

course with practical sessions

**KEMENTERIAN KESIHATAN
MALAYSIA**Liverpool, August 1st 2022

Dear Prof. Nazri Mohd Yusof,

On behalf of the Malaysian Ministry of Health, Malaysian ASAMI, and TST, I am honoured to have you attending as Faculty our Masterclass Symposium on "Clinical Tips & Tricks in Limb Reconstruction", which will take place in Kuala Lumpur on 26-27 September 2022.

Your knowledge and expertise will be an invaluable contribution to the success of our educational event. I am confident that this Symposium will be a unique opportunity to establish contacts for future professional development training programmes in the ASEAN region.

TST has the pleasure to take care of your registration fee for this Symposium.

Moreover, please let us know if you need accommodation at the Concorde Hotel Kuala Lumpur <https://kualalumpur.concordehotelsresorts.com/> during the Symposium. In the affirmative, we kindly ask you to inform us on which night(s).

For any queries about the event, please don't hesitate to contact us at any time.

Looking forward to a productive and successful meeting in Kuala Lumpur,

Kindest regards

Selvadurai Nayagam
Masterclass Symposium Chairman

ANKLE ARTHRODESIS

Prof Dr Nazri bin Mohd Yusof
Advanced Trauma and Limb Reconstructive Surgery
Department of Orthopaedic, Traumatology and Rehabilitation
Kulliyyah of Medicine
International Islamic University of Malaysia

CLINICAL TIPS AND TRICKS IN LIMB RECONSTRUCTION

A Masterclass Symposium in treatment strategies, techniques and decision-making

Kuala Lumpur, 26-27 September 2022

INTRODUCTION

Ankle fusion can give high rates of patient satisfaction with a **functional gait** pattern and excellent **relief** of **ankle pain**

Patient selection is KEY

Not a last resort choice. It should be a preferred choice for the patient GIVEN the indications.

INDICATION

- Pain
 - Consequent to joint destruction from whatever aetiology
- Deformity
 - Secondary to joint damage
- Instability
 - Particularly if associated with moderate to severe joint damage

ADVANCED INDICATIONS

- Failure
 - Previous joint preserving procedures for the same symptoms
 - Previous arthroplasty
- Chronic septic arthritis with osteomyelitis

