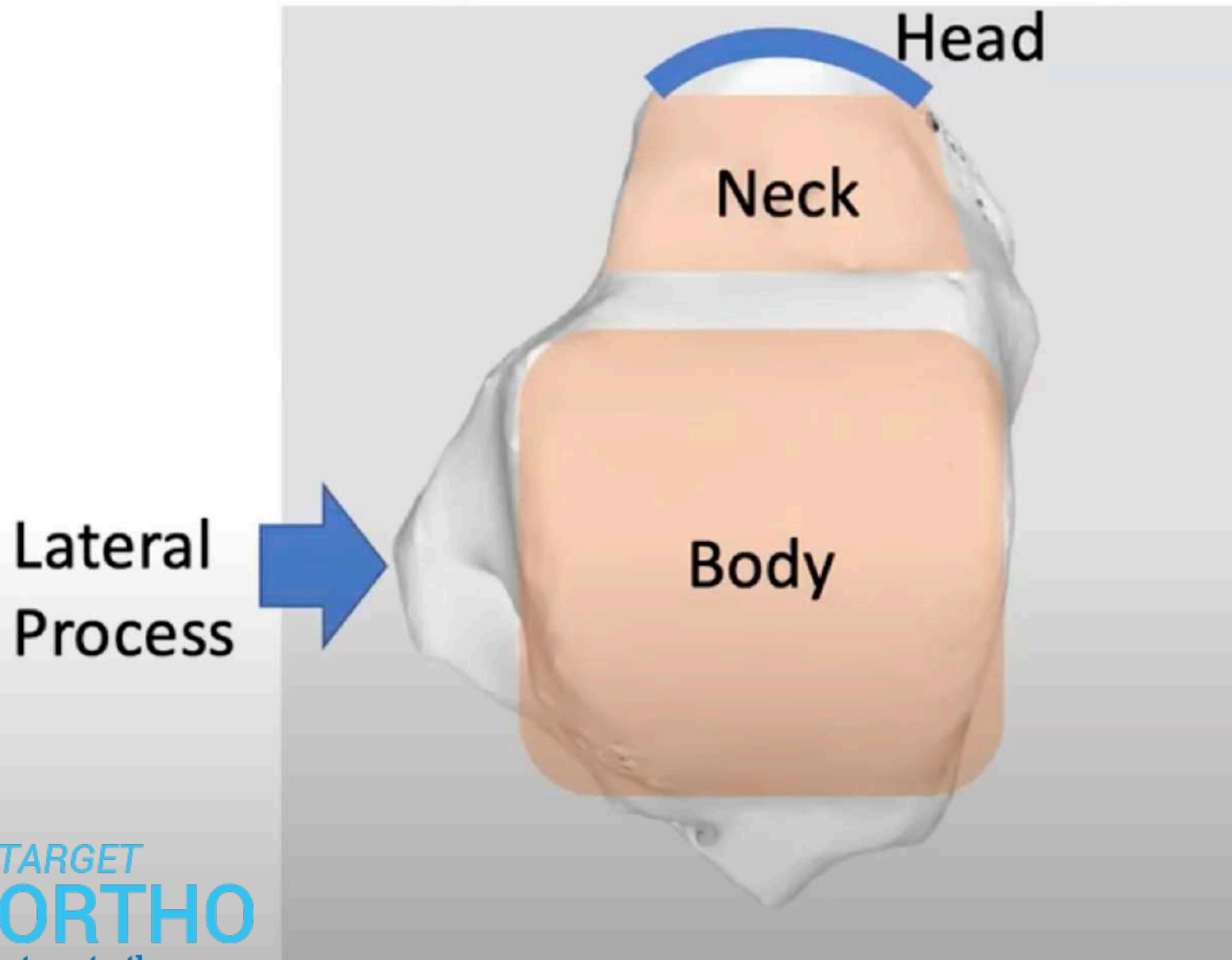


Learning Objectives

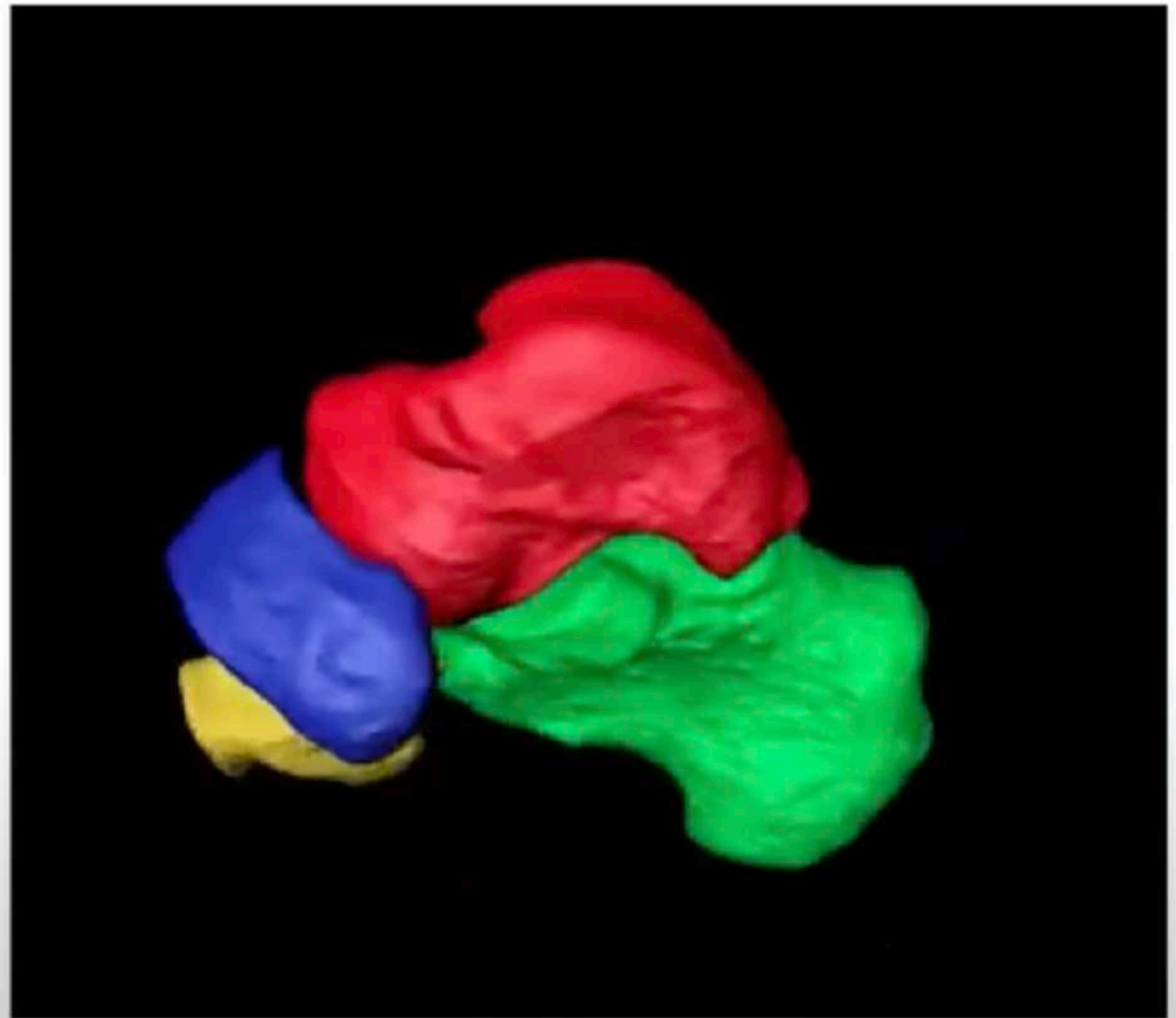
1. Pertinent anatomy
2. Classification
3. Pathomechanisms
4. Management
5. Outcomes & Complications

