

BOTA Casuistic Meeting Kempfen

Bilateral open tibial fractures

BONNEVIE FERGUS, M.D.

CHU LIÈGE

06/12/2023

Motorbike accident at moderate velocity

- ▶ Mâle, 57 y.o.
- ▶ HD stable
- ▶ Bilateral open tibial fractures

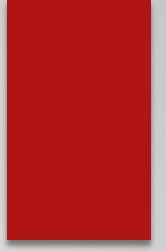
- ▶ No notable medical history
- ▶ No chronic treatment

- ▶ Tabacco +++ (20 cig/day for 45 years)
- ▶ Alcohol +++ (15 units/day)
- ▶ No diabetes

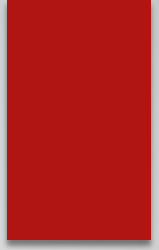




Right tibia



Left tibia



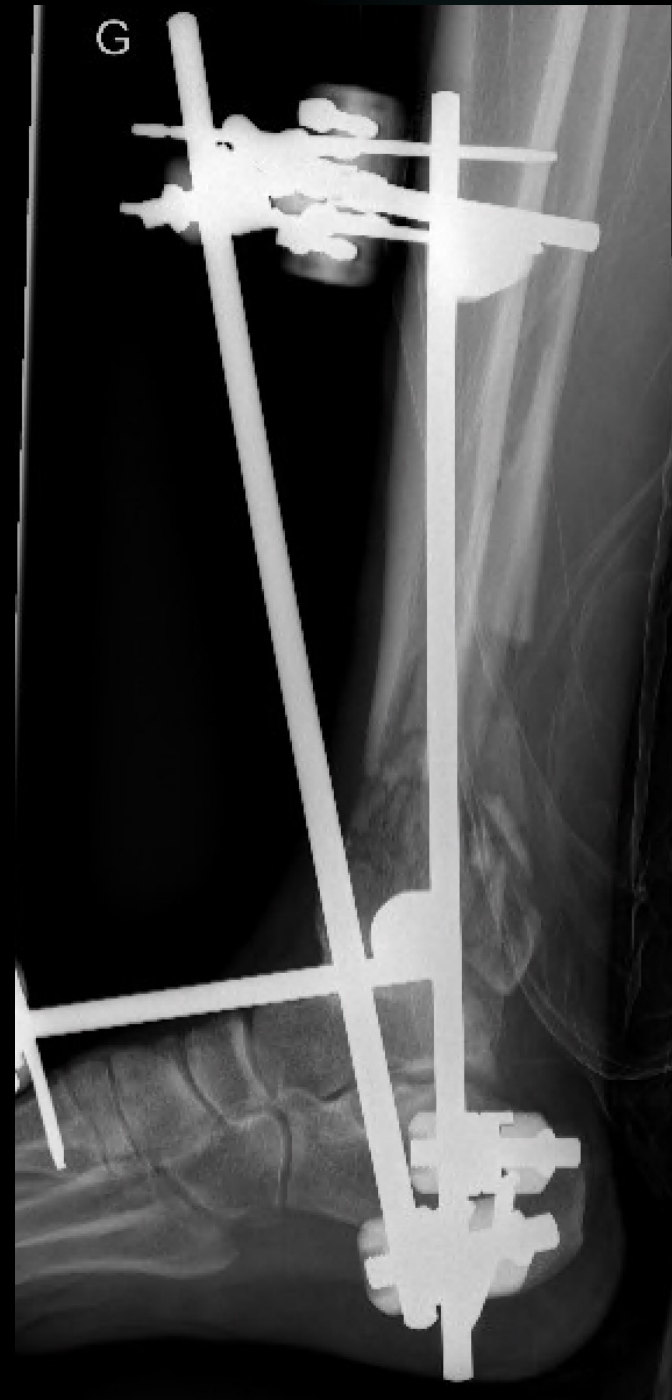
What now ?

