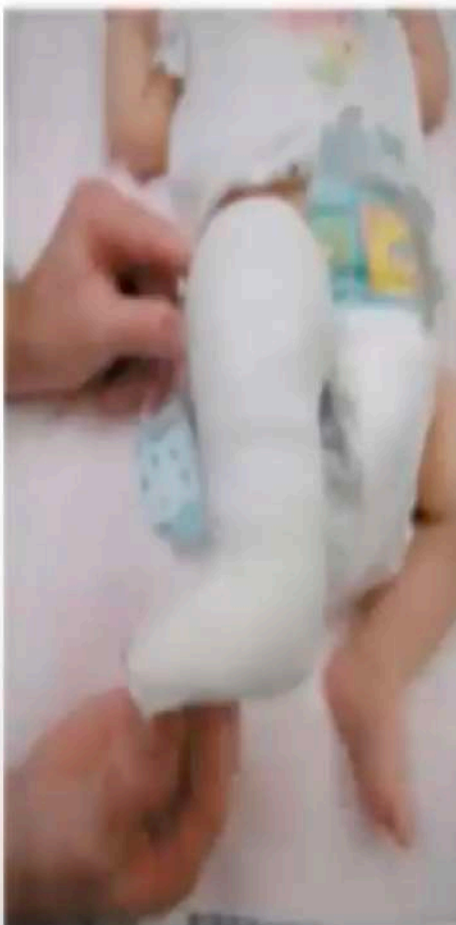
B



C



D

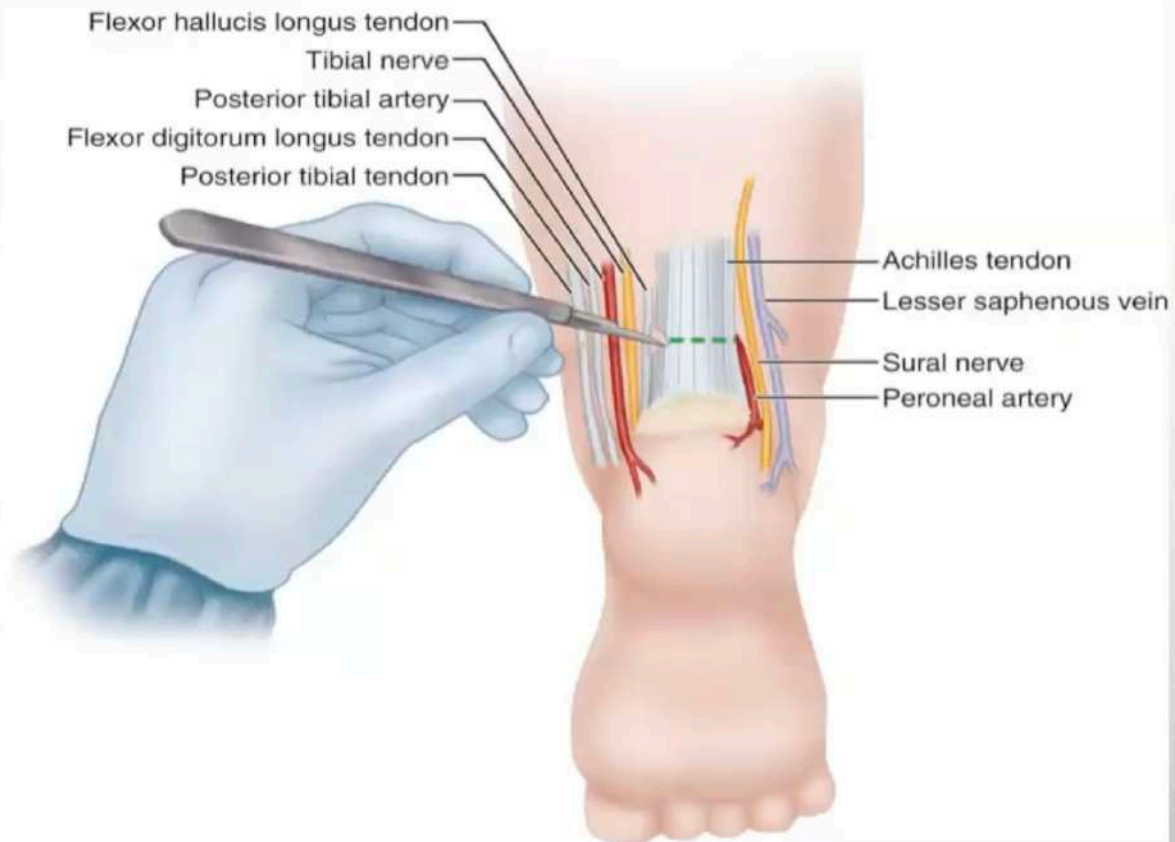


E



F

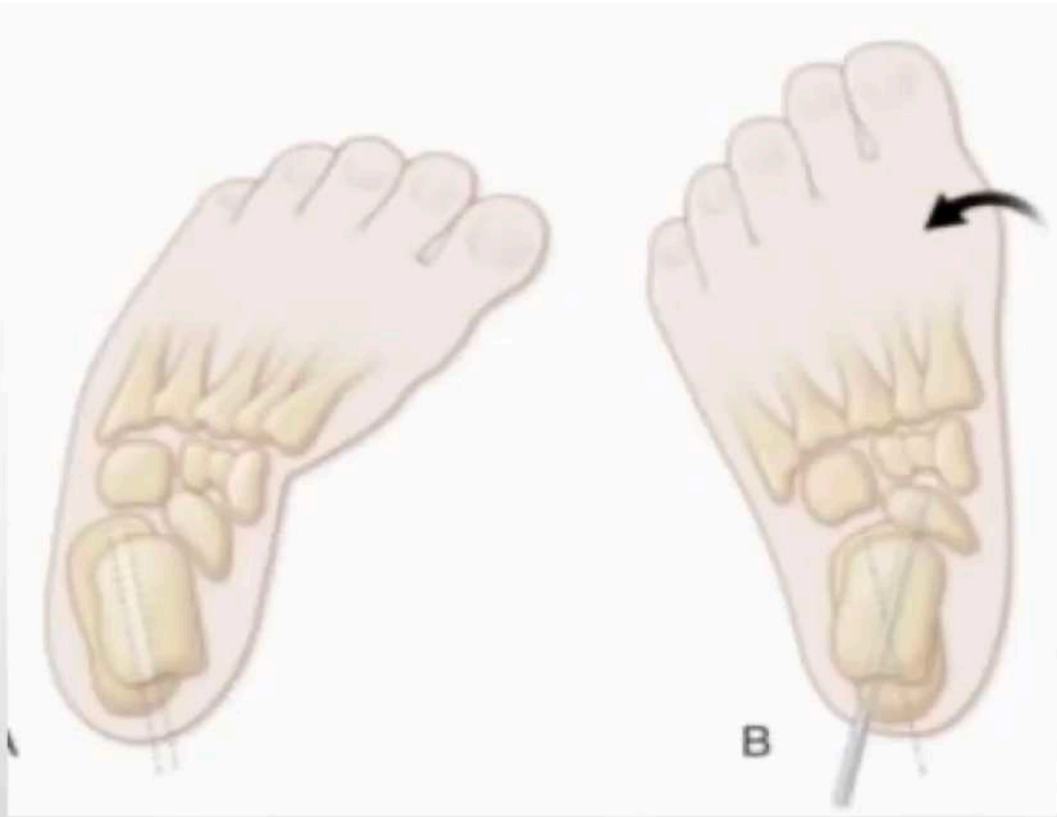
TA TENOTOMY