Anatomy



Anatomy

70% surface:
articular cartilage

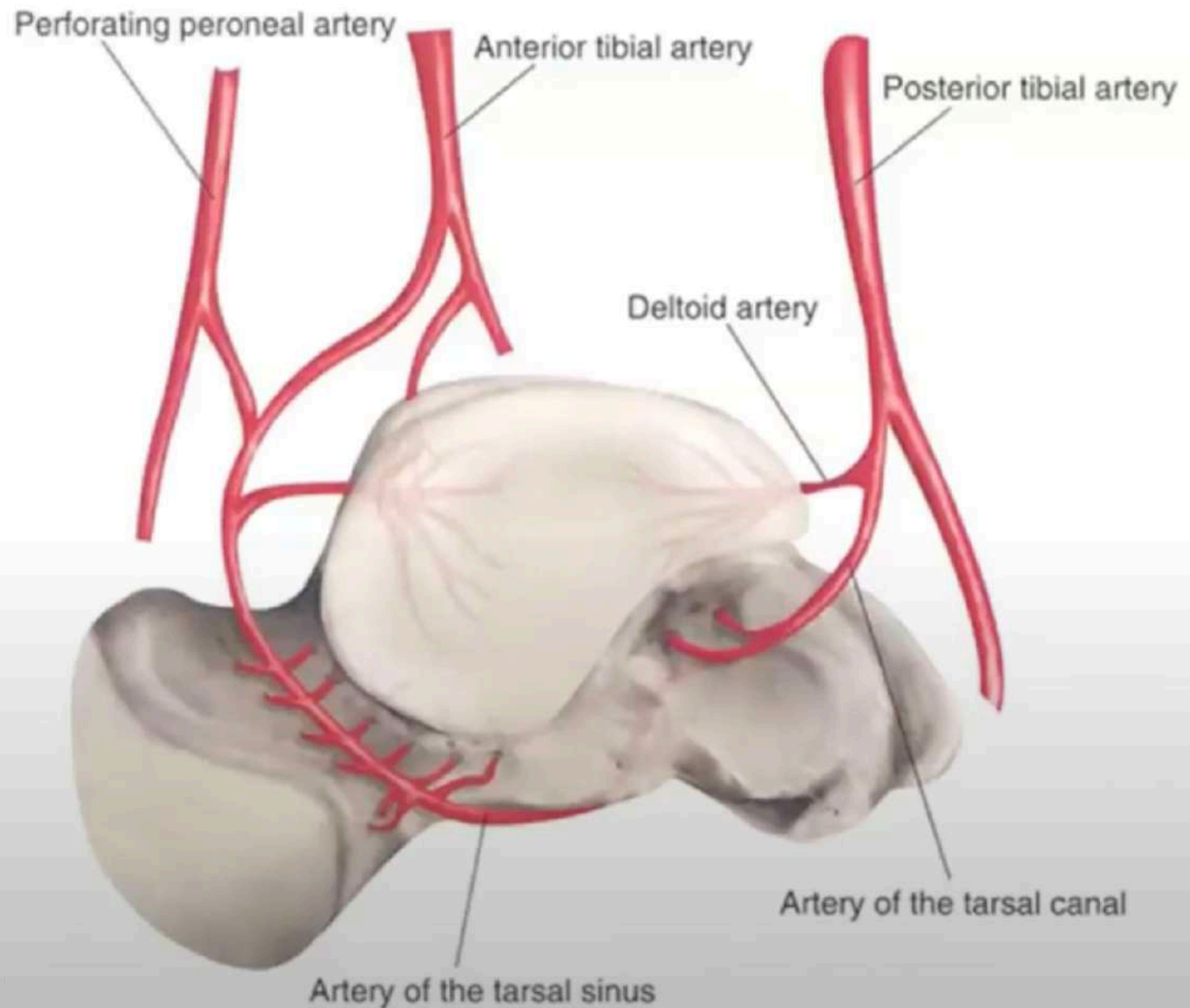


TARGET
ORTHO

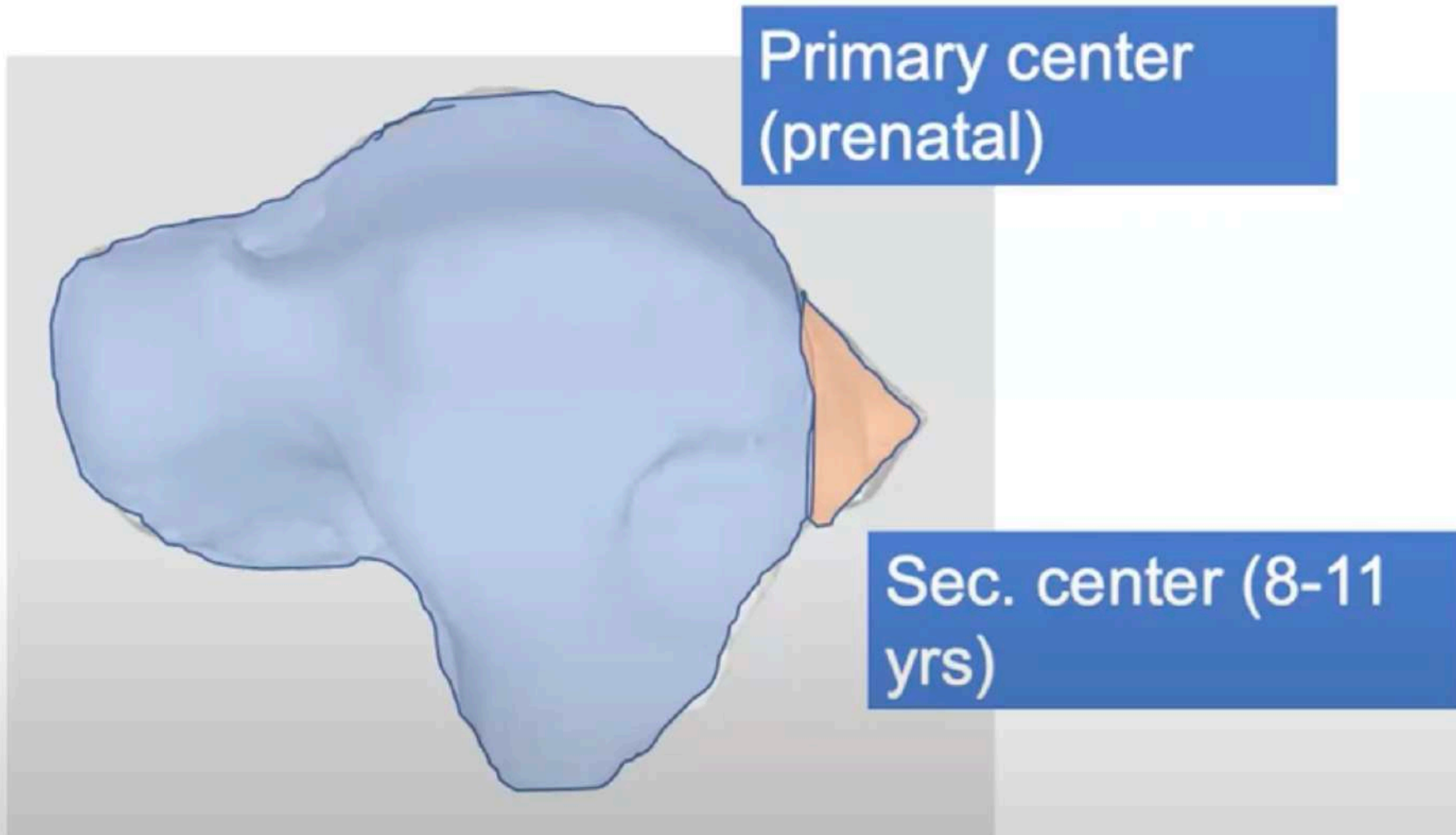
Source - Orthobullets: <https://www.orthobullets.com/trauma/1048/talar-neck-fractures>

(C) www.targetortho.com

Blood Supply



Ossification



Anatomical Variants



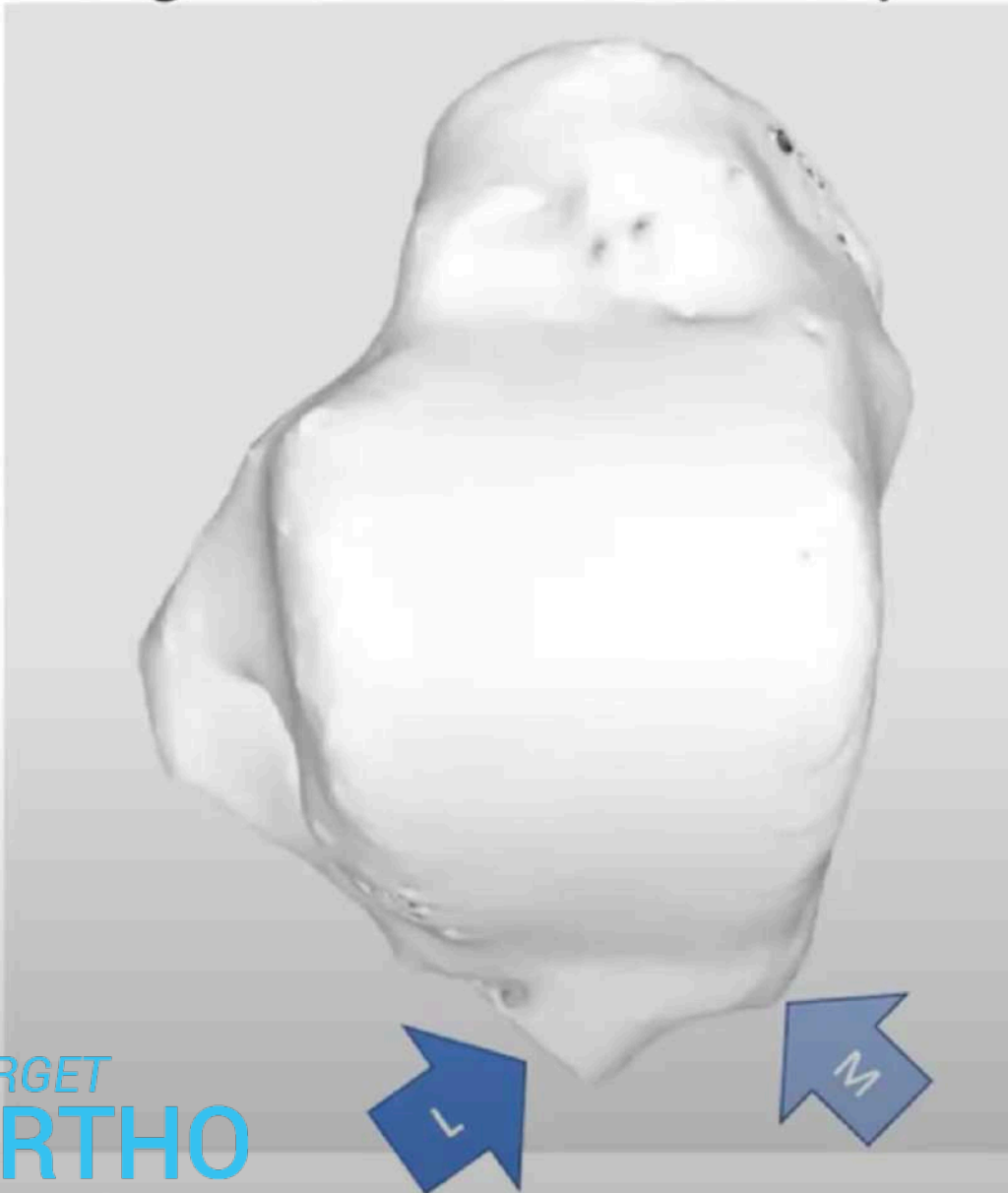
Steida's process

Os Trigonum

Os Supratalare

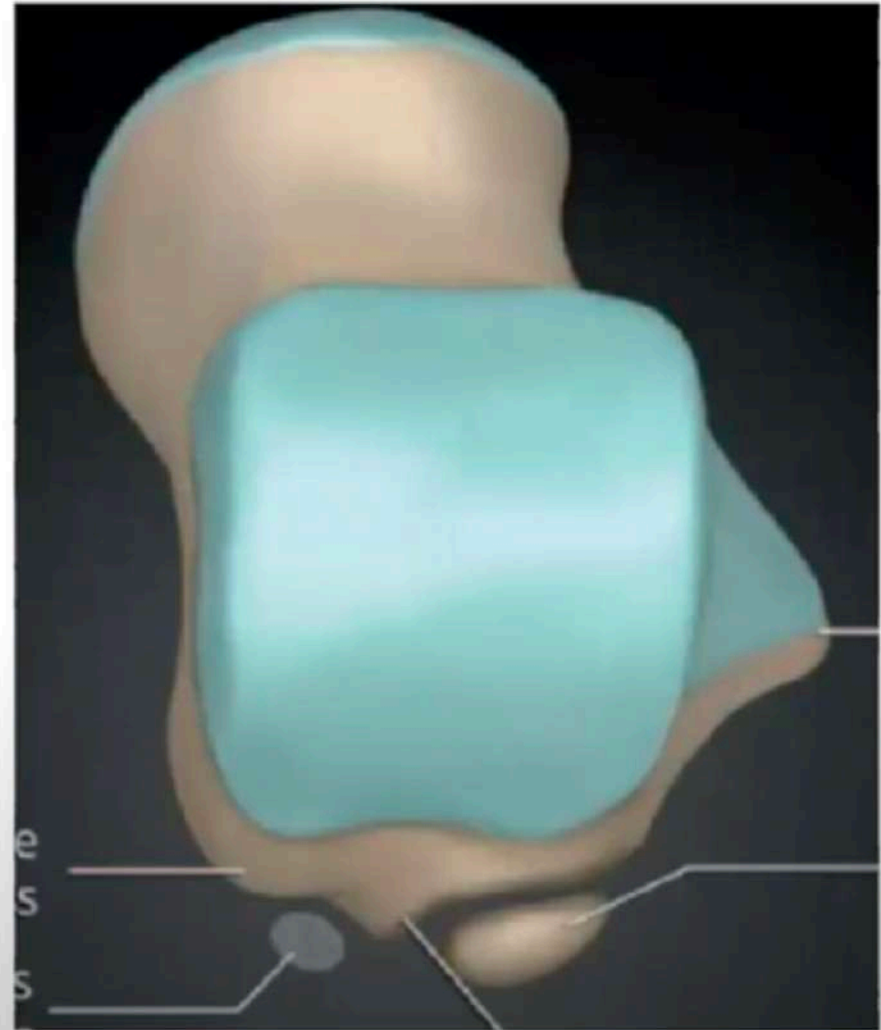
Steida's Process

Elongated lateral tubercle of posterior process



Os-Trigonum

Secondary center does not fuse



TARGET

ORTHO

(C) www.targetortho.com

Majeed H, McBride DJ. Talar process fractures: An overview and update of the literature. EFORT Open Rev. 2018;3(3):85–92.