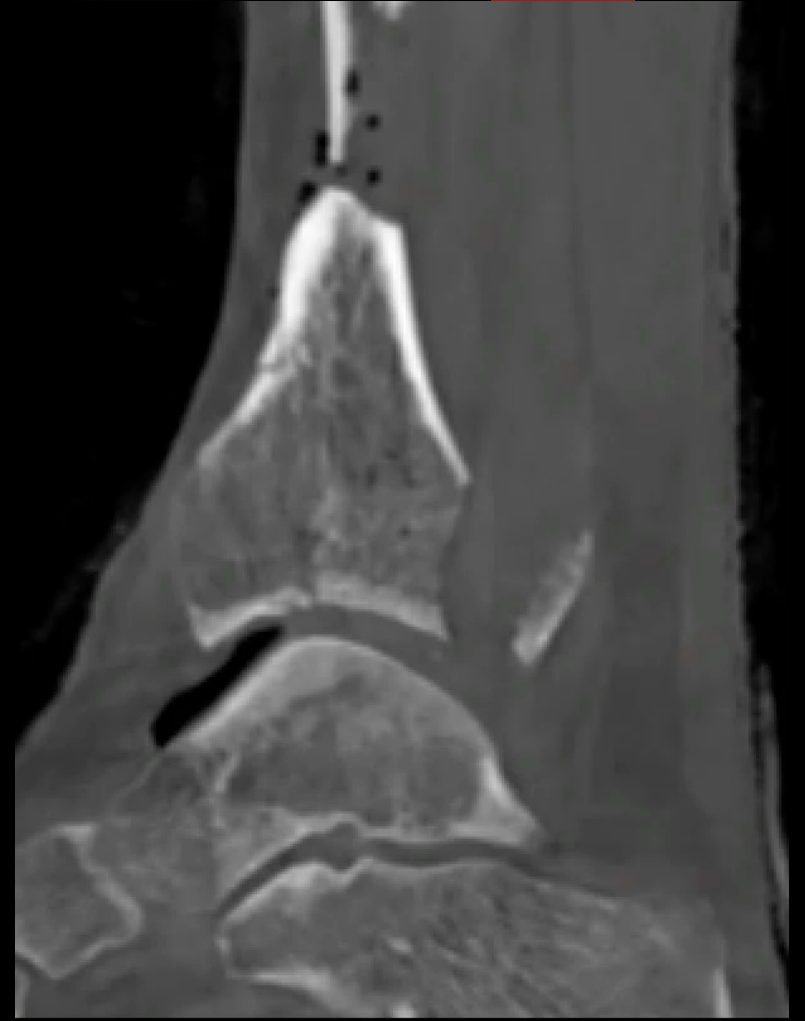
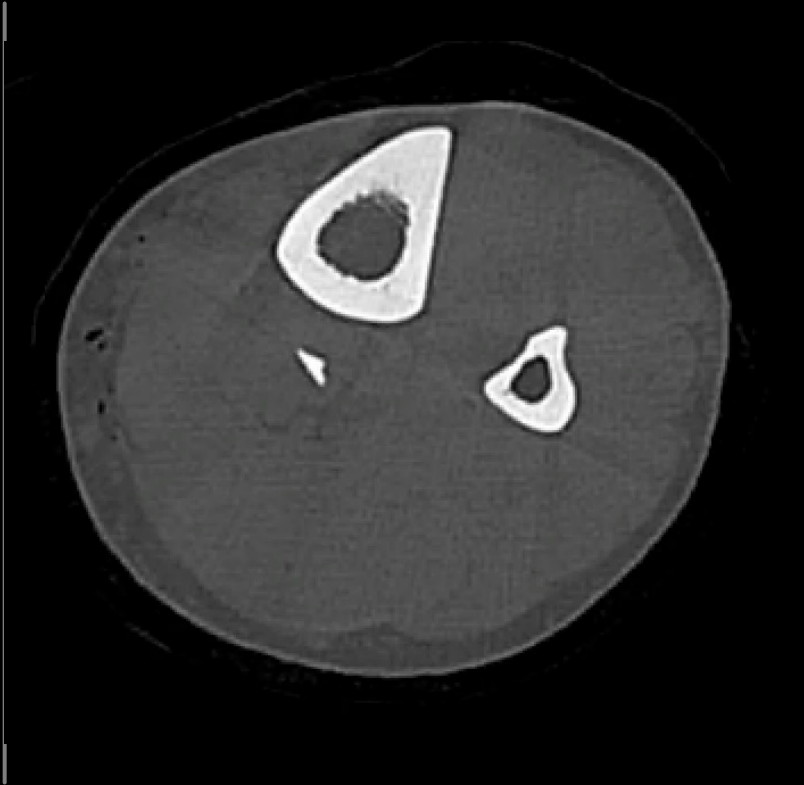
