X. Crevoisier

Revision Surgery in Total Ankle Replacement

4th F&A Symposium

2012-09-21, 14h00-14h20, Balgrist ZH

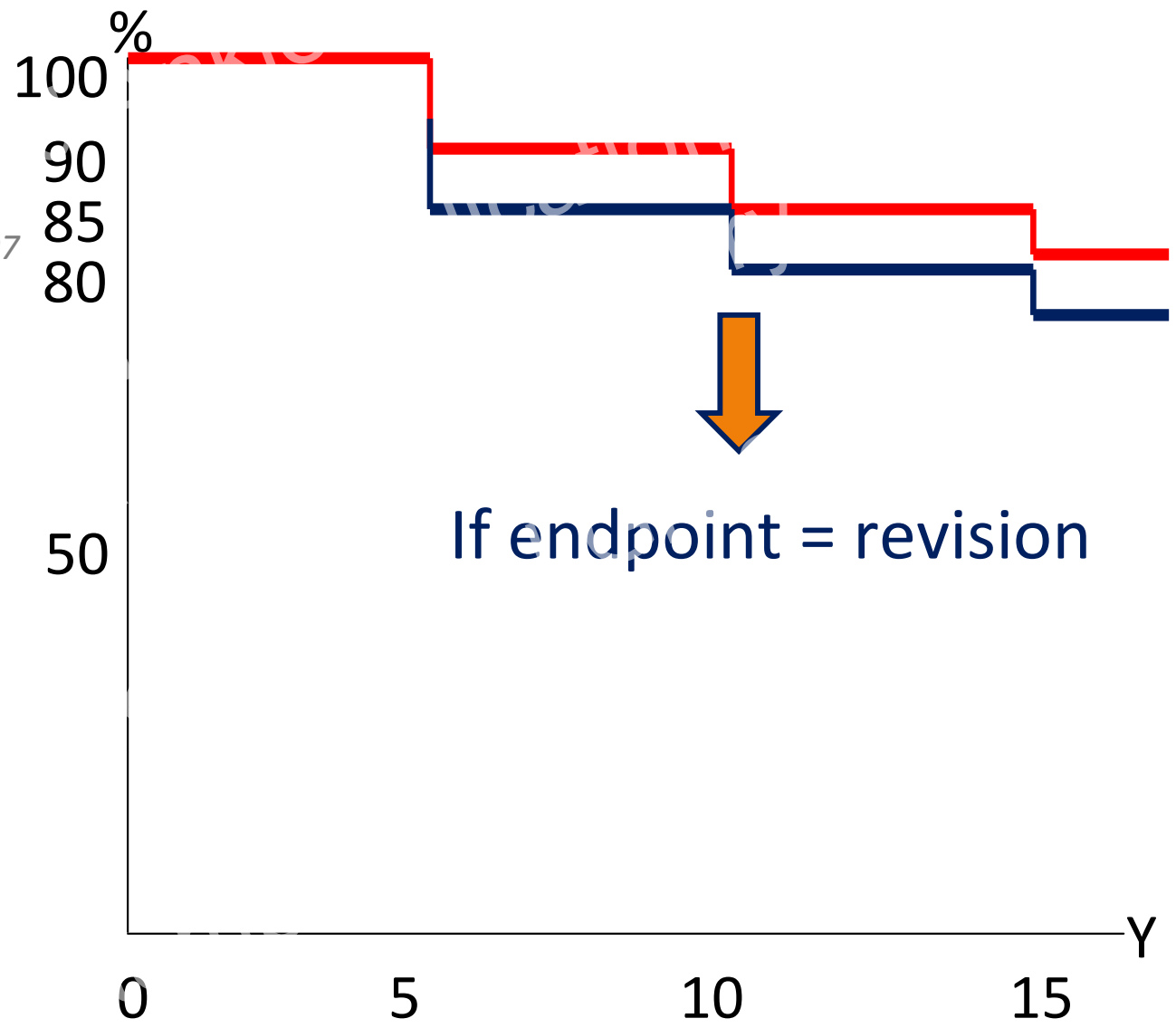
Service de chirurgie orthopédique et de traumatologie

Introduction

Registers

n = 2300

Fevang BT et al Acta Orthop 2007
Henricson A et al Acta Orthop 2007
Labek G et al JBJS-Br 2011
Skyttä ET et al Acta Orthop 2010