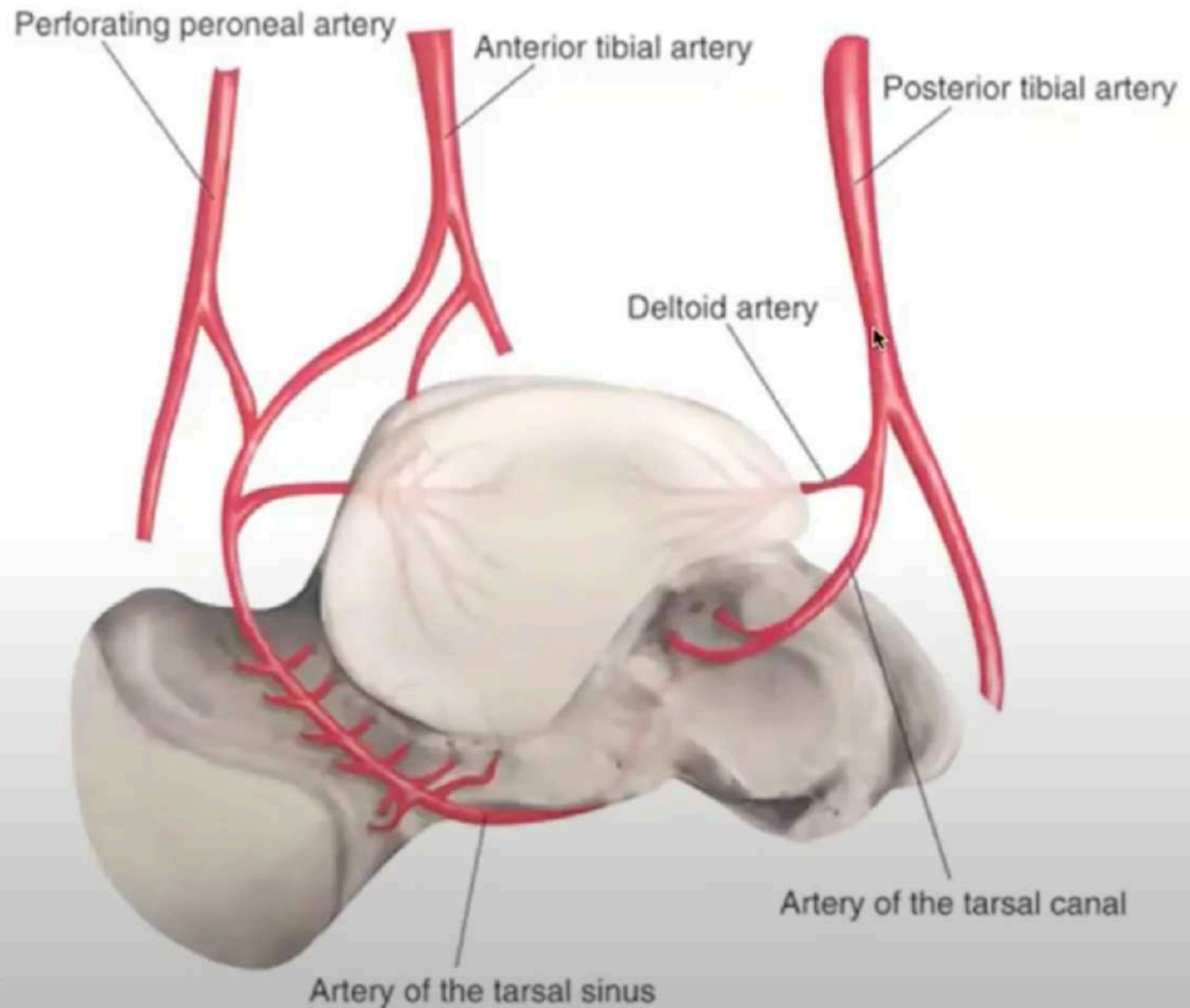
Os Supratalare



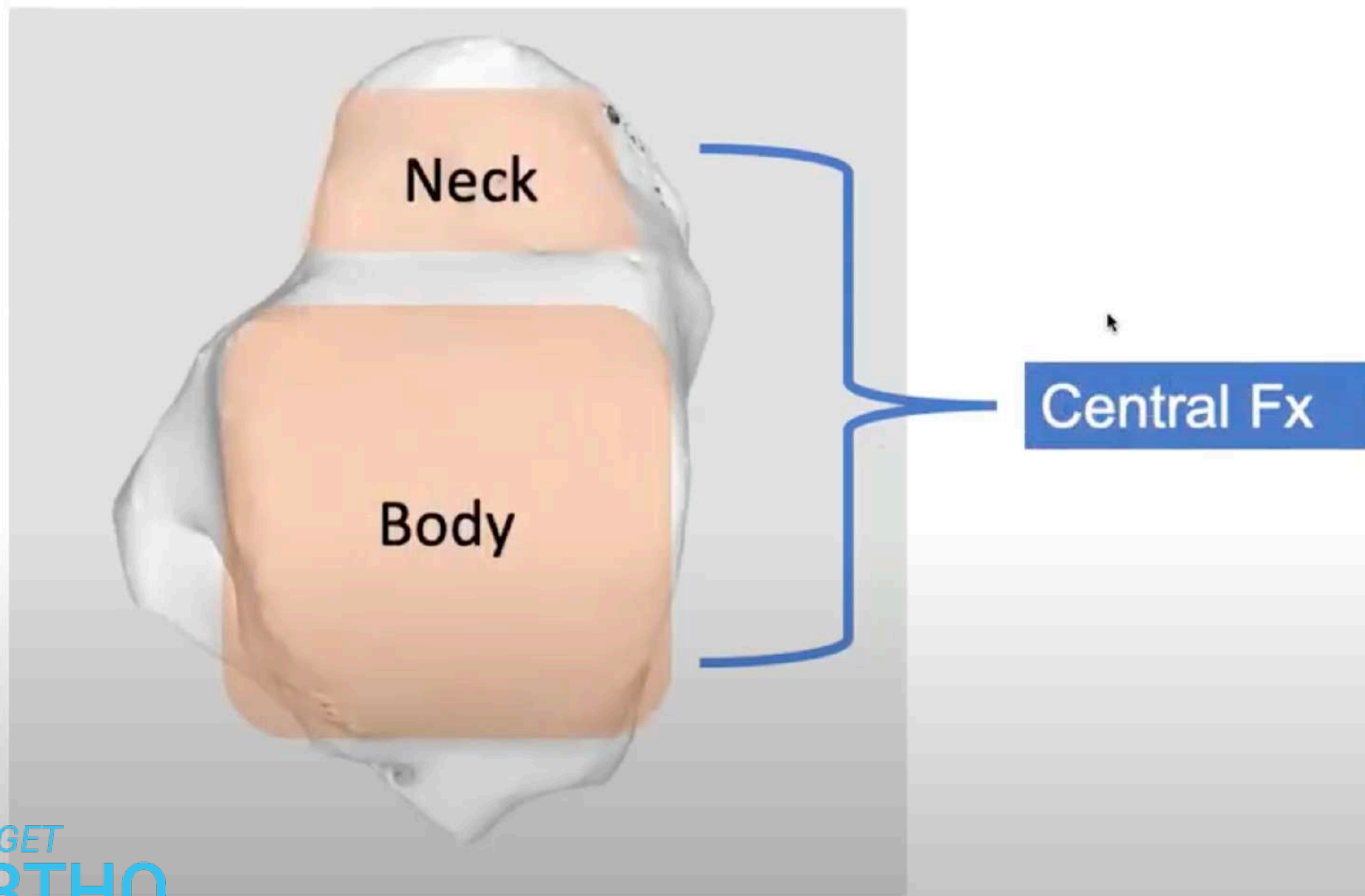
Learning Objectives

1. Pertinent anatomy
- 2. Classification**
3. Pathomechanisms
4. Management
5. Outcomes & Complications

Blood Supply

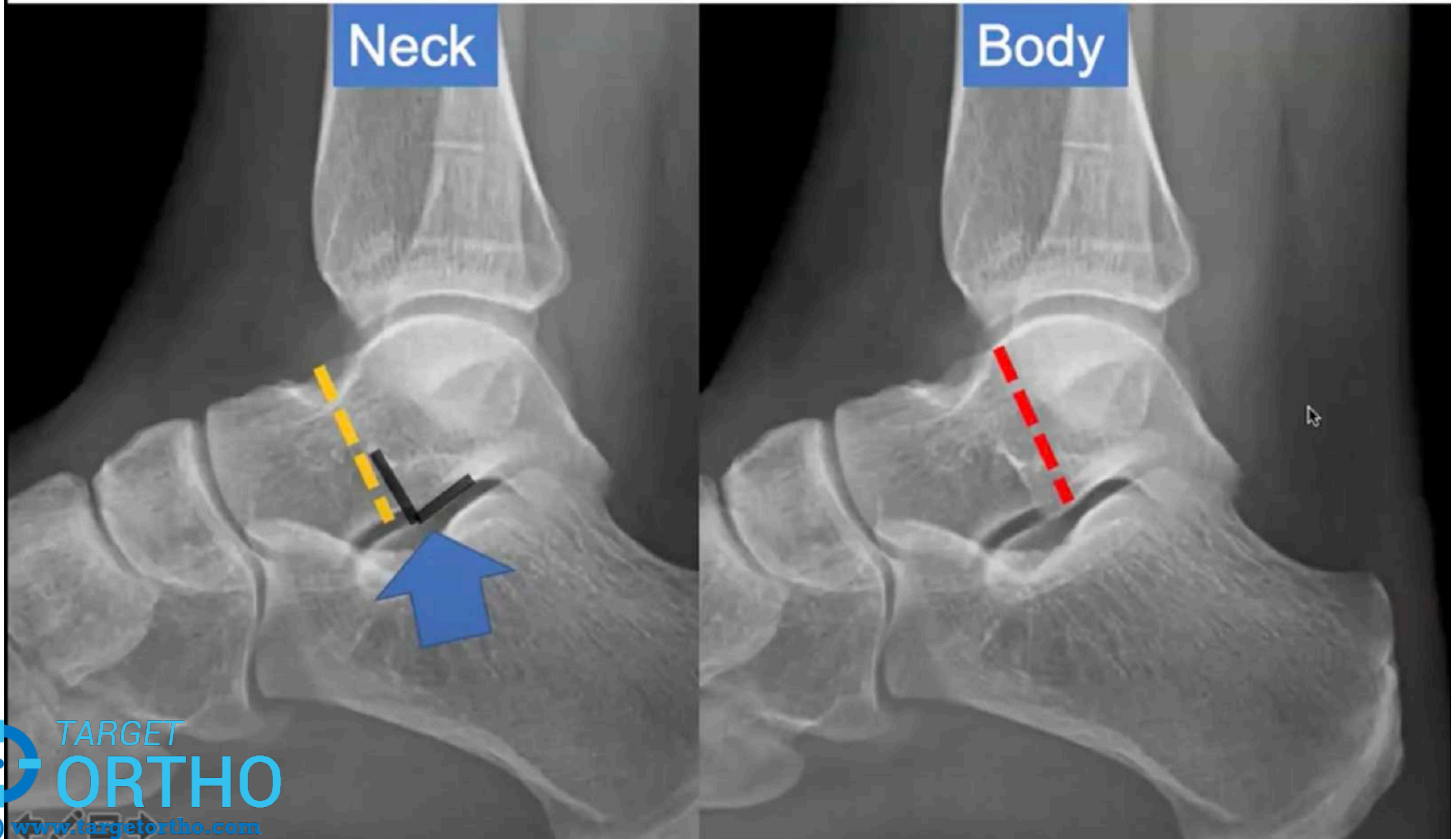


Anatomical Classification



Central Fx: Neck Vs Body

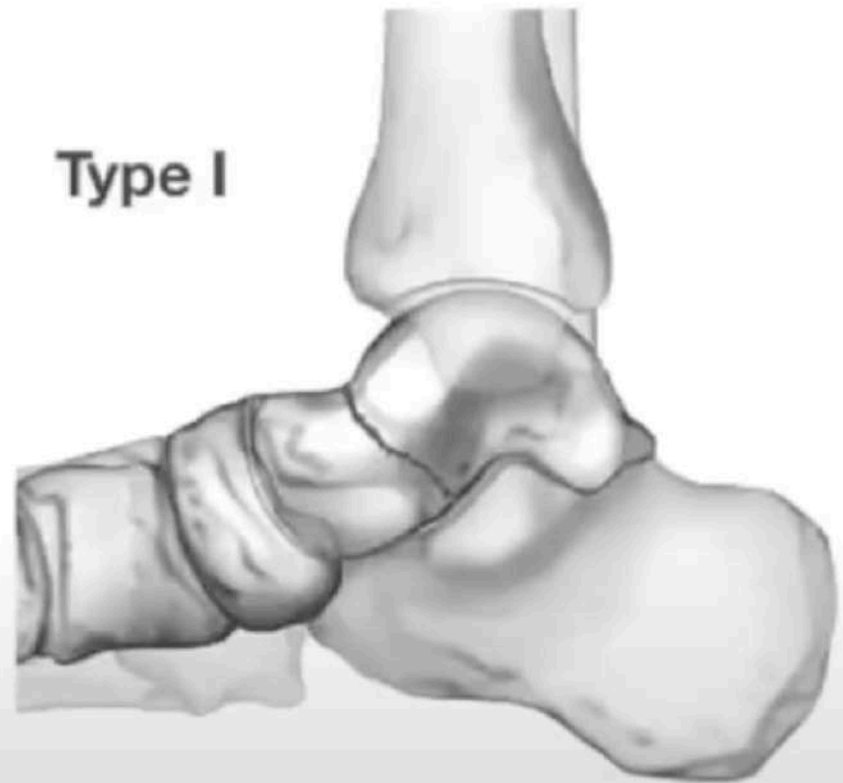
Where is the inferior fx line w.r.t lateral process of talus?