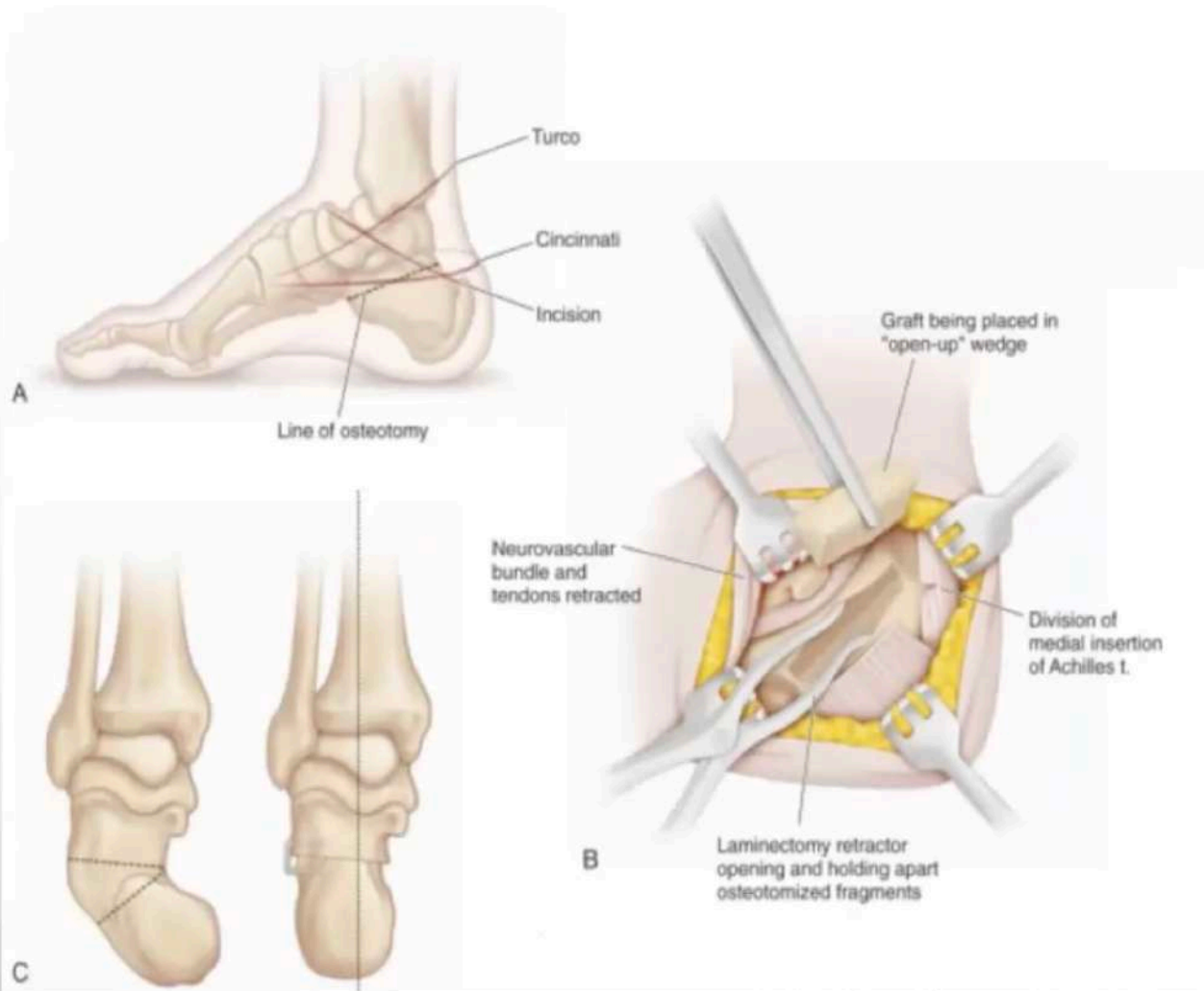




SURGICAL MANAGEMENT

- SOFT TISSUE PROCEDURES
- BONY PROCEDURES







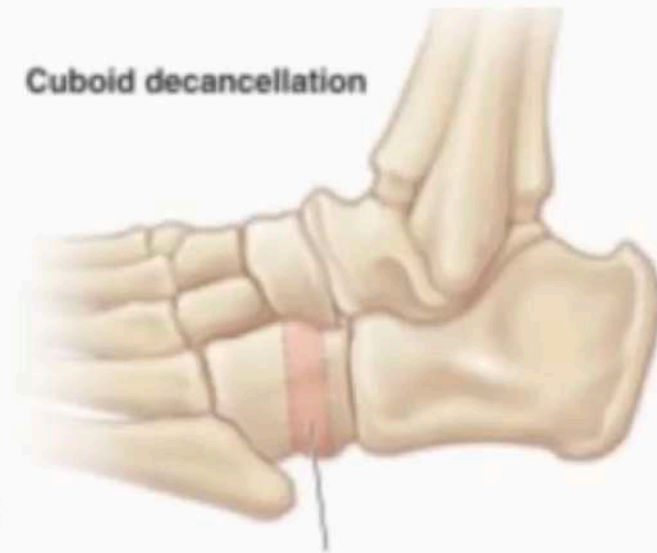