Survival rate

- 90% at 5 years
- 85% at 10 years
- 80% at 15 years

Overall **implant** revision rate at 10 years

11 (5-25)%

Loosening
5-10 %

Failure
Malposition
2-5%

Infection
1-4%

Other
1-10%

60% Exchange

40% Take down to fusion

Overall revision rate at 10 years

Up to 40%

- Soft tissues
- Impingement
- Fractures
- **Cysts !**
- Other…

__Bonnin & Ellis__ TAR Today, CIC ed. Int, in press; __Labeck G__ et al FAI 2011;

__Hintermann B__ et al Orthopäde 2011; __Gougoulias__ et al CORR 2010

Cysts: Incidence = 0-60%

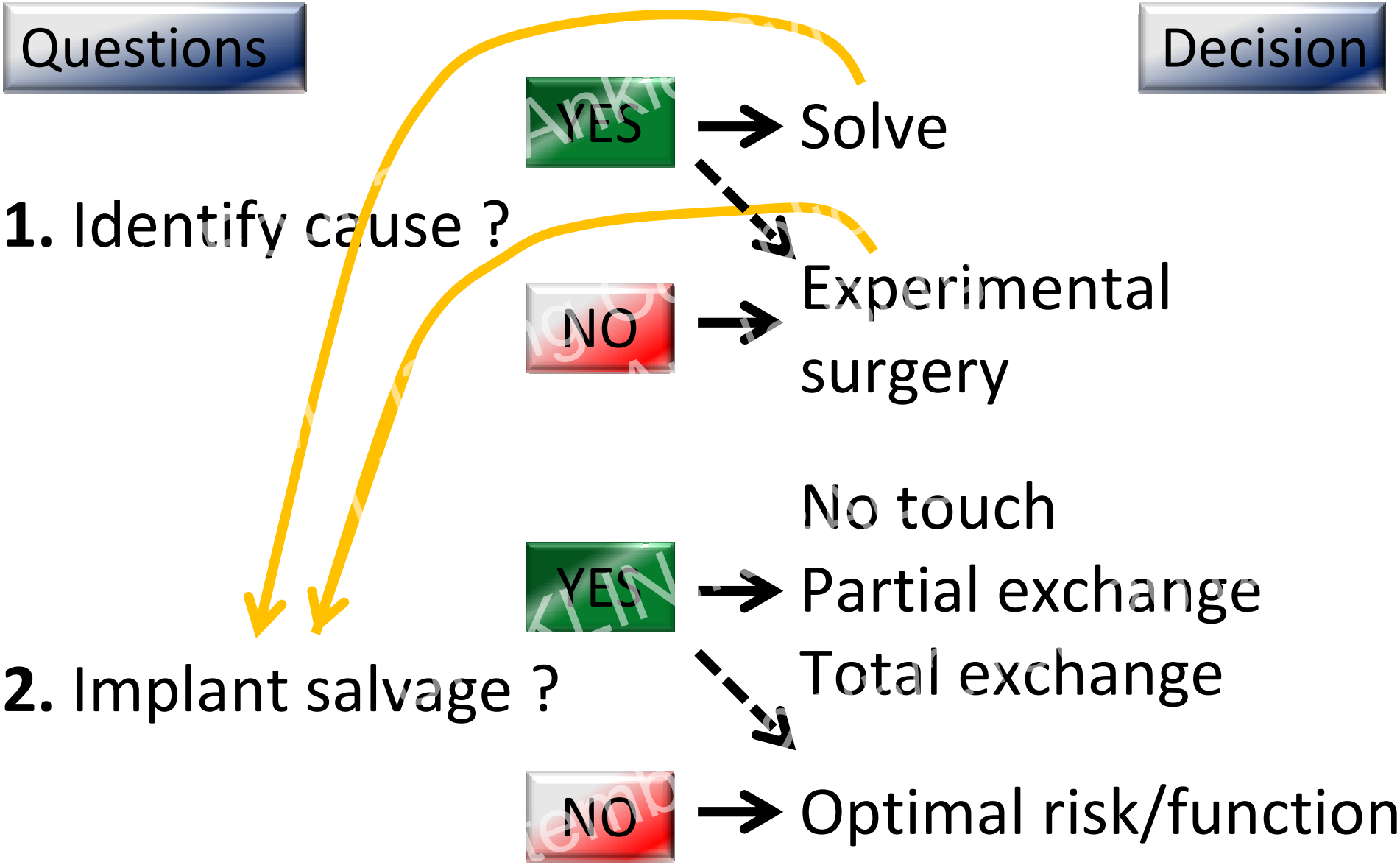
Pathogenesis

Besse J FAI 2009

Crevoisier&Assal RevMedCH 2006
Wood PL JBJS-B 2003
Anderson T JBJS-A 2008
Buechel FF FAI 2003