ANKLE ARTHRODESIS

Technical tips

ARTHRODESIS POSITION

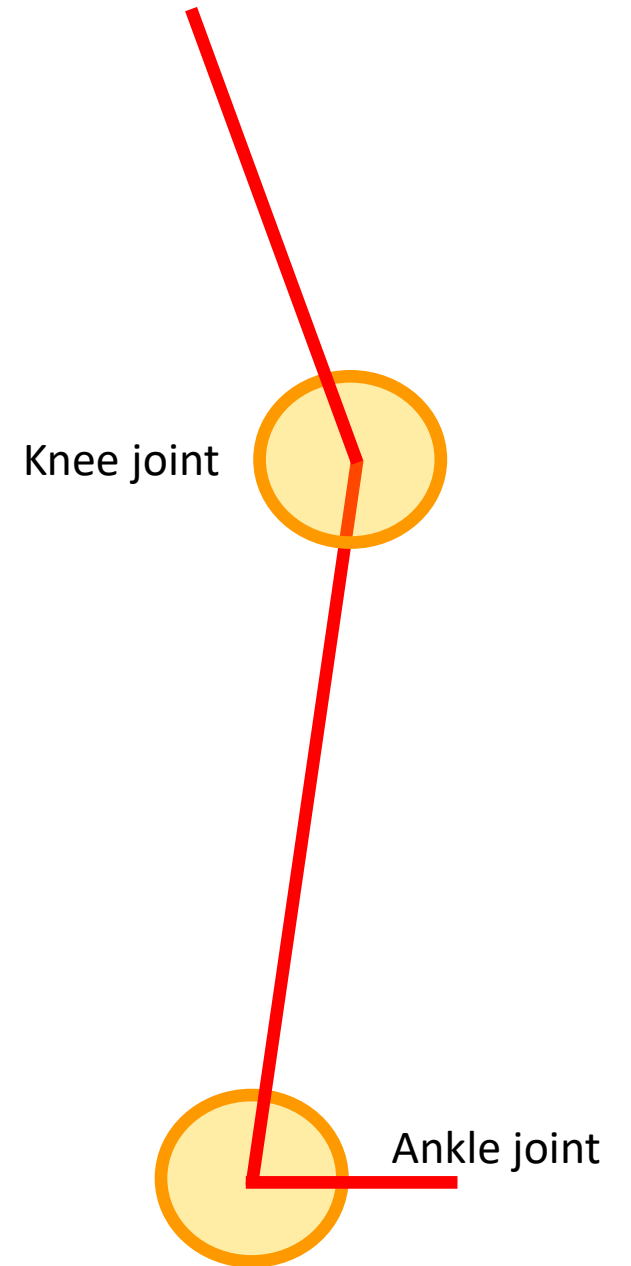
0 – 5° plantarflexion

5° valgus

5° external rotation

Why PLANTIGRADE or SLIGHT PF

- If the ankle is positioned in slight DF, the patient has to flex the knee to stand
- Not only is this uncomfortable, but to keep upright the Quadriceps muscle has to contract continuously



CHECK for adequate posterior translation



Problems to consider

- Fusion rate (60-100%)
- Pain from other sources
- **Functional limitations** for some activities (explain to patients)
 - Walking uneven ground
 - Climb, descent stairs
 - Driving
- Shoe modification for some (rocker sole)
- Degeneration of adjacent joint (more so radiological)

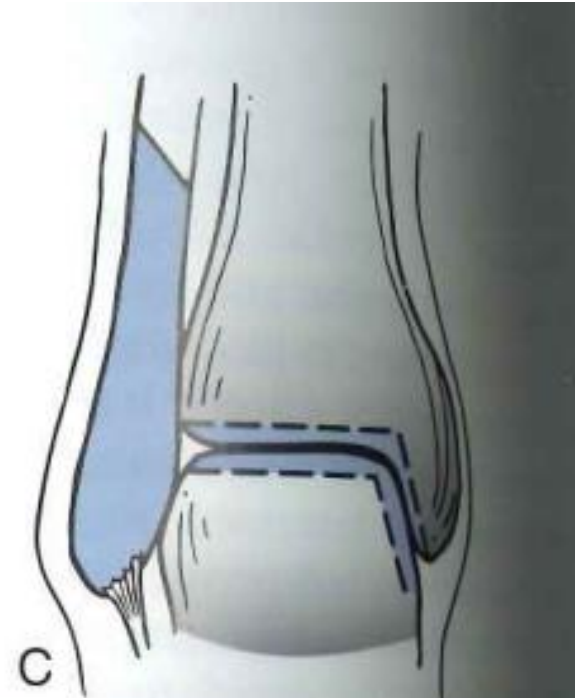
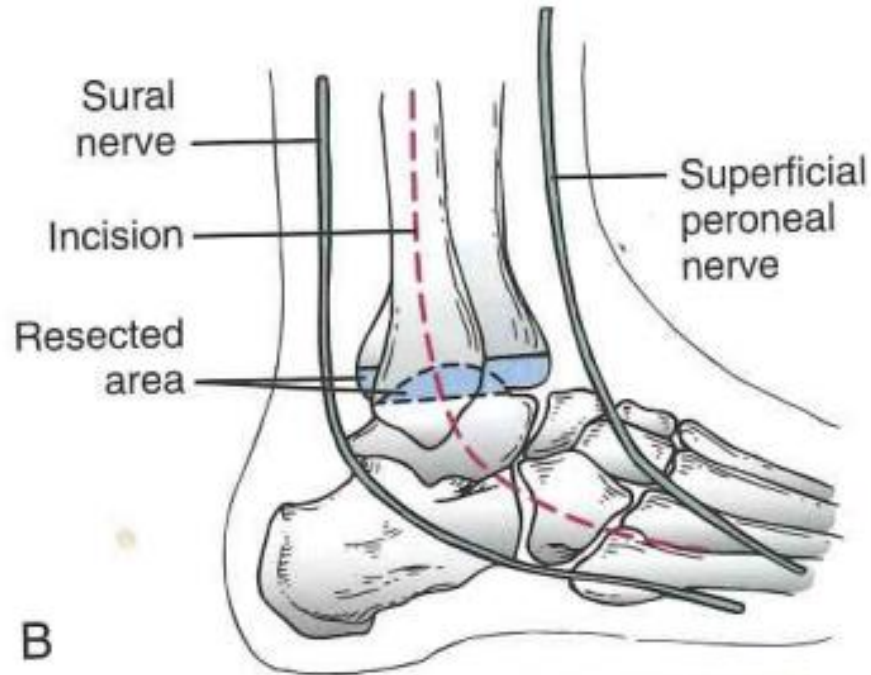
Technical tips

- Patient position
 - Supine with sandbag to rotate limb to neutral
- Limb exposure after draping
 - Ensure patella visible for rotation checks