Evans



E

Resection and fusion of
calcaneocuboid joint

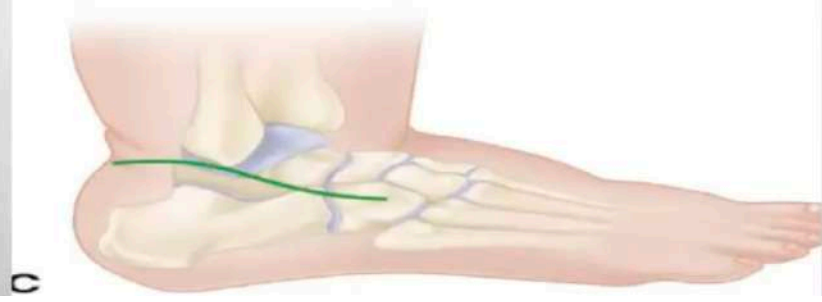
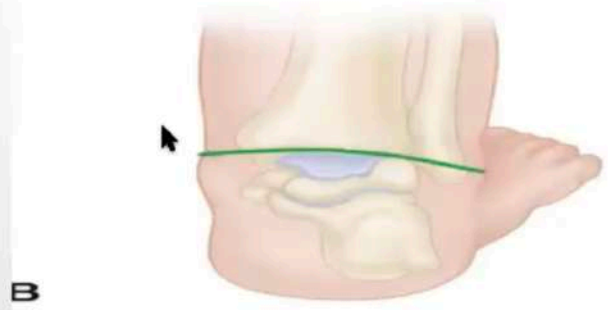
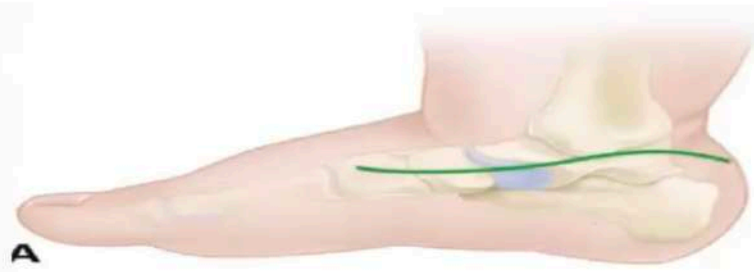