- Micromotion
- Polyethylene wear → granuloma
- Metal wear → particles
- Progression of original cysts

Revision surgery



Revision surgery

My purpose

- Focus on intra-articular
- Share personal experience

Illustrative situations of revision

LS-GE : 25 / 170 : **15%**

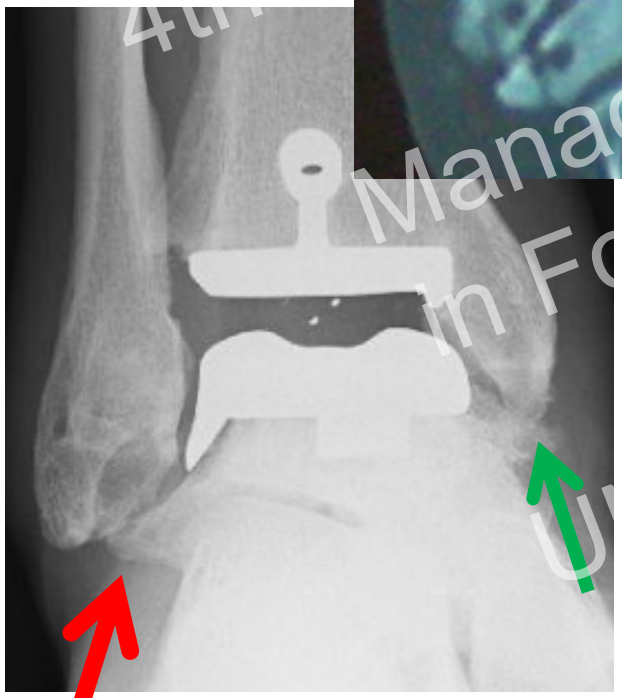
8 Cysts
5 Impingements
5 Infections
3 Dislocations
1 Fracture
1 Talar necrosis
2 Other