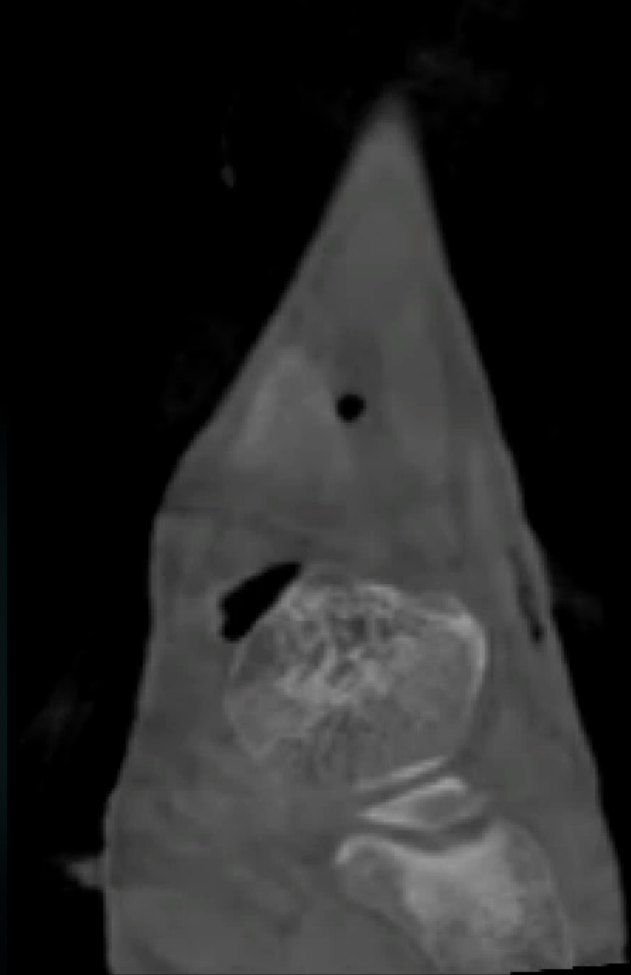