Talus Neck Fractures

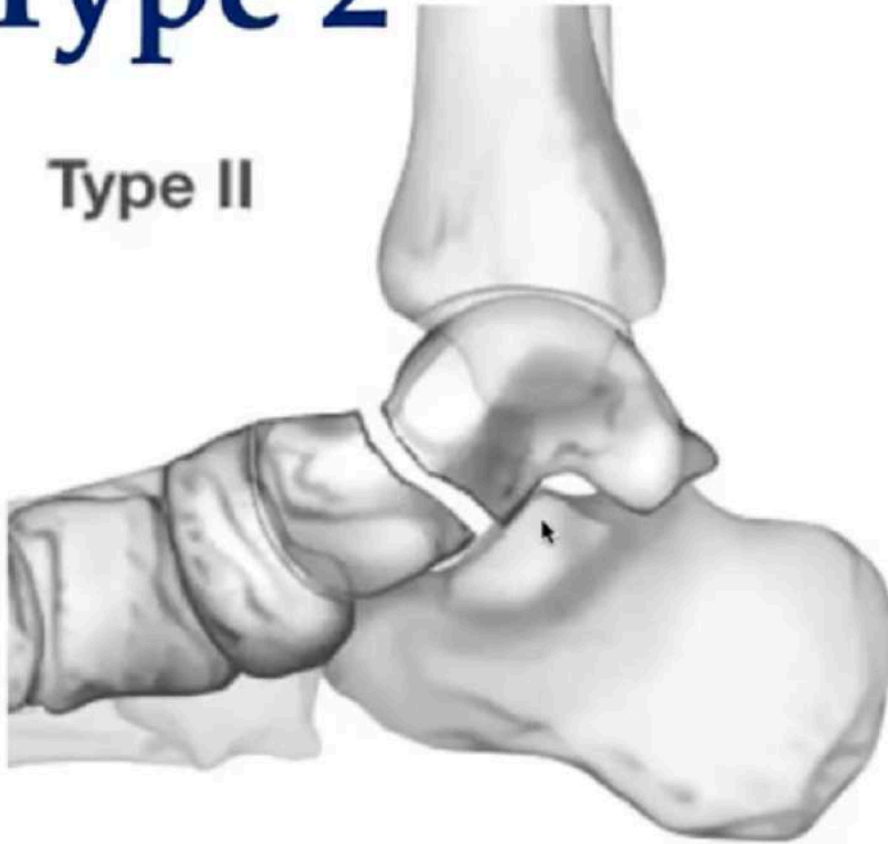
- Hawkins Classification
 - Originally 3 Types
 - Type 4 – Canale & Kelly