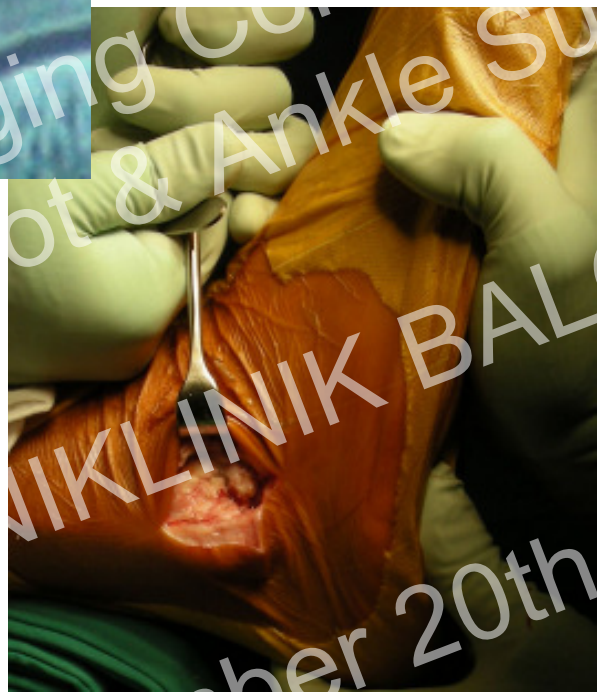
19 implant salvage / exchange

6 take down to fusion

Impingement : 5 cases

MA 45y





Impingement

Lessons

Prevention

- Careful cleaning of the gutters

Action

- Early revision >>> powerful

Infection : 5 cases

PJ 51-52y

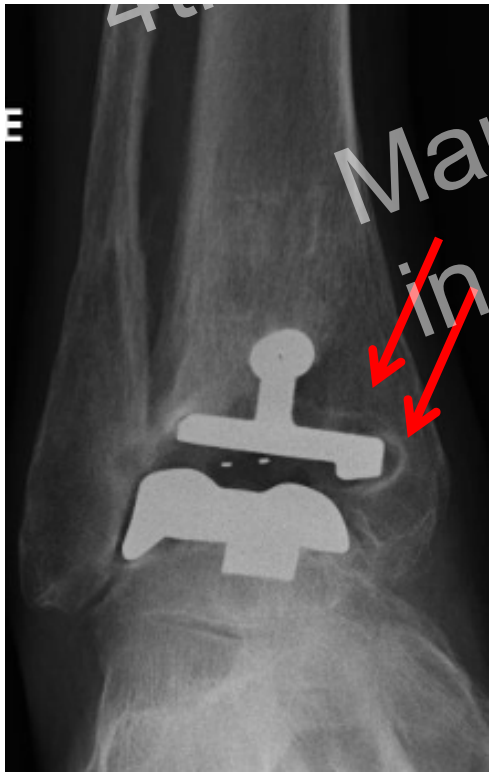
- Post traumatic

- Favorable outcome

Infection

PJ 53-54y

- Outcome unchanged
- Occasional swelling



2 Y

- Outcome ↓
- Little swelling & pain ↑

3 Y

Infection

PJ 54y

- Aspiration : neg
- CRP>20

- 2 stages exchange
- Sonication : prop. Acnes
- Atb iv >>> po 3 Mo

Infection

+ general health ↓

4 Mo

PJ 54y

Infection

Lessons

- CAVE painful TAR « without » explanation

Prevention

- Usual precautions

Action

- Early infection → mobile parts exchange
- Late infection → 2 stages exchange or conversion
- Apply optimal risk/function principle