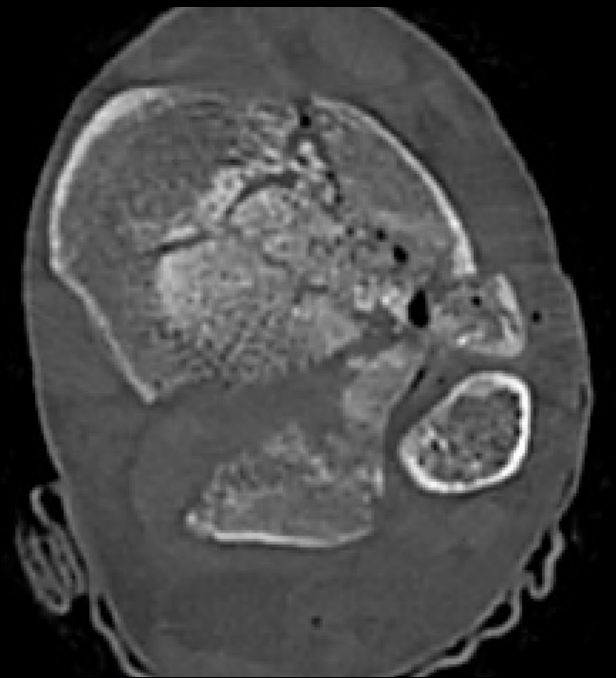
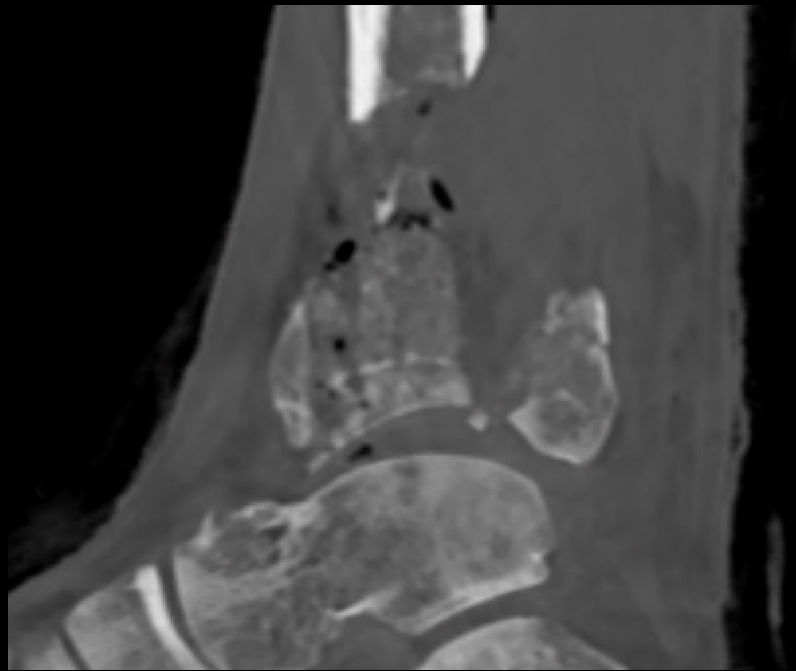
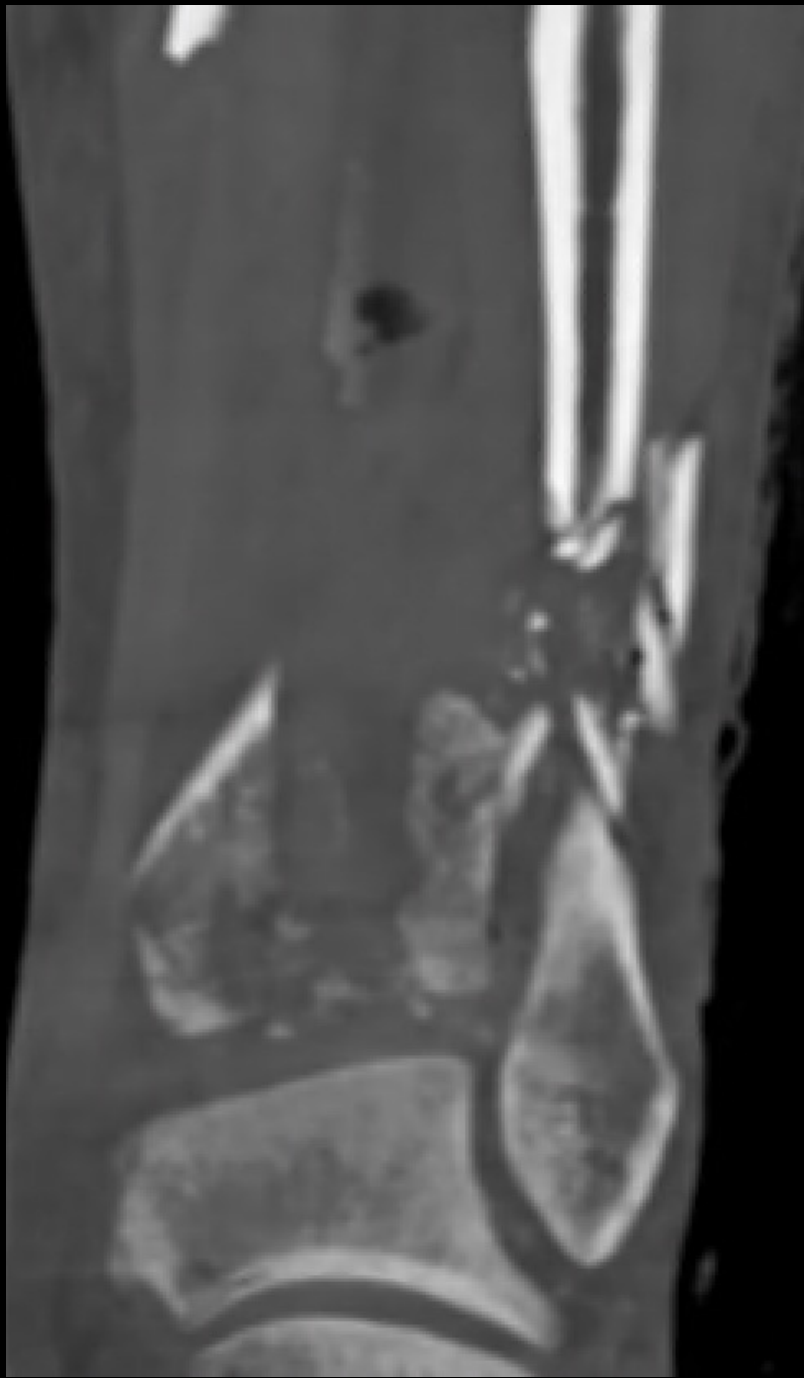