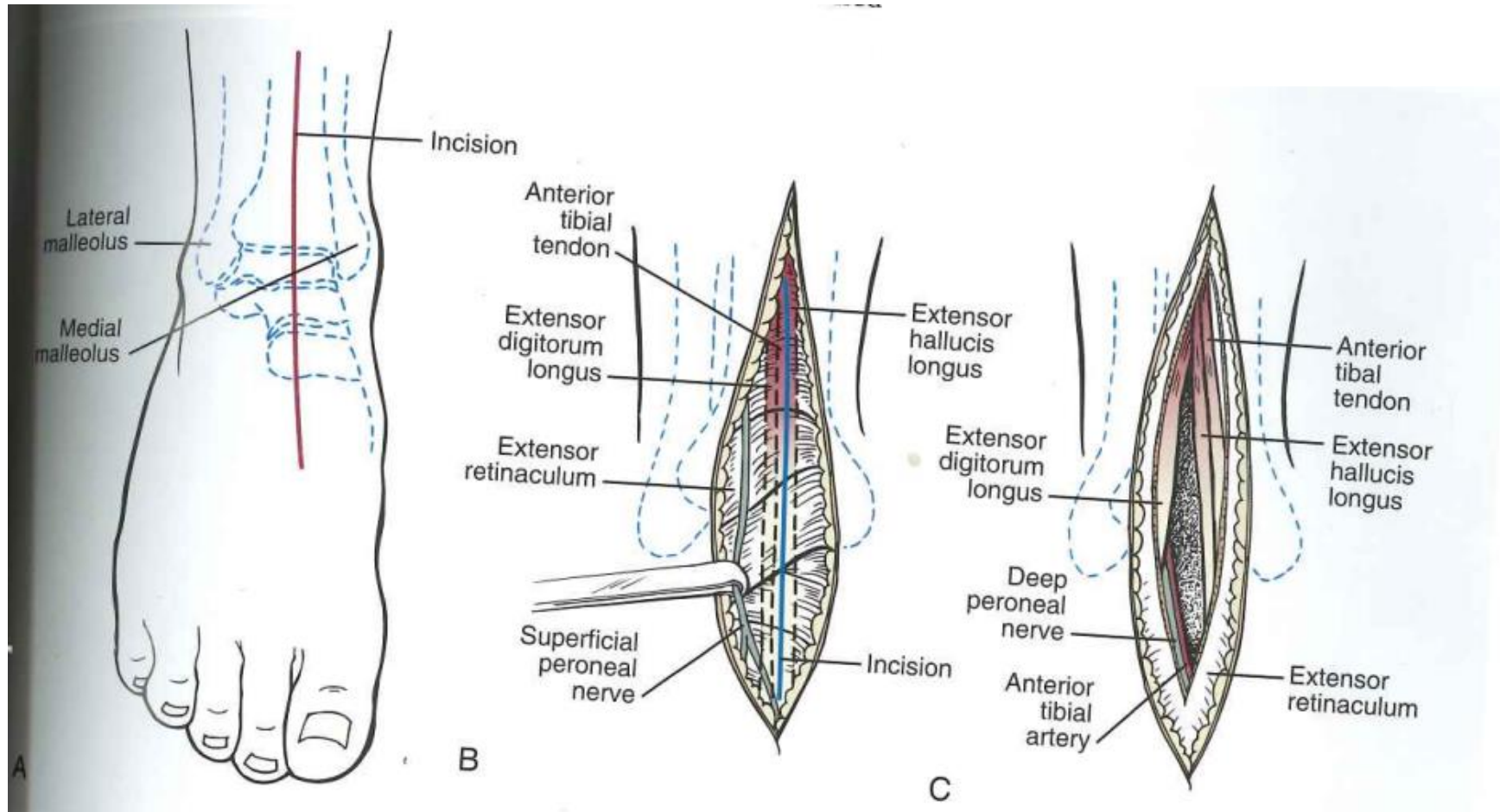
Approach

- Lateral
 - Direct with fibula resection
 - +/- small medial incision for medial malleolus removal
- Anterior
 - Classic approach – good for anterior internal fixation
- Posterior
 - Less common – more often for tibiocalcaneal fusion