Hawkins Classification – Type 1



Hawkins Classification – Type 2

Type II



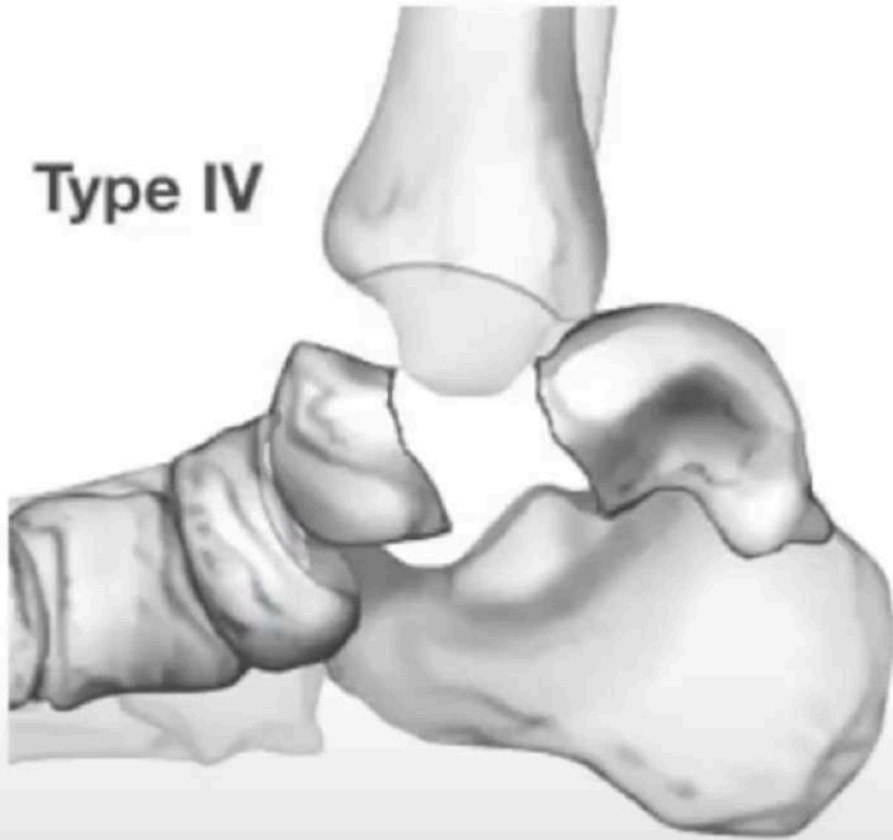
Hawkins Classification – Type 3

Type III

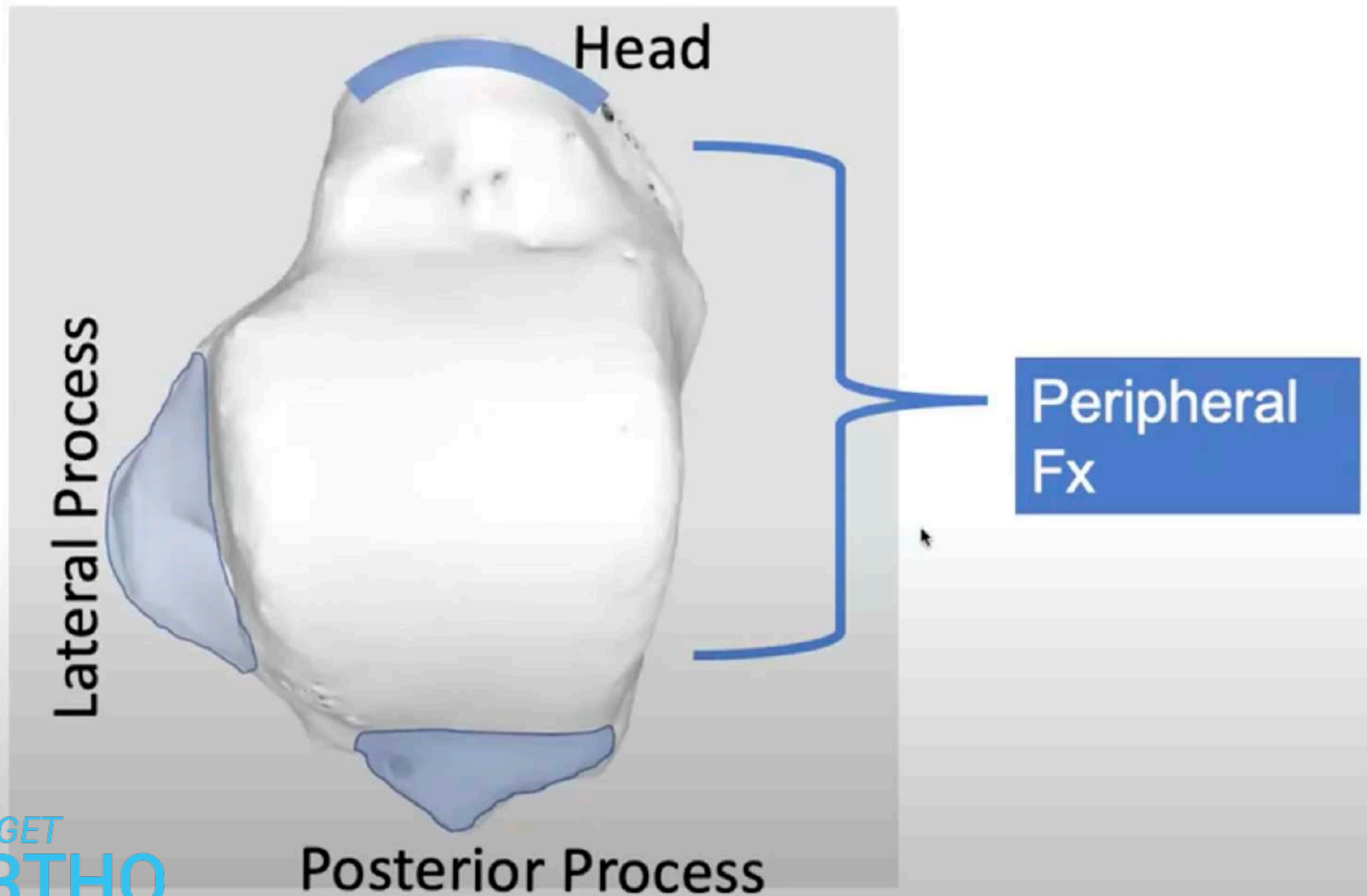


Type 4 – Canale & Kelly

Type IV

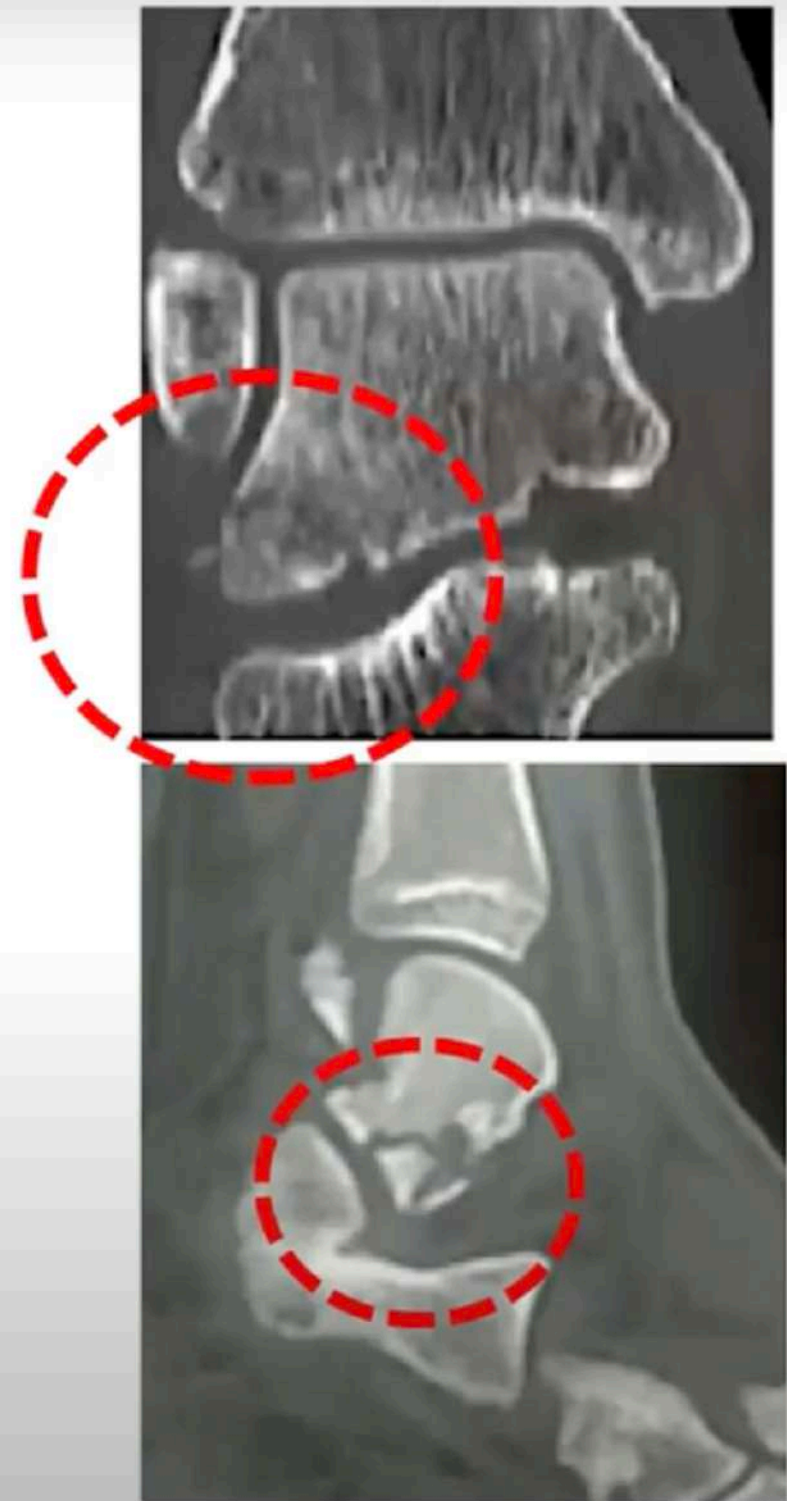


Anatomical Classification



Lateral Process Fx

- Snowboarder's Fx
- Inversion/Eversion
- Small fragments – excise
- Large - Fix



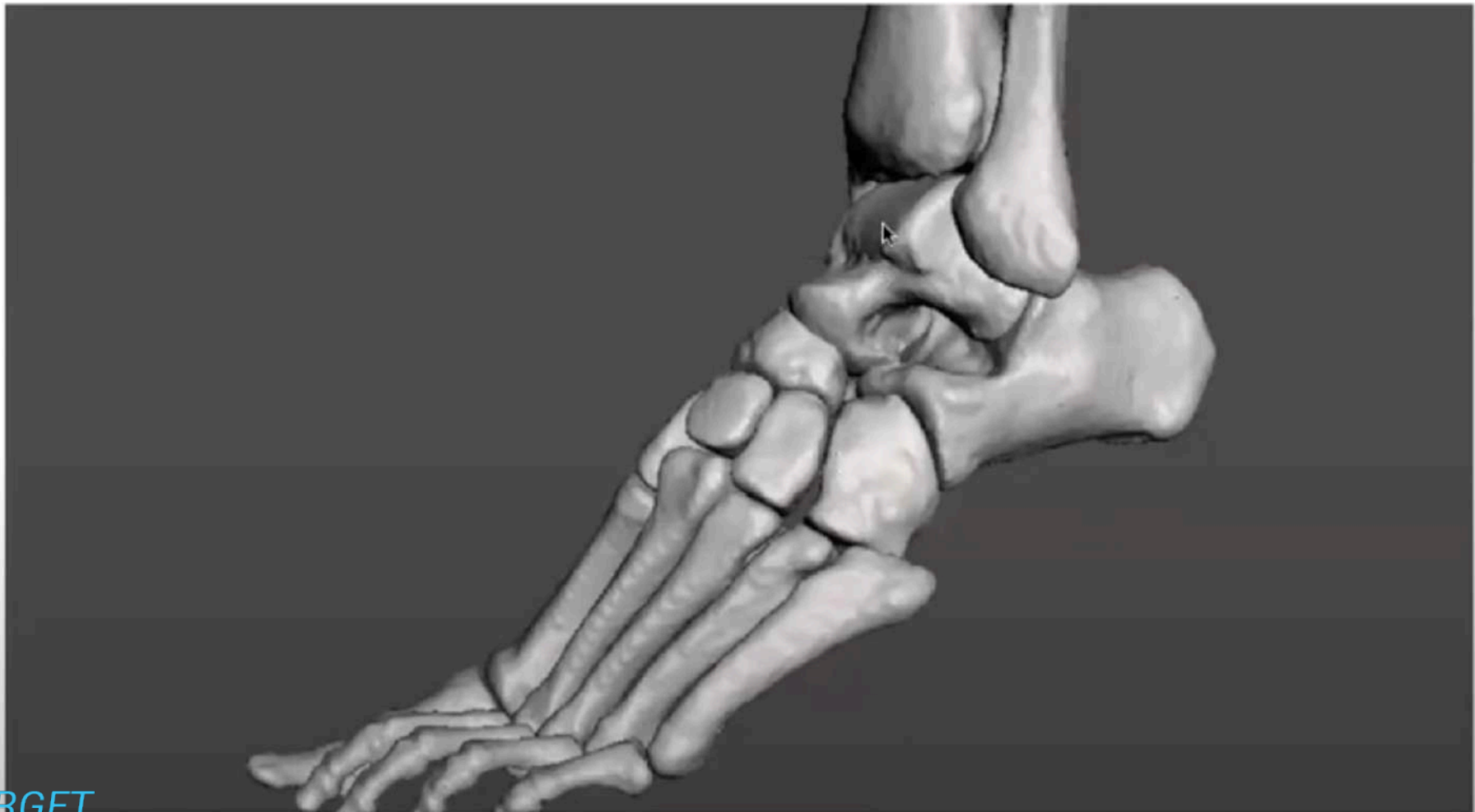
Posterior Process Fx

- Forced Inversion
- Misdiagnosed as ankle sprain
- Small - excise
- Large - Fix



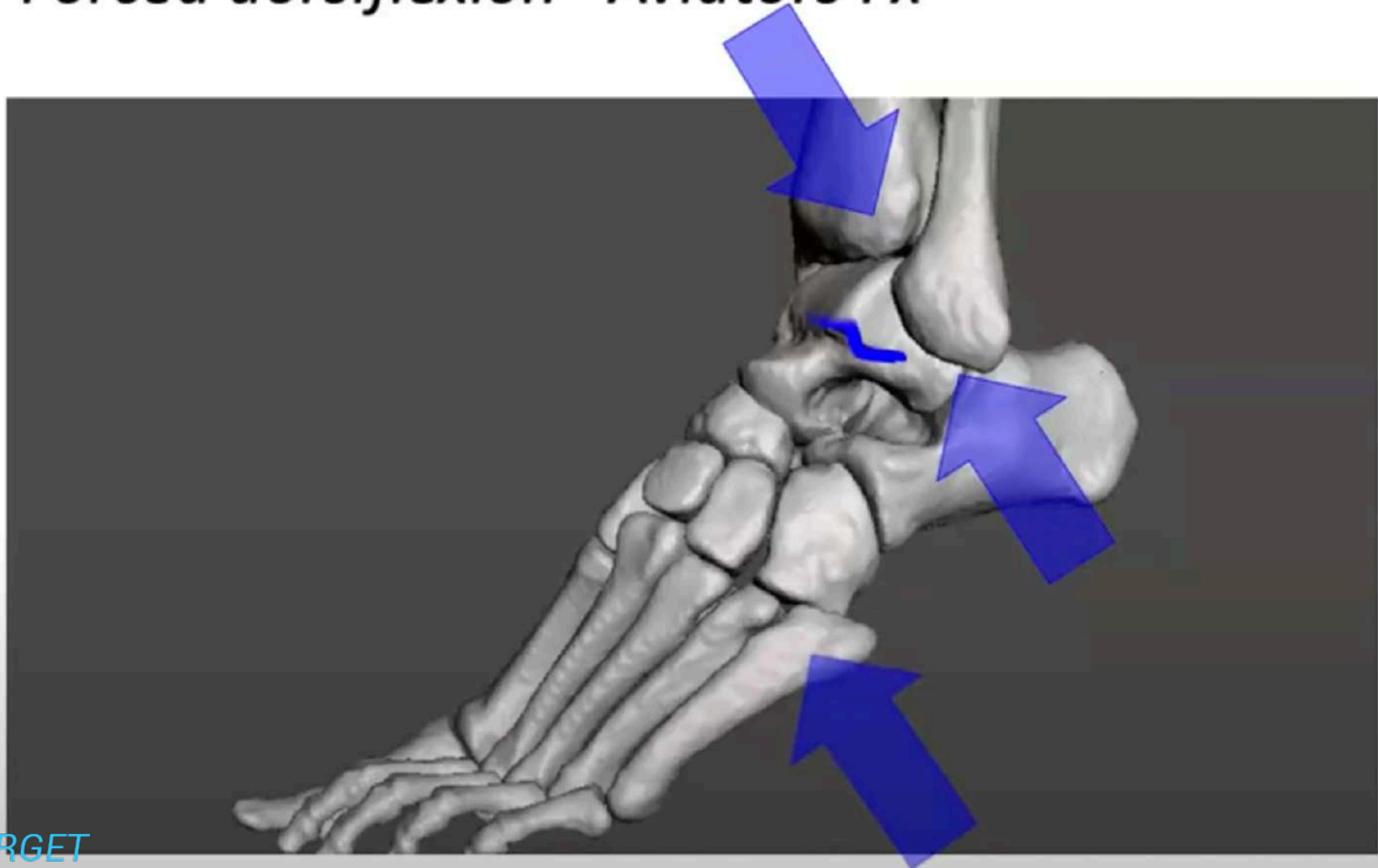