D



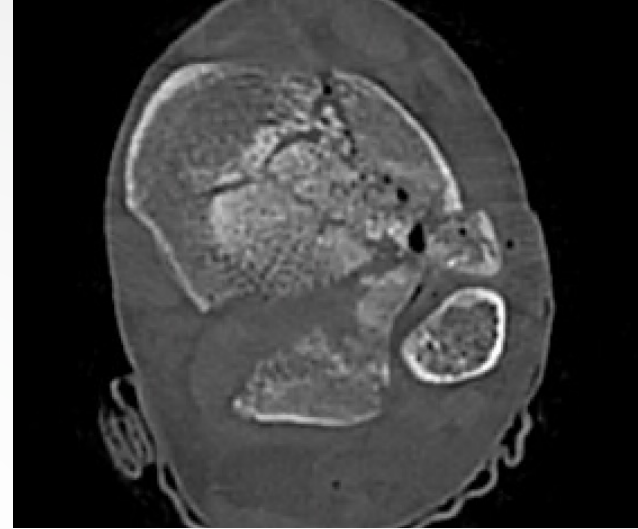






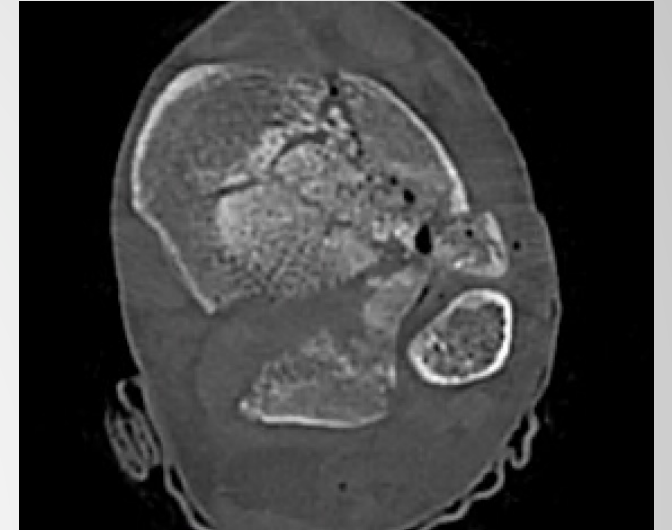
How to fix the pilon fracture ?