Dislocation : 3 cases

SR ♀ 63y

- Post traumatic
- Long standing varus

Post OP

Dislocation

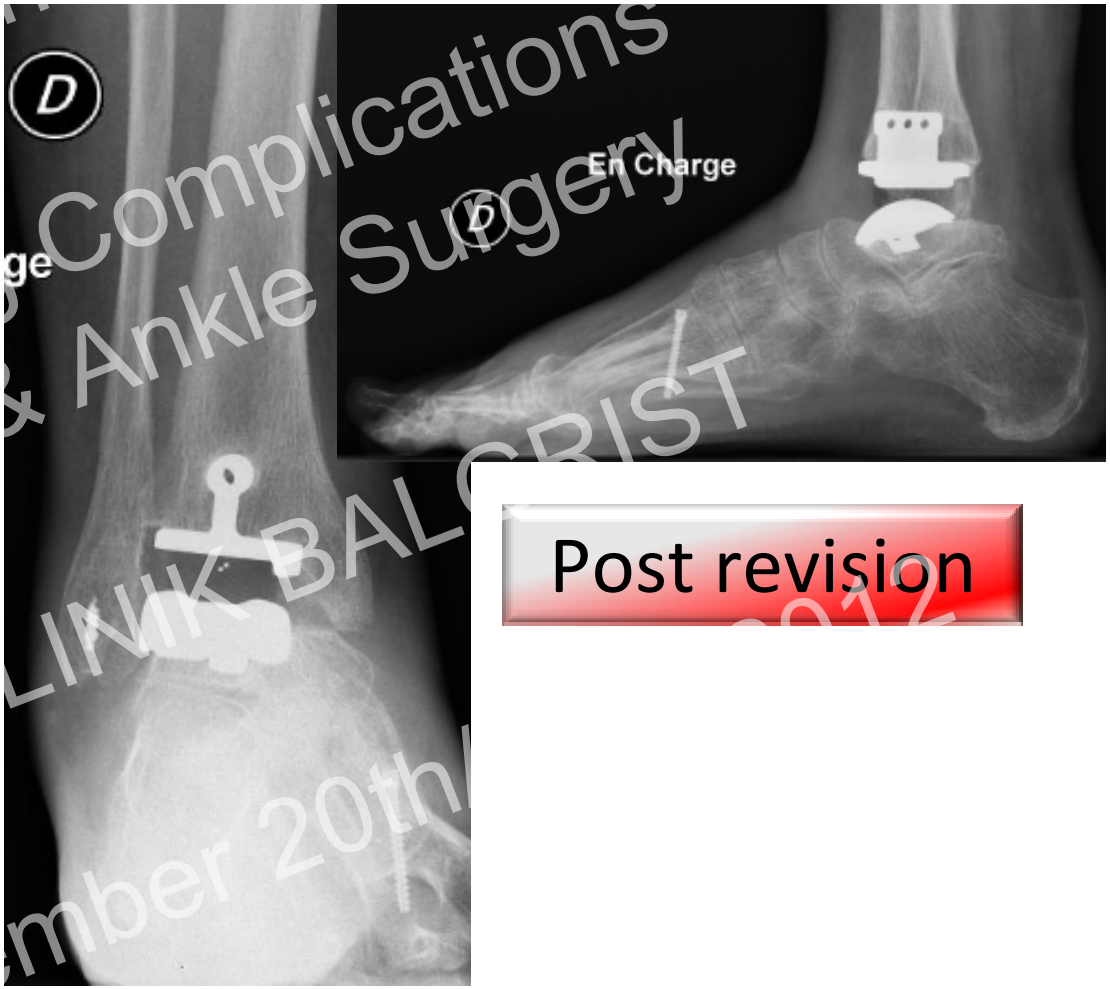
SR 63y

6 weeks

Intra-articular mismatch

Dislocation

SR 63y



Post revision

Dislocation

Lessons

- Increase accuracy in preoperative planning

Prevention

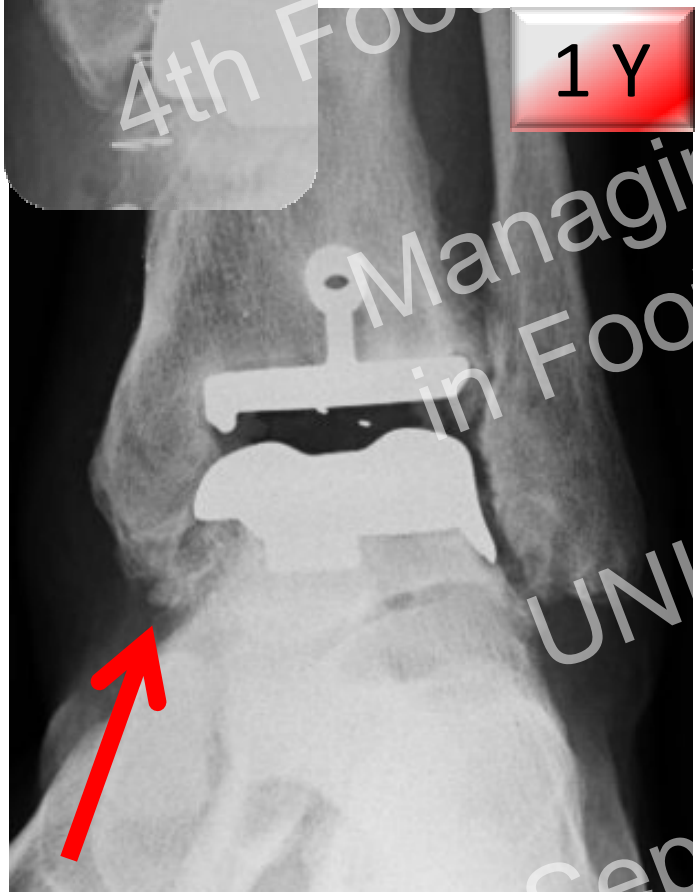
- Do not leave OR without perfect balancing/kinematics
- Fixed-bearing ?

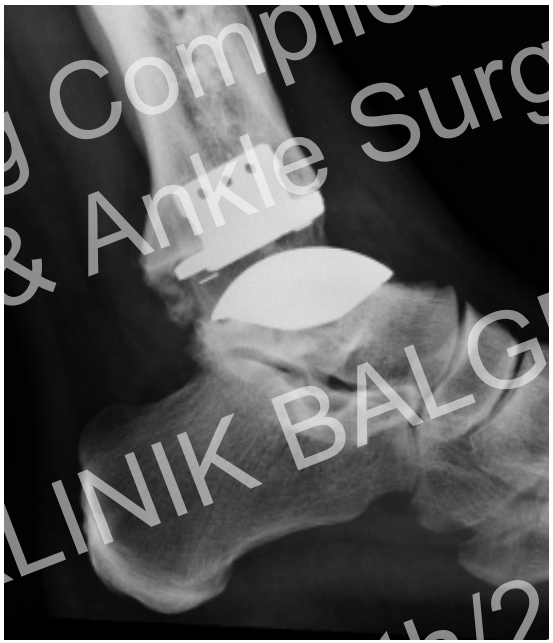
Action

- Revision mandatory
- Identify extra-articular vs intra-articular origin
- Wait for adequate weight bearing + adequate skin conditions