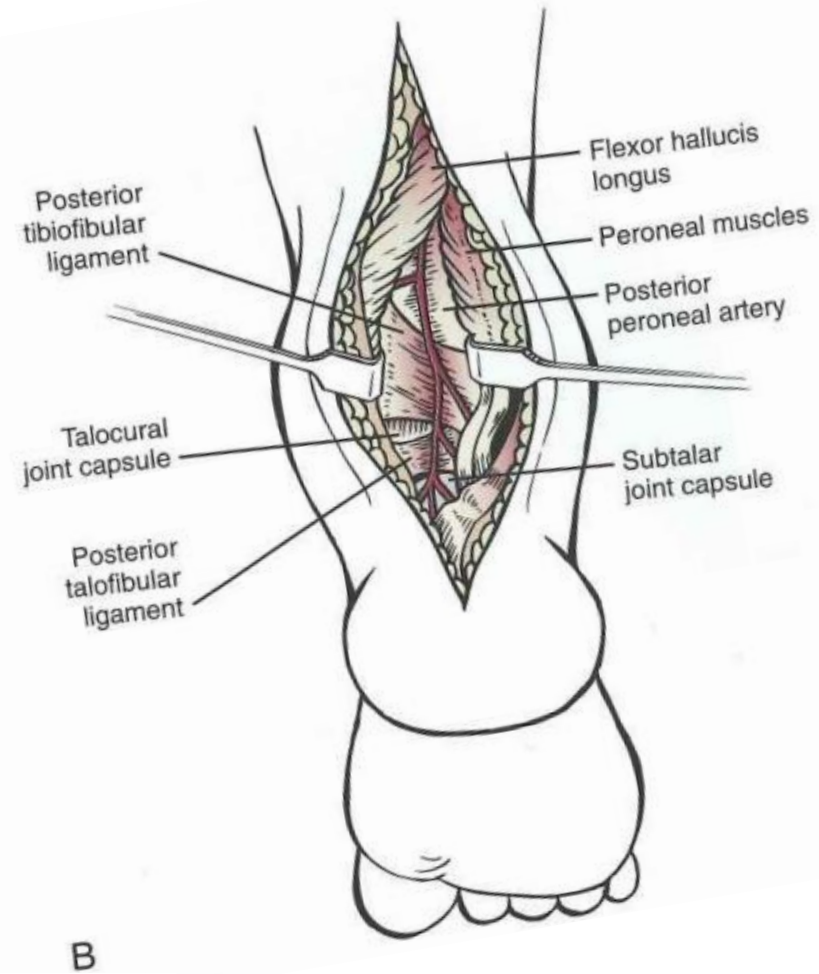
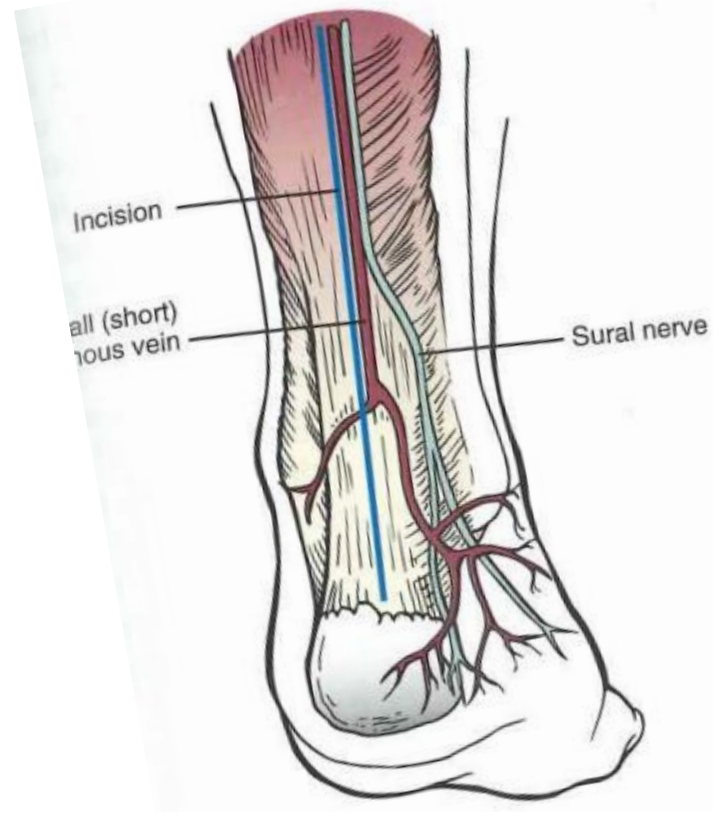
Lateral approach (Fibular osteotomy)



Anterior approach (Direct approach)