Cuboid decancellation



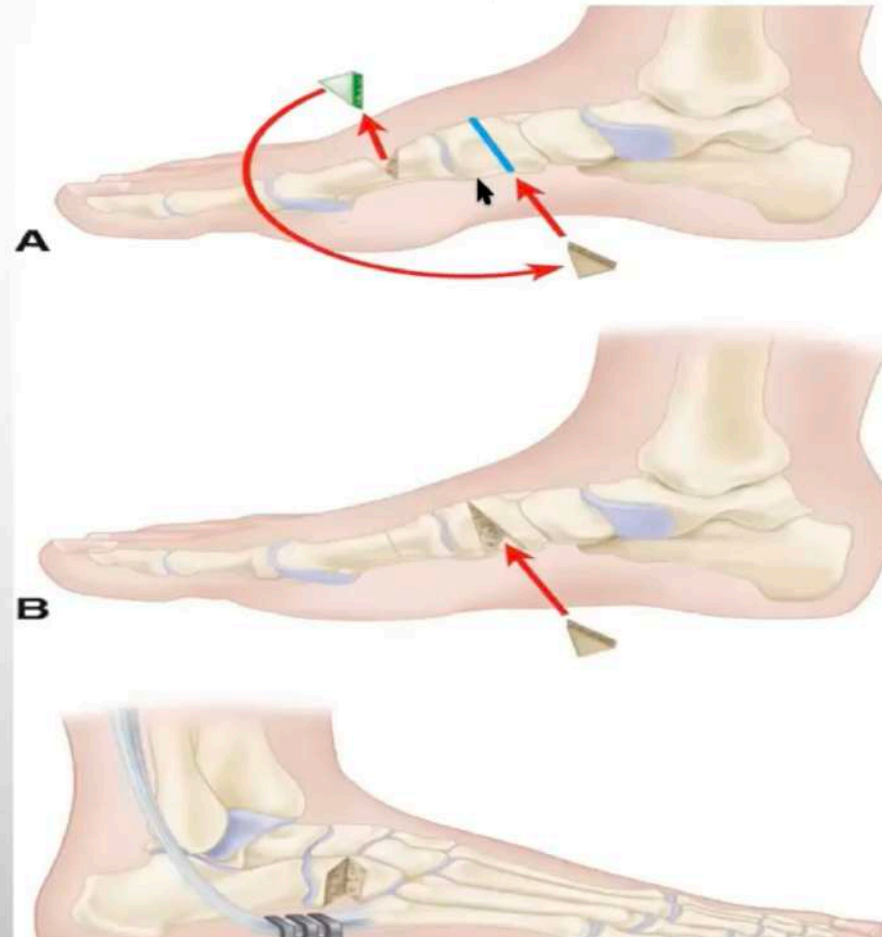
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Wedge to be resected