Talus Neck Fx

Forced dorsiflexion– Aviators Fx



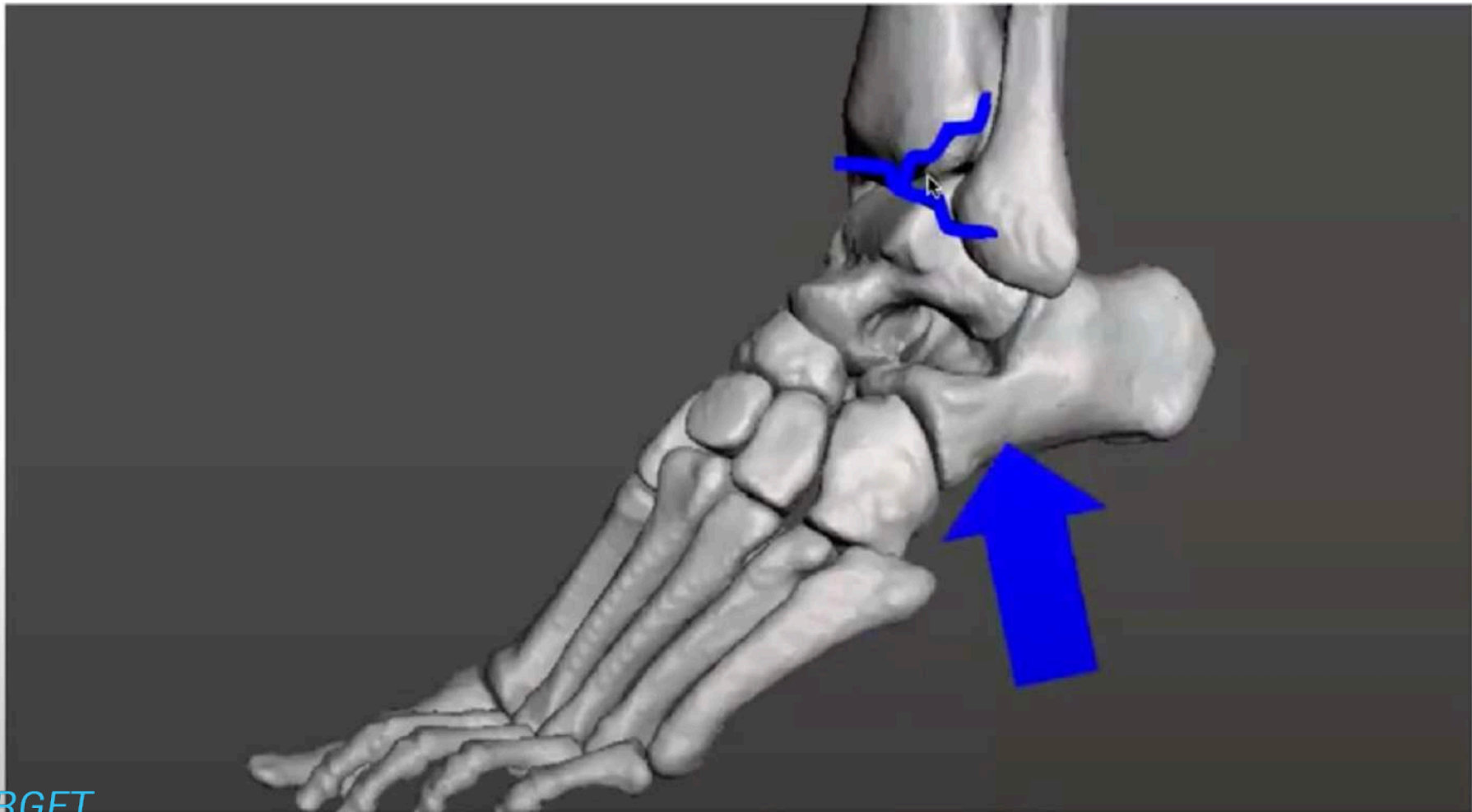
Talus Neck Fx

Forced dorsiflexion– Aviators Fx



Talus Body Fx

Axial Loading



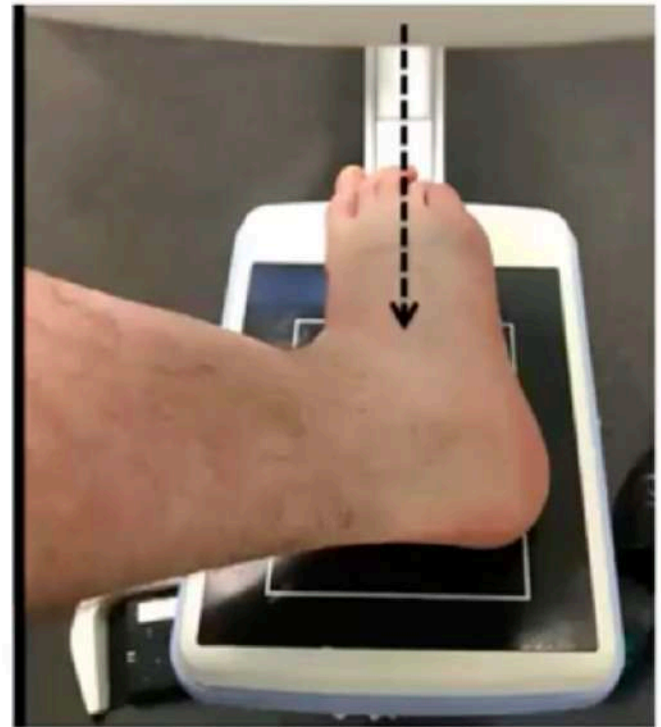
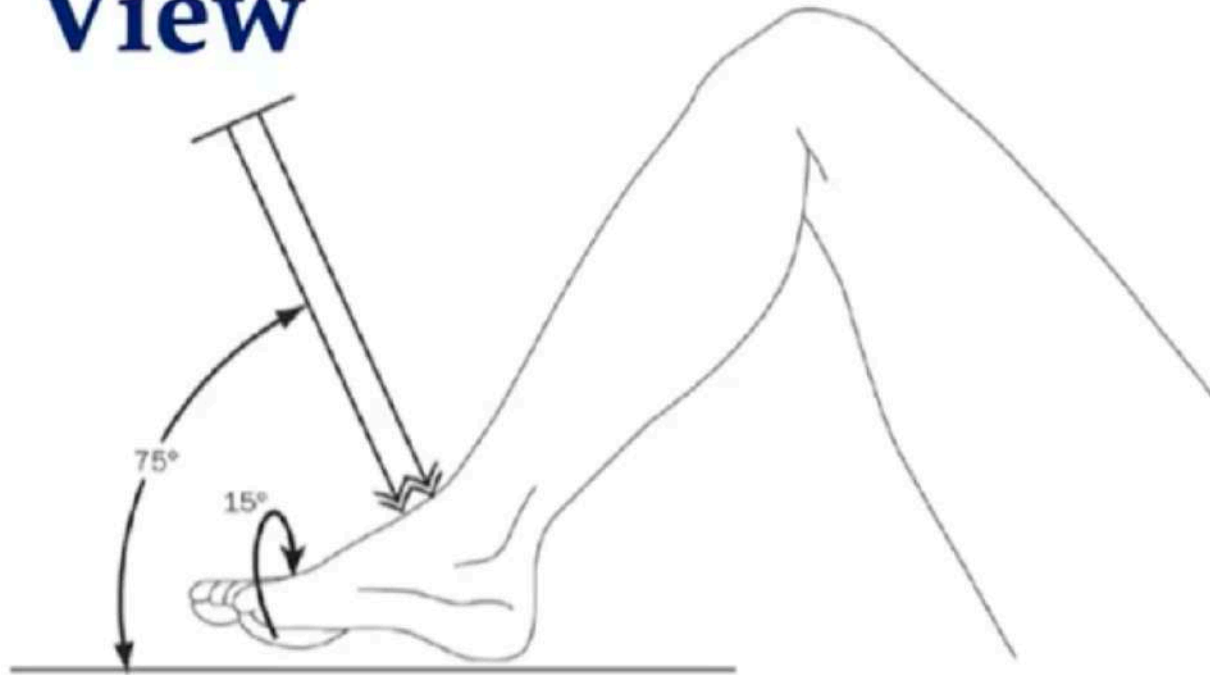
Learning Objectives

1. Pertinent anatomy
2. Classification
3. Pathomechanisms
- 4. Management**
5. Outcomes & Complications

Workup

- AP view
- Lateral view
- Canale view
- CT

Canale & Kelly View



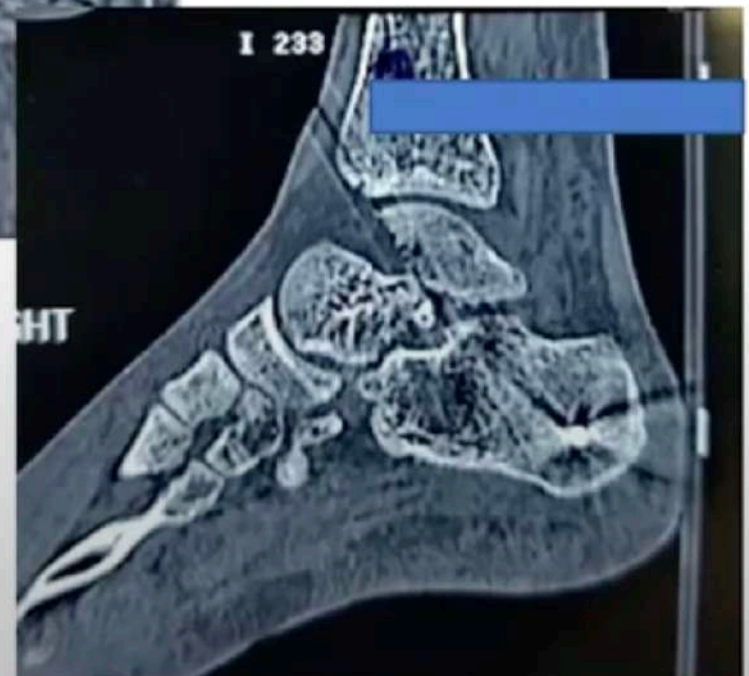
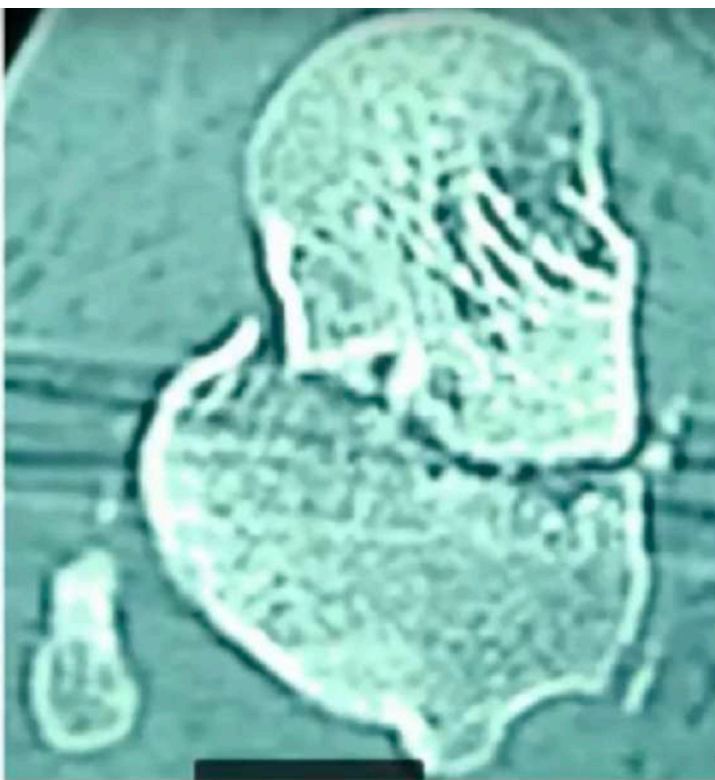
> J Bone Joint Surg Am. 1978 Mar;60(2):143-56.