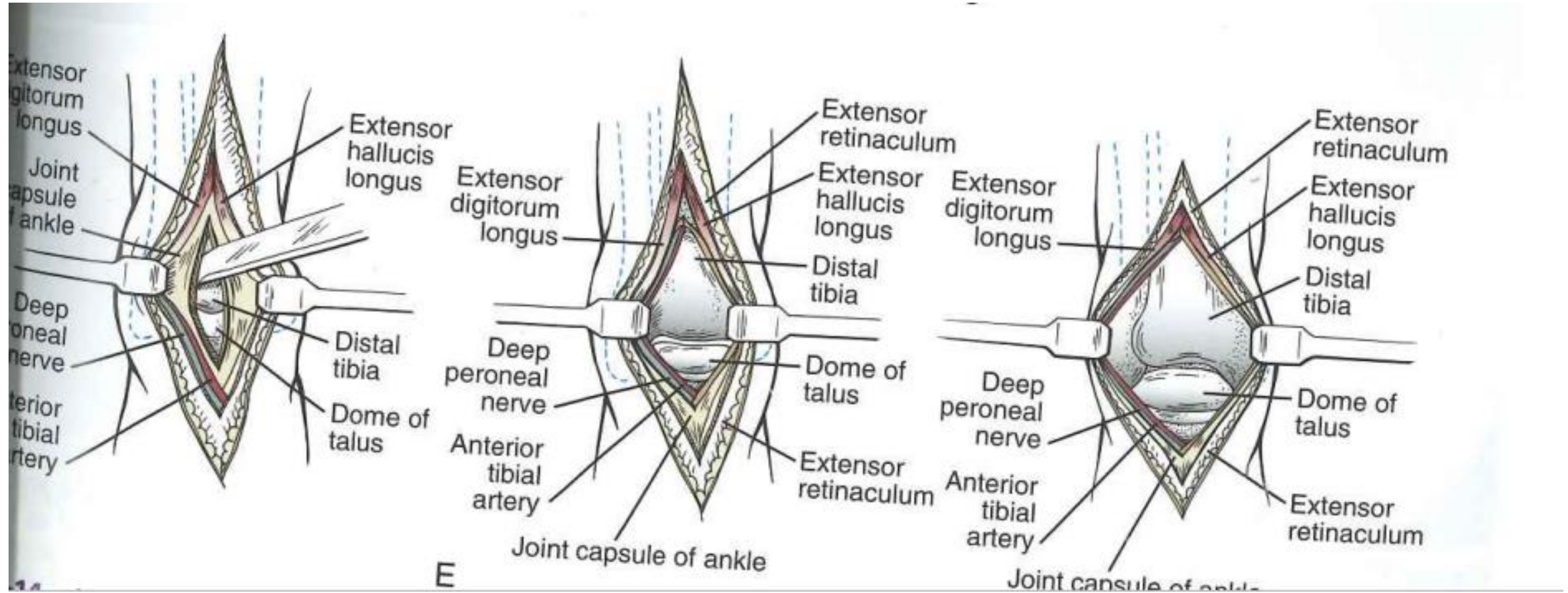
Posterior approach



Joint surface exposure and preparation

- Subperiosteal exposure and meticulous removal of ankle capsule
- Step-by-step **removal of articular cartilage** to subchondral or cancellous depth
- Petal (do not drill) the exposed subchondral bone before coaptation