CINCINATI INCISION



JOINT SPARING SURGERY (MUBARAK & VAN VALIN)



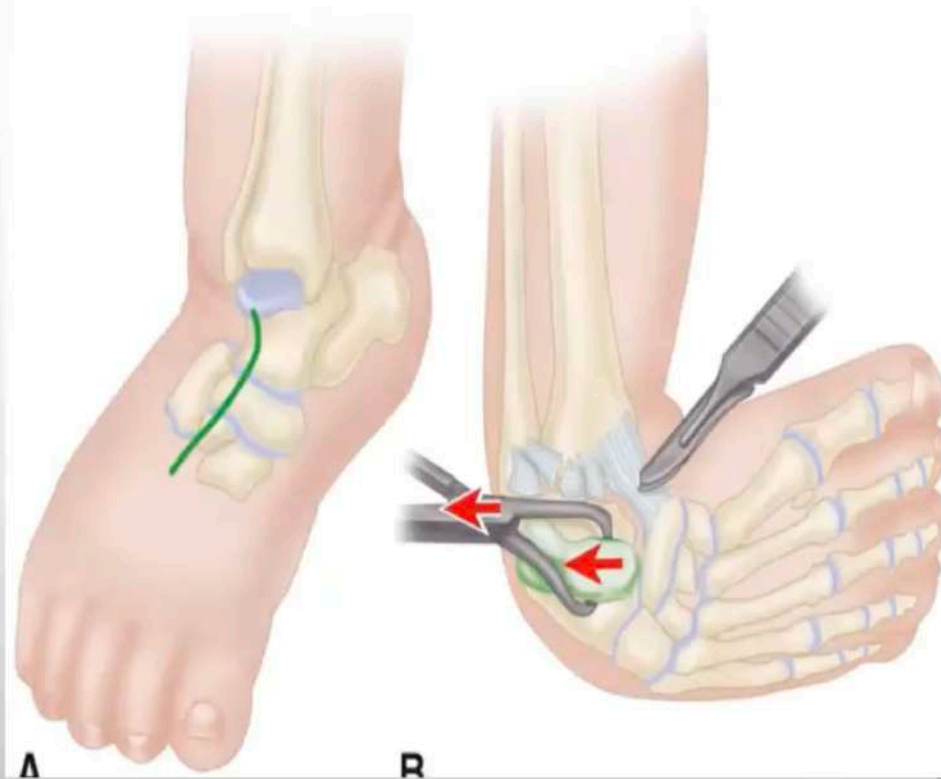




TRIPLE ARTHRODESIS WITH OSTEOTOMY



TALECTOMY- SEVERE CASES

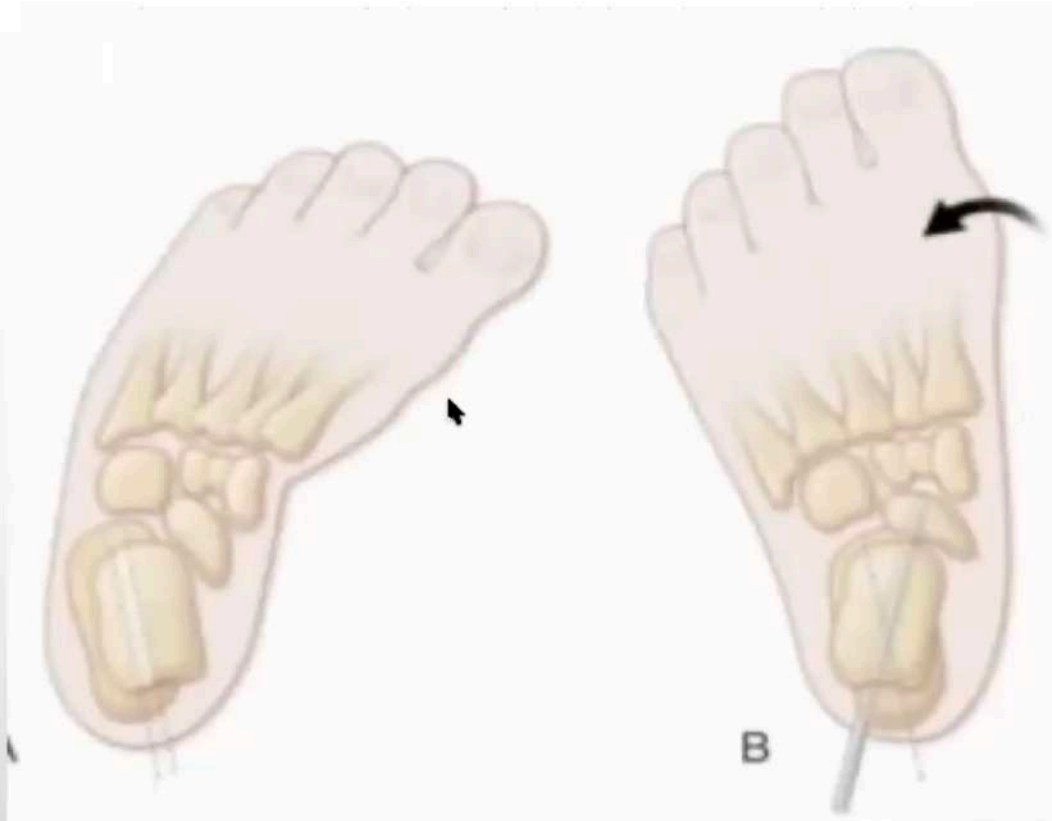