Fractures of the neck of the talus. Long-term evaluation of seventy-one cases

S T Canale, F B Kelly Jr



CT Scan



Timing of Surgery

- Early reduction of dislocated subtalar joint/extruded body
 - Closed reduction
- If no dislocation – may wait till swelling subsides

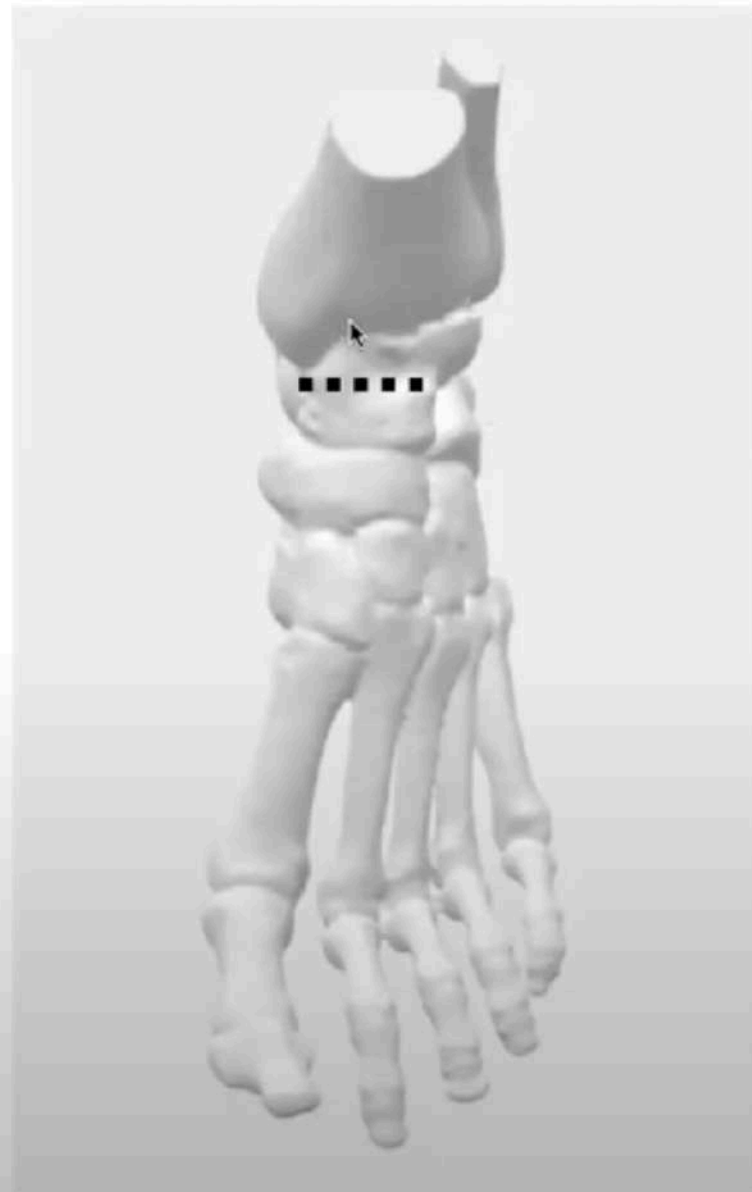
Surgical Approaches

- Dual approaches are Standard of Care
- Better assessment of varus and rotational malalignment

Approaches - Neck

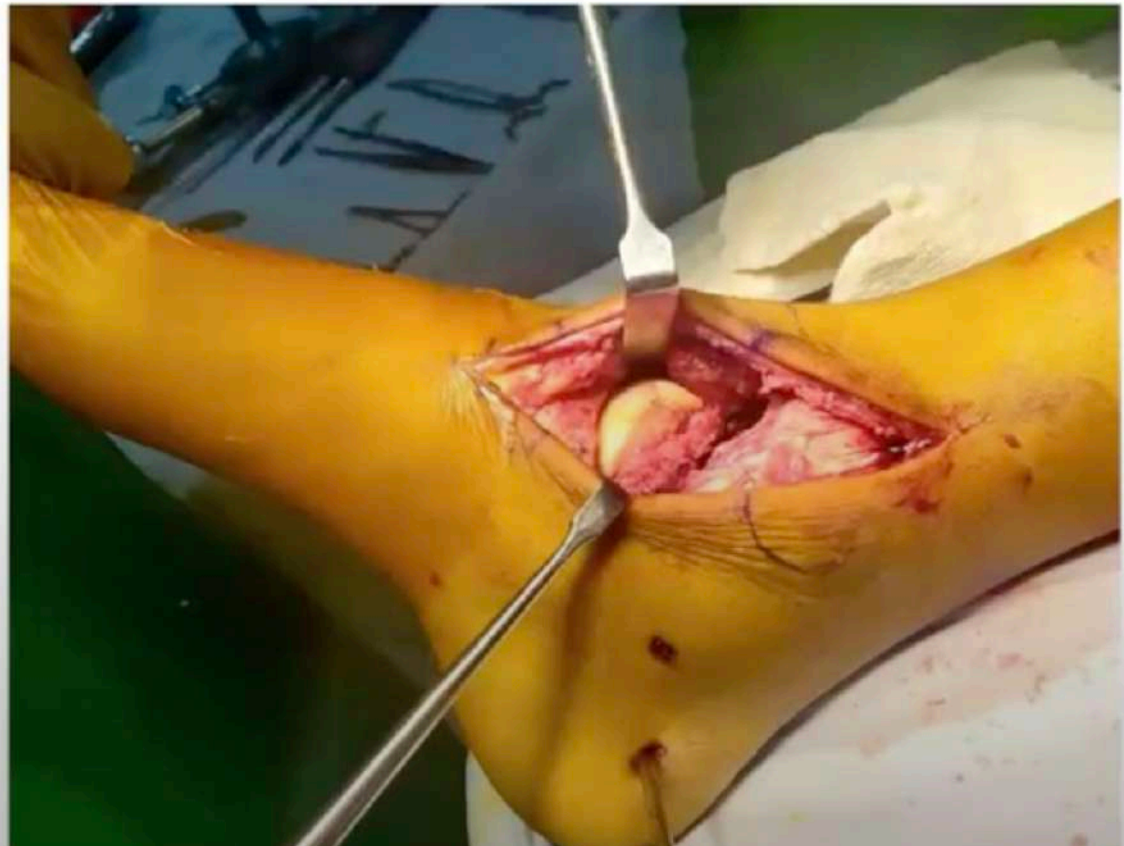
Anteromedial

Anterolateral



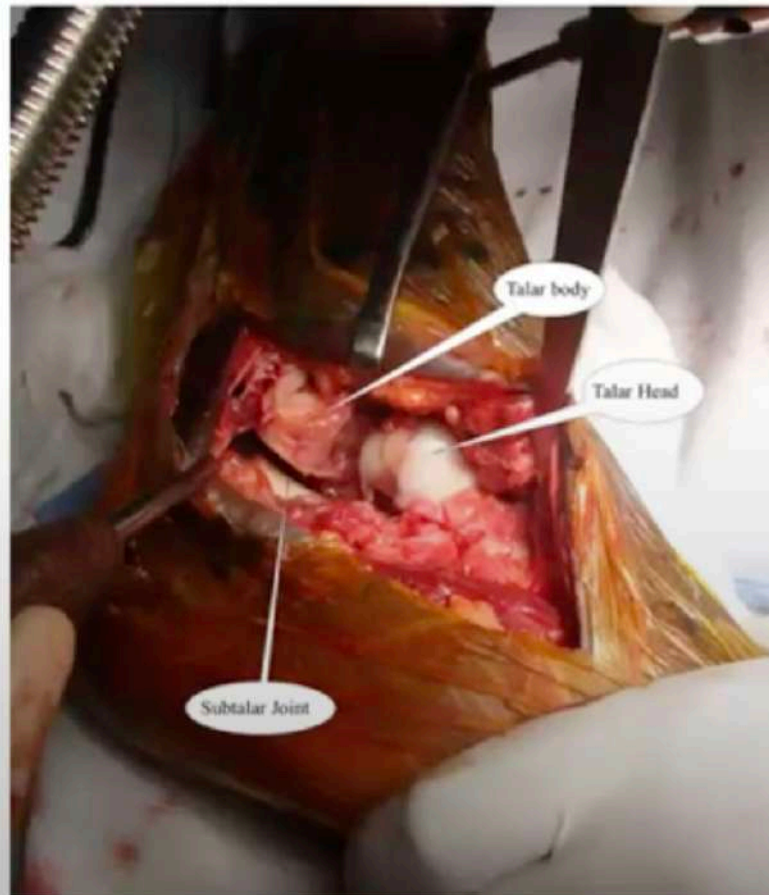
Anteromedial Approach

- Tip of MM to first ray
- Protect Saphenous V.
- Split medial capsule



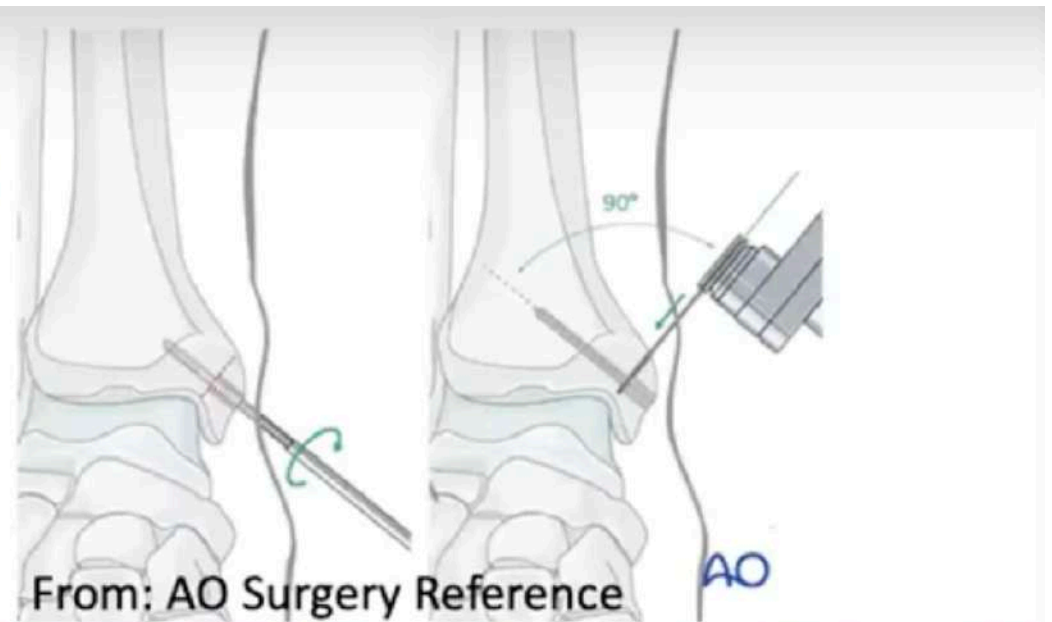
Anterolateral Approach

- Tip of fibula to MT4 base
- Split EDB
- Good access to subtalar joint + AL neck & body



Medial Malleolus Osteotomy

- Short Oblique
- Pre-drill
- Crack the posterior cortex – better apposition
- Hinges on deltoid lig.



Fixation Strategy

- Non- comminuted neck fractures
 - compression screws
 - Medial + Lateral
 - Perpendicular to Fx line for maximum compression



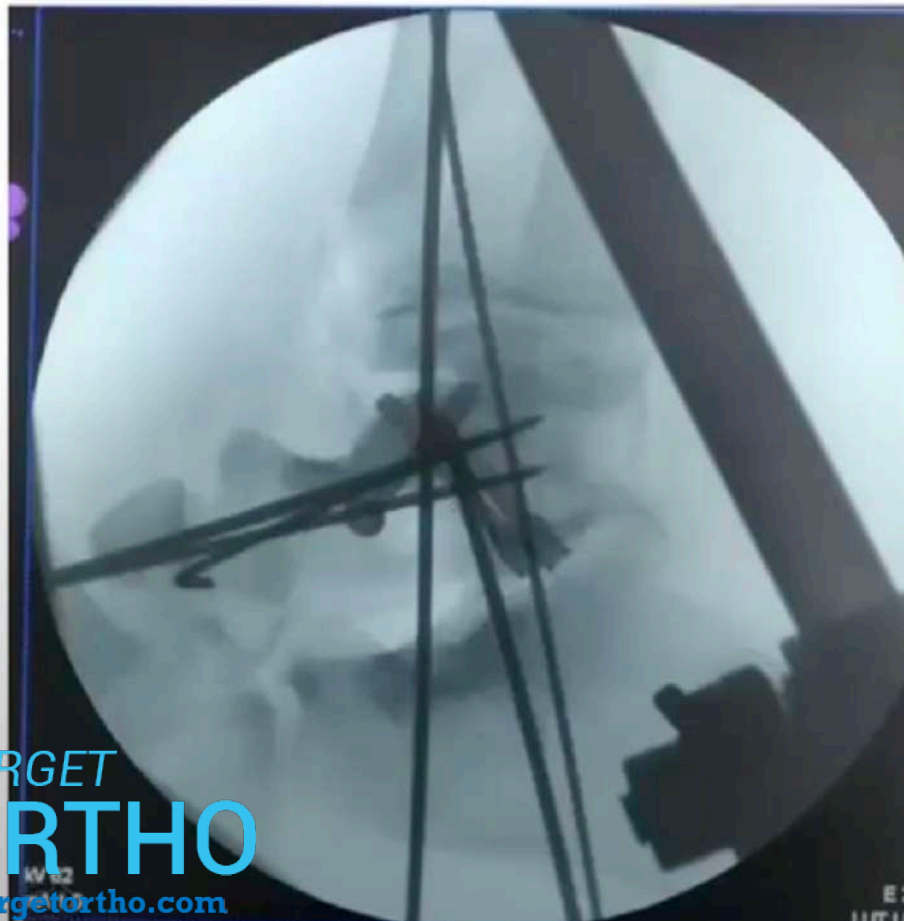
Fixation Strategy

- Comminuted neck fractures
 - Comminution is usually medial
 - Bone graft to maintain length
 - Positional screw (cortical) medially
 - Compression screw laterally