Clear visualisation of articular surface



Four ESSENTIAL steps in ANY arthrodesis

- Exposure
- Preparation
- **Coaptation
(compression)**
- Fixation

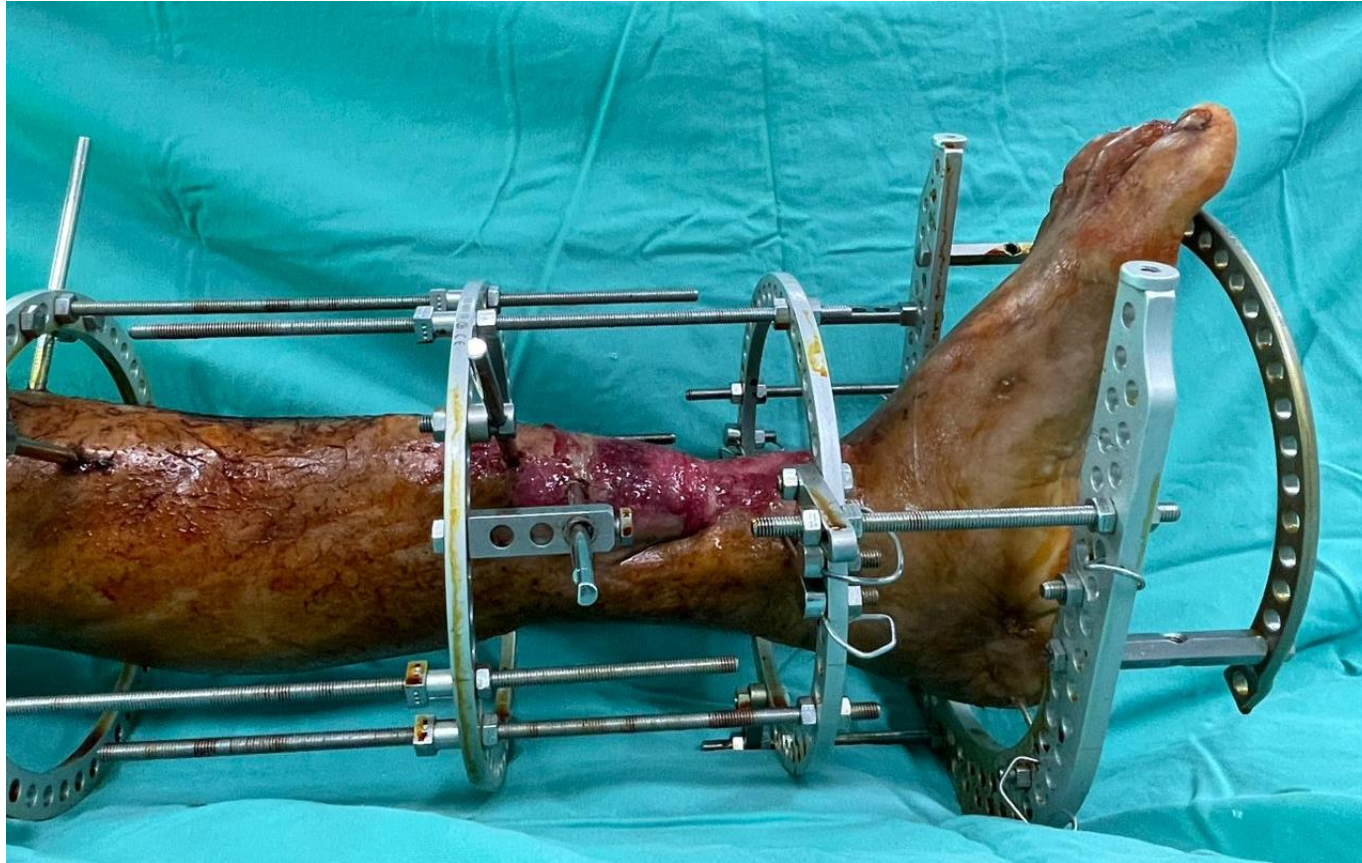
You CANNOT proceed to the next
step UNLESS the previous step is
COMPLETE and done WELL

Fixation

All choices CAN be valid if the indications are right

- Plate
- Screws
- Nail – this ALWAYS sacrifices the subtalar joint!
- External fixator (circular)