Deviation of calcaneopodal block: reducibility to -10° : 1 point



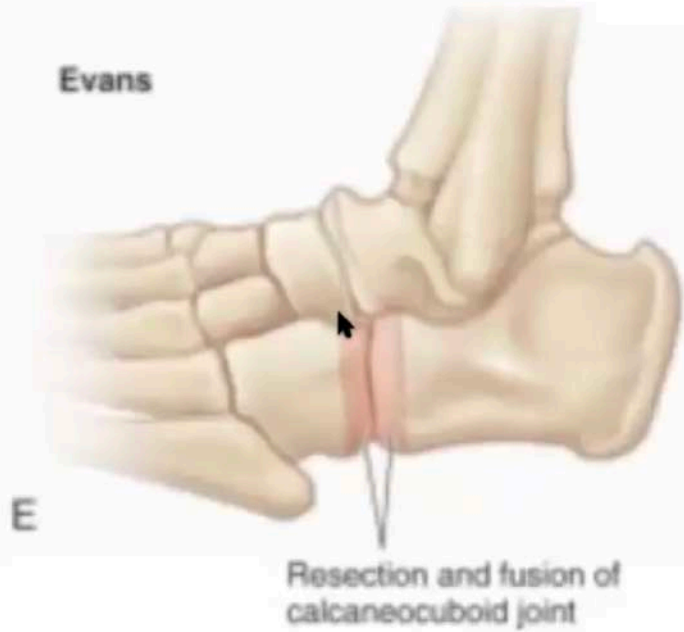
Adduction of forefoot, reducibility to 0° : 2 points



LITCHBLAUS PROCEDURE



Evans



Cuboid decancellation