Fixation Strategy

- Body Fractures
 - Combination of screws/plates/wires



Outcomes

- Best outcomes:
 - Type 1 and 2 fractures, no complications
- Complications result in significantly poor outcomes

AVN

	Hawkins'
Type 1	0% - 16%
Type 2	20 – 50%
Type 3	70 – 100%
Type 4	90 – 100%
Overall	49%

Hawkins, LG . Fractures of the neck of the talus. J Bone Joint Surg Am. 1970;52(5):991–1002

Galverson, JJ, Winter, SB, Teasdall, RD, Scott, AT. Talar neck fractures: a systematic review of the literature. J Foot Ankle Surg. 2013;52(1):56–61

Hawkins' Sign

- Subchondral Lucency at 6-8 weeks
 - increased vascularity
- Positive sign – low chances of AVN



AVN - Management



Courtesy: Prof M S Dhillon



Non weight
bearing/ESWT

Core
decompression/Gra
fts

Fusion/Novel
arthroplasty
procedures

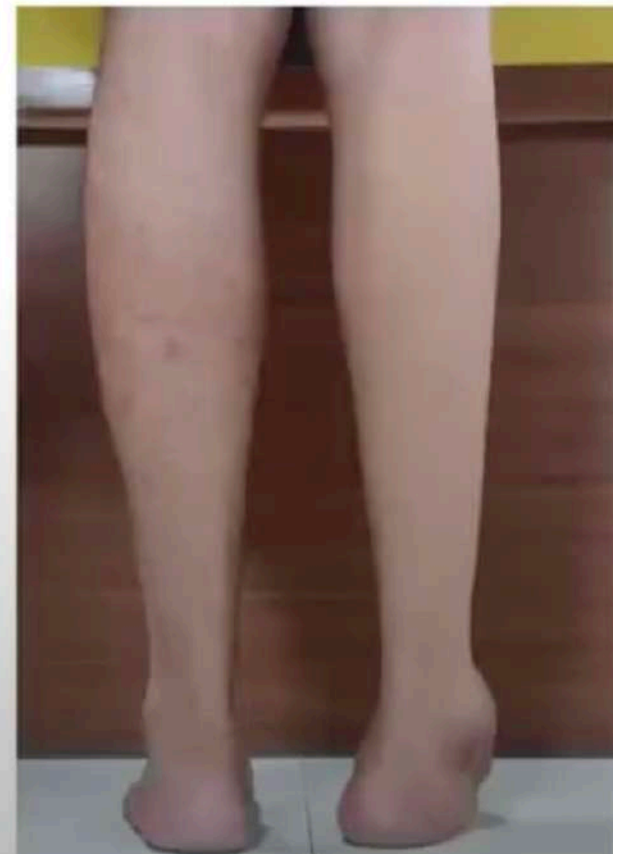
Arthrosis

- Subtalar arthrosis: 42% (4 – 100%)
 - *Studies with > 2 year follow-up: 81%*
- Tibiotalar: 18%
- Management: fusion

Halvorson, JJ, Winter, SB, Teasdall, RD, Scott, AT. Talar neck fractures: a systematic review of the literature. *J Foot Ankle Surg.* 2013;52(1):56–61

Malunion/Nonunion

- Malunion – 17%
- Nonunion – 5%
- Varus deformity
- Varus collapse of neck + varus hindfoot
- Treatment
 - Osteotomy +/- subtalar fusion
 - Arthrodesis



Infection

- Up to 25% in open fractures
- Meticulous debrima & antibiotic therapy is a must

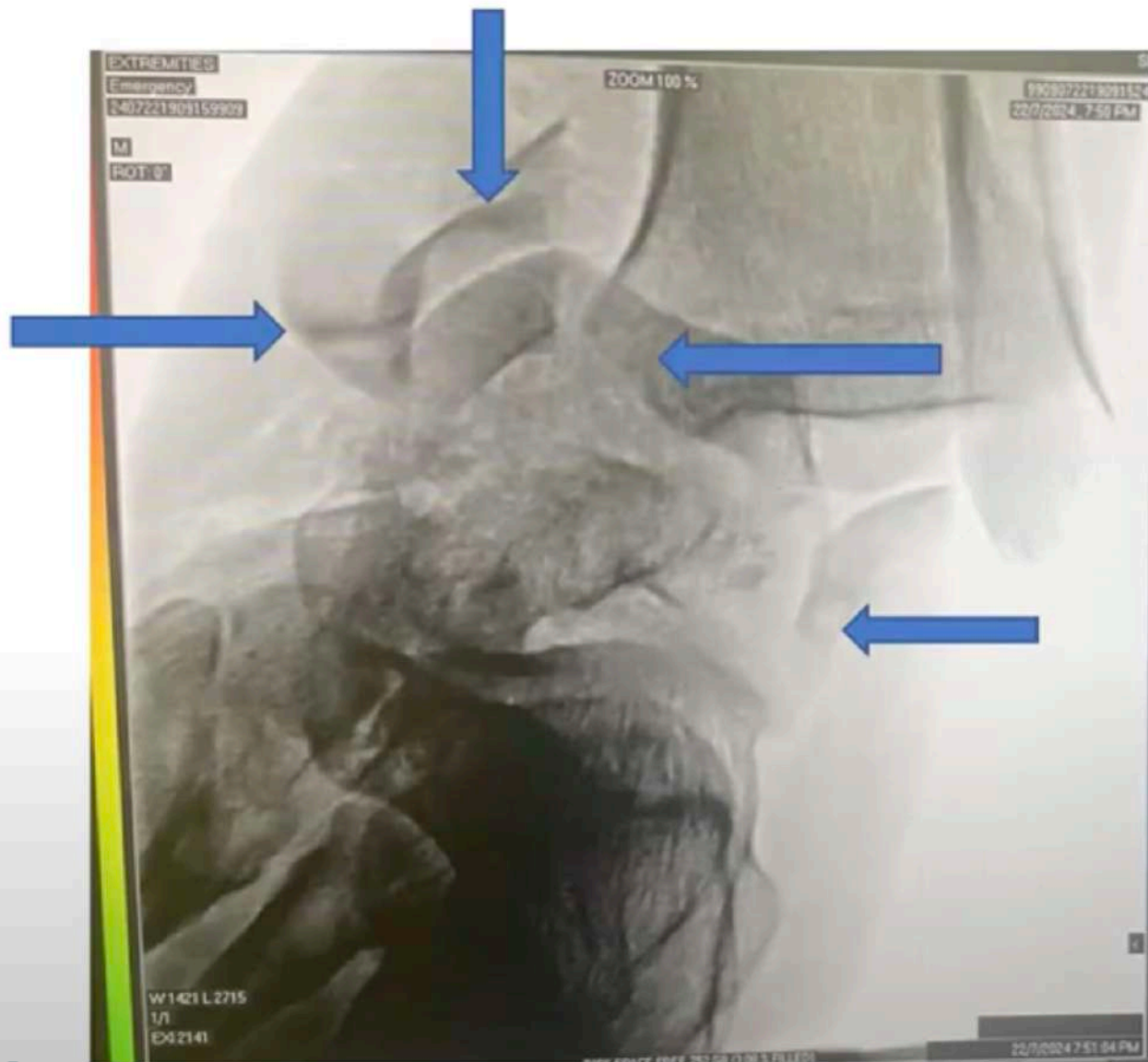
Essential Revision Points

- Blood Supply
- Hawkin's Classification & its relationship to AVN
- Surgical approaches – ALWAYS dual
- Fixation strategies – medial comminution
- Hawkin's Sign

Case : 25/M , RTA

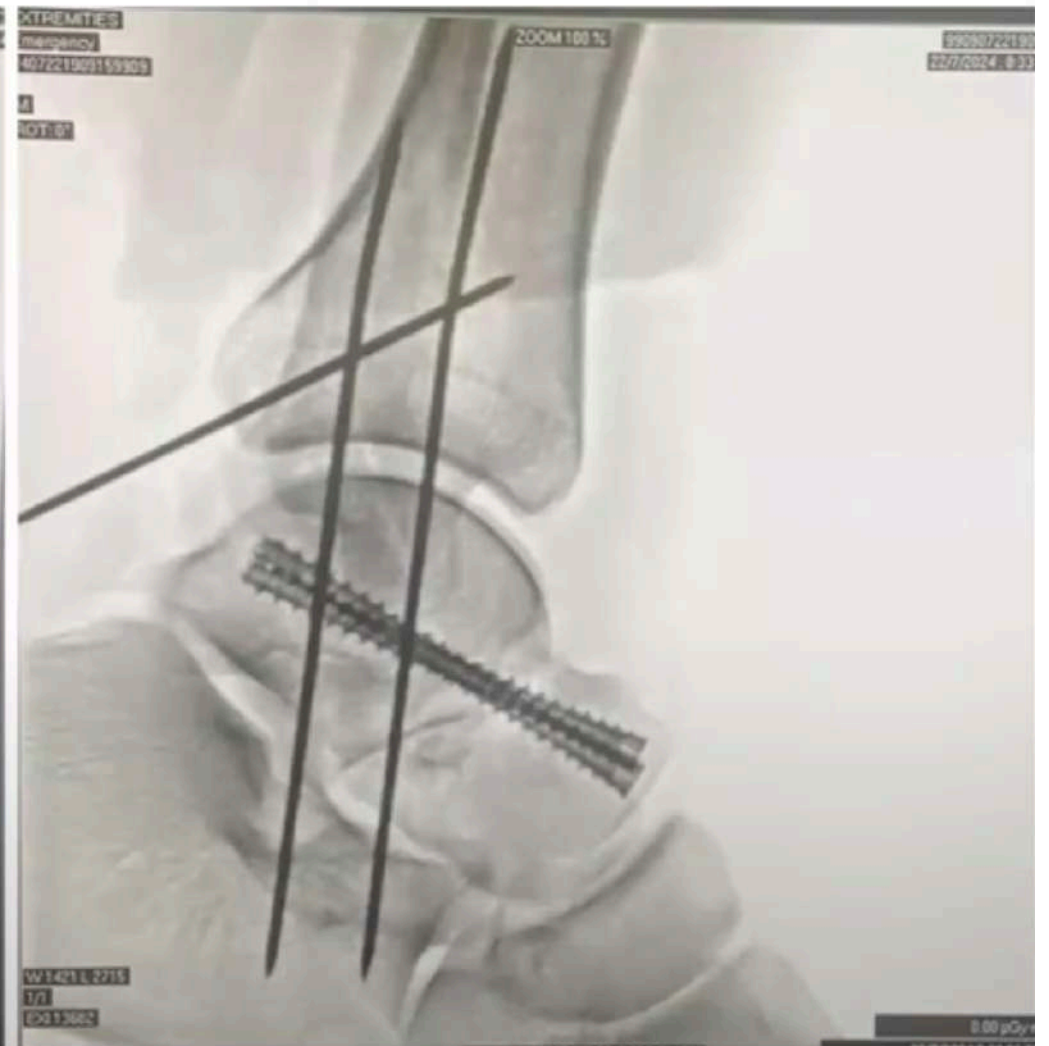














Thank You



FOOT AND ANKLE
INJURY CENTER

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