- Which **approaches** ?
 - medial
 - anterior / antero-lateral
 - posterior-lateral
- How many **plates** ?
- Articular reduction & **keep Exfix** ?
- How to address the **fibula** ?
- 1 stage surgery ?



Plan :

- 1) **Medial MIPO** to restore medial column to the meta-diaphysis
- 2) **Antero-lateral** for articular reduction and metaphyseal bone grafting
- 3) **Fibula MIPO**
- 4) If necessary secondary **posterior-lateral** approach for Volkman fragment



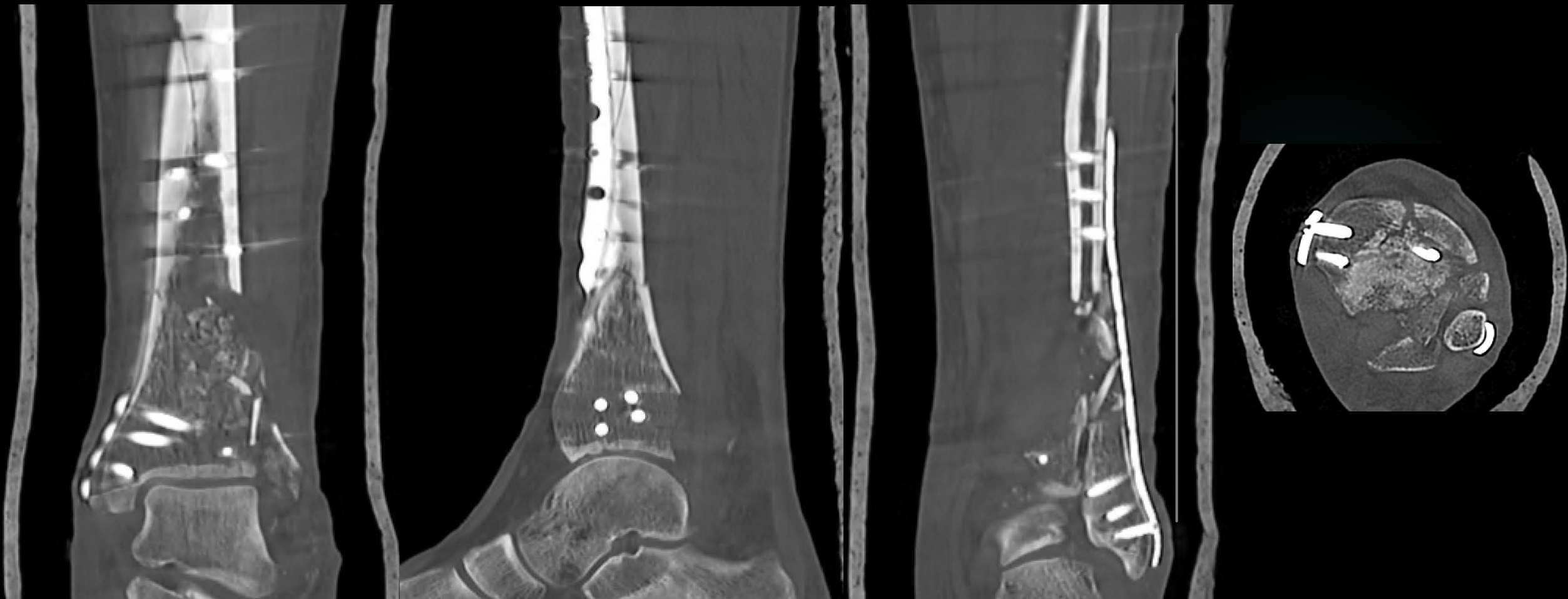


G



G





Post-op

- Right tibia :
 - scars are clean
 - skin necrosis
 - no weightbearing
 - no immobilization
 - clinically good
- Left tibia :
 - good healing of soft tissues
 - no weightbearing
 - casting 15 days then passive and active ROM
 - clinically good



2 months post-op

- Right tibia :
 - open fracture wound not good
 - GP treated with IV AB and local plasters (8 days)
 - X-rays : no healing
- Left tibia :
 - scars look good, good ROM, no pain
 - has been partially weightbearing...
 - X-rays : no healing



Tibial nail infection at 8 weeks



Bone :

- Nail retention ?
- Exfix ?
- Exchange nailing ?
- "Spacer" ?