Technical tips for Circular frame arthrodesis

Reducing patient comorbidities

Smoking

Diabetes control

NSAID / Steroid use

Vascularity

Technical tips for Circular frame arthrodesis

Reducing surgeon comorbidities

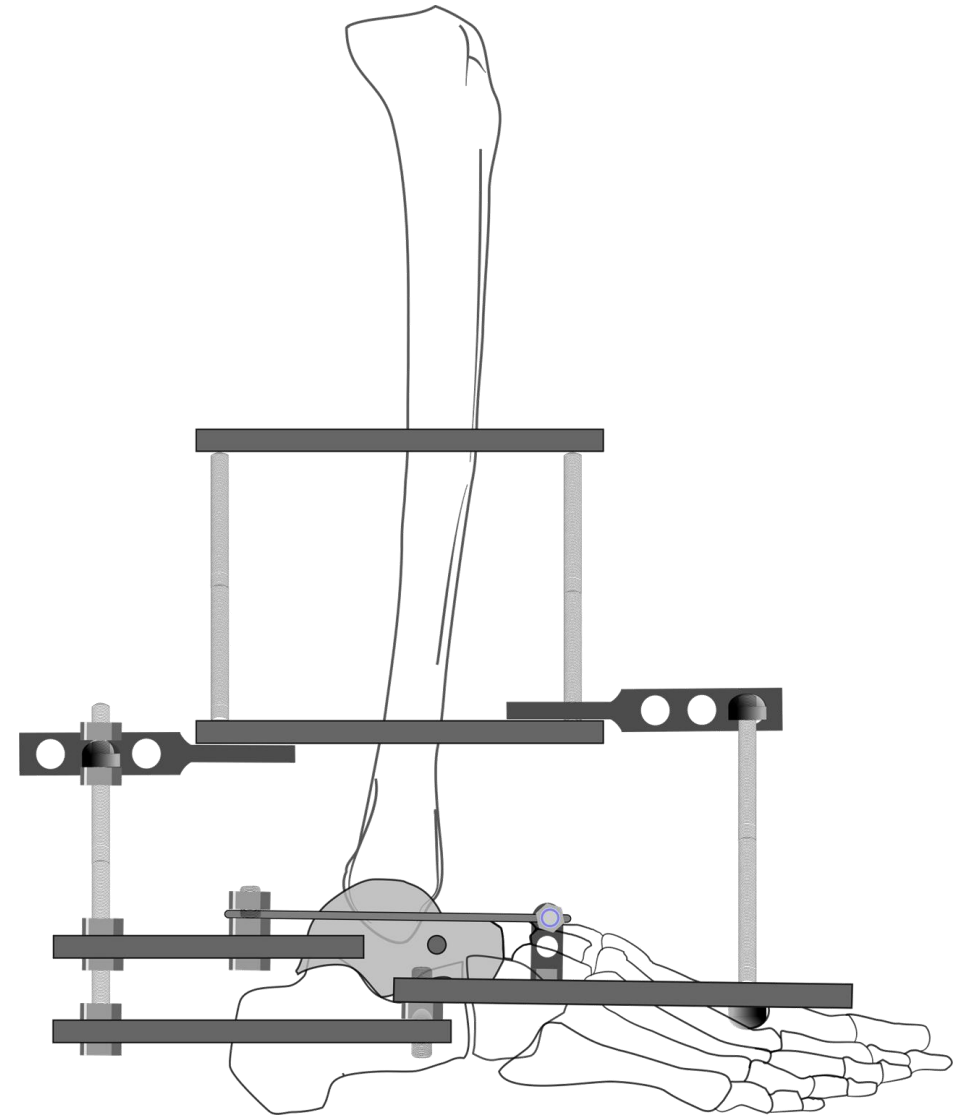
Attention to detail in exposure, preparation, coaptation and fixation

ALWAYS check there is GOOD CONTACT in coaptation

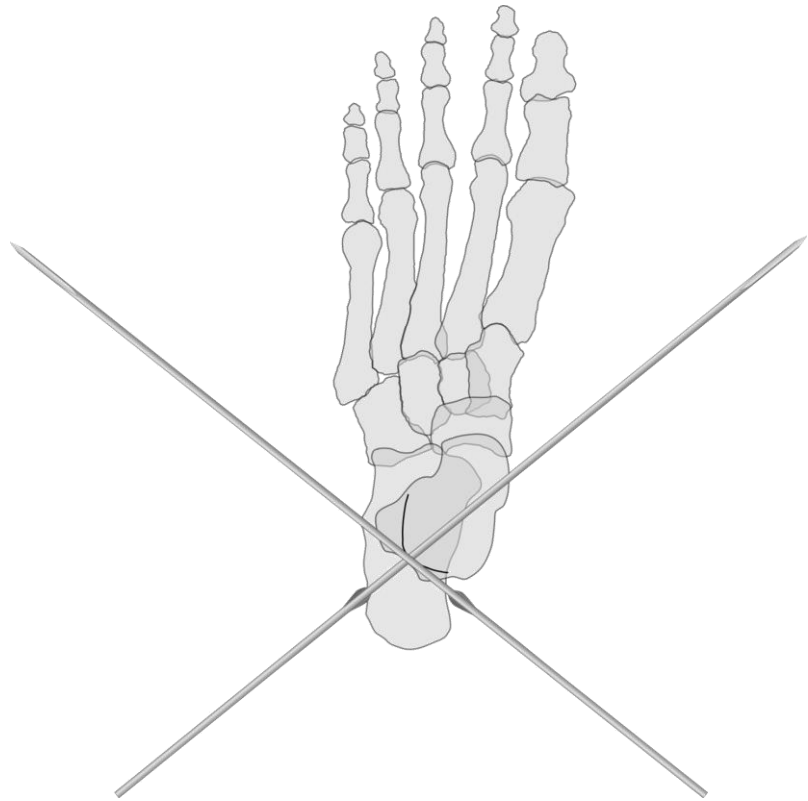
Fixation must be with COMPRESSION

Basic frame assembly

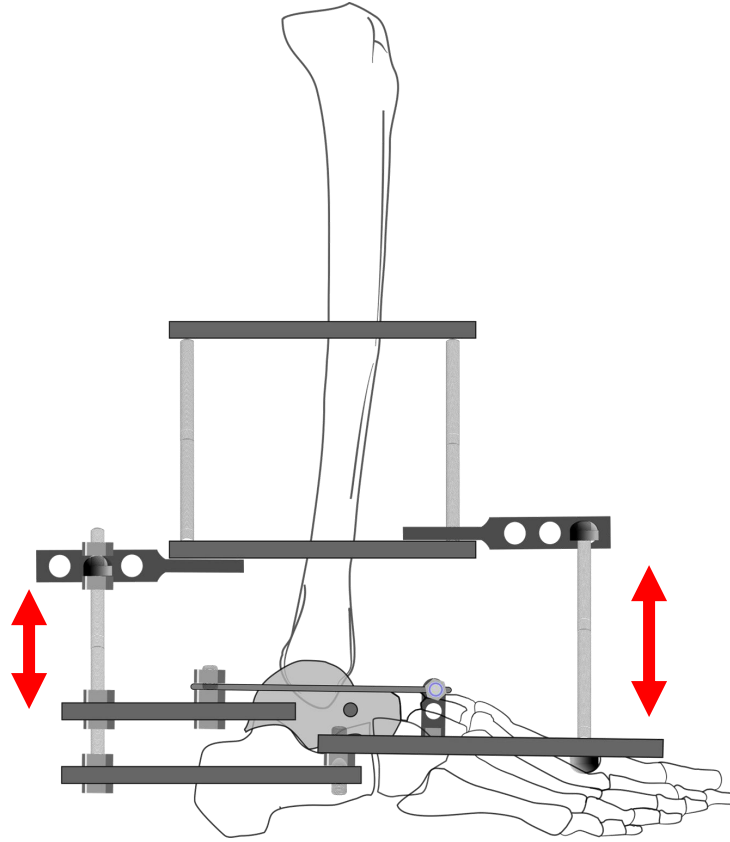
1. Double tibial ring for proximal segment
2. Double distal foot ring – calcaneum / forefoot – for distal segment
3. Additional ring for talus wires



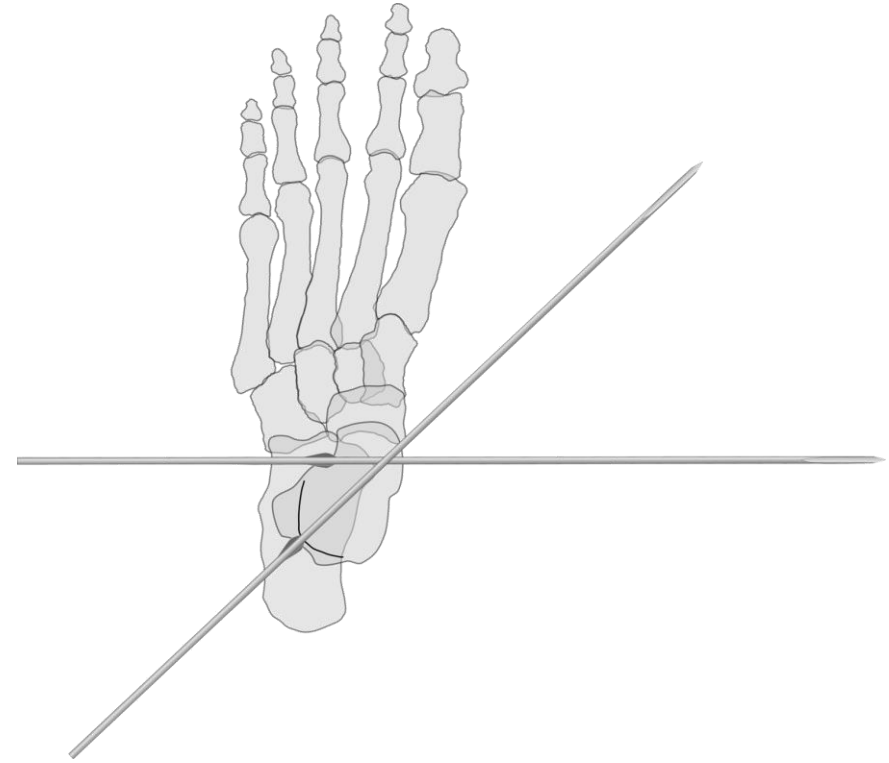
Why talar wires?



Calcaneal wires



Talar wires



To PREVENT subtalar compression when you compress the ankle

After care

- Manage postoperative swelling for the first 2 weeks
- Encourage WB after 2 weeks
- Obtain CT scans to confirm bridging union at 3-4 months
- Cast protection for 4 weeks after frame removal

Acknowledgement

Dr Silvadurai Nayagam