Soft tissues :

- VAC ?
- Flap ?

Tibial nail infection at 8 weeks



AB window (10 days)

- Bone :
 - Took out the nail
 - Multiple biopsies
 - Reamed tibia
 - low P antegrade irrigation
 - Exfix

- Soft tissues :
 - Debridement
 - large serrated free flap
 - secondary skin grafting



Microbiology :

Polymicrobial infection

- **Staph. aureus** (multiresistant)
- *Peptostreptococcus prevotii*
- *Prevotella bivia*

After 6 weeks of IV AB :

- took out Exfix
- new debridement & reaming
- antegrade low P irrigation
- cement "Spacer" (Gentamycin)
- cast

- flap looking good
- negative CRP and VS
- no infectious signs



During that time, patient
is full weightbearing on
the left leg...

Still smoking & drinking

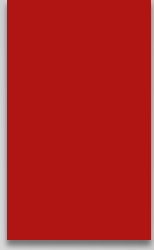


- Full ROM
- no pain
- painless weightbearing

What to do now ?

- infection ?
- lack of stability ?

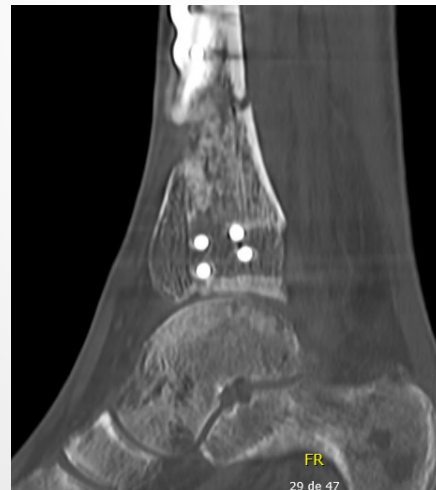
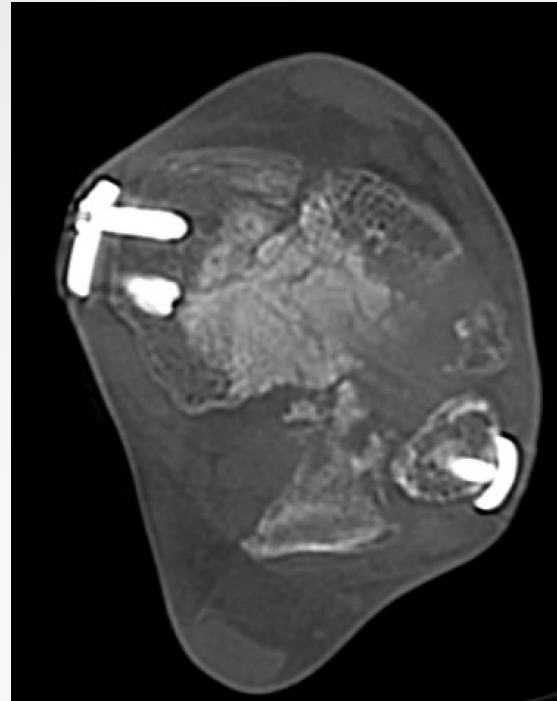
What went wrong ?



Insuffisant soft tissues !

- Too early definitive treatment ?
- Insuffisant initial debridement ? (Gustillo IIIb ?)
- Insuffisant ABtherapy ? (72h IV Cefazolin)

What went wrong ?



Insuffisant stability !

- No fixation of **Volkman & Chaput** fragments !
- Long working distance of the fibula plate
- Insuffisant articular reduction

What could have been done ?

- transsyndesmotic screws
- postero-lateral tibial plate
- Chaput screw fixation

To be continued...

Thanks for your attention