Cysts : 8 cases

JA 49y

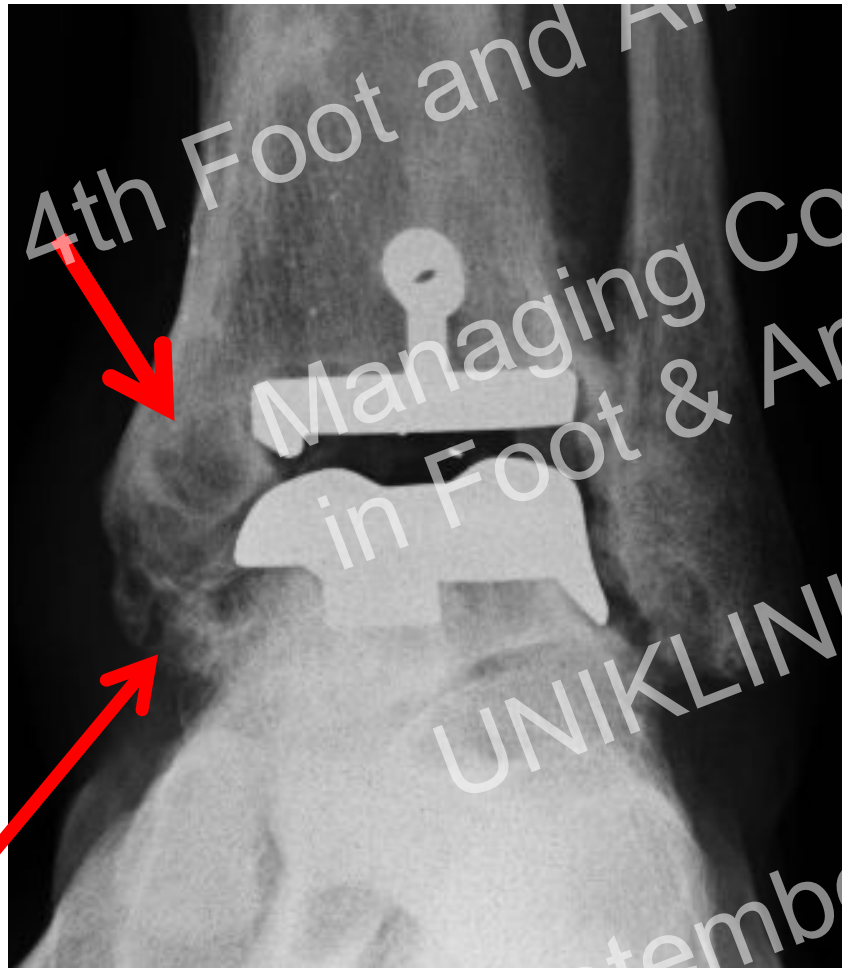




- Some pain medial malleolus
- Farmer 100%
- Skiing / Hiking

Cysts

JA 51y



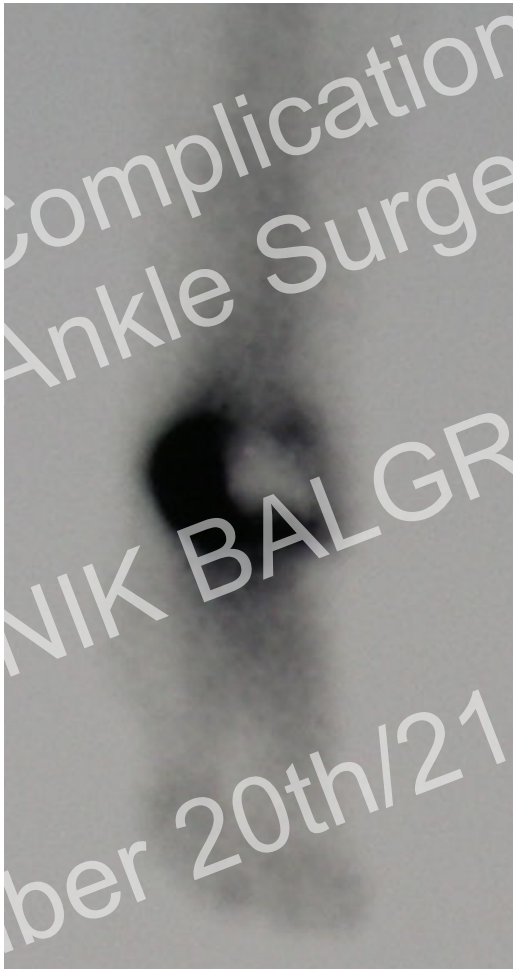
3 Y

- ↑ Pain medial malleolus
- ↑ Swelling
- Skiing / No more hiking
- Farming ↓50%

Cysts

CT & Spect CT

JA 51y



Experimental surgery

Resection of the medial malleolus

JA 51y

Resection of the medial malleolus

- No instability / laxity ; AOFAS 83 ; farming-skiing-hiking 100%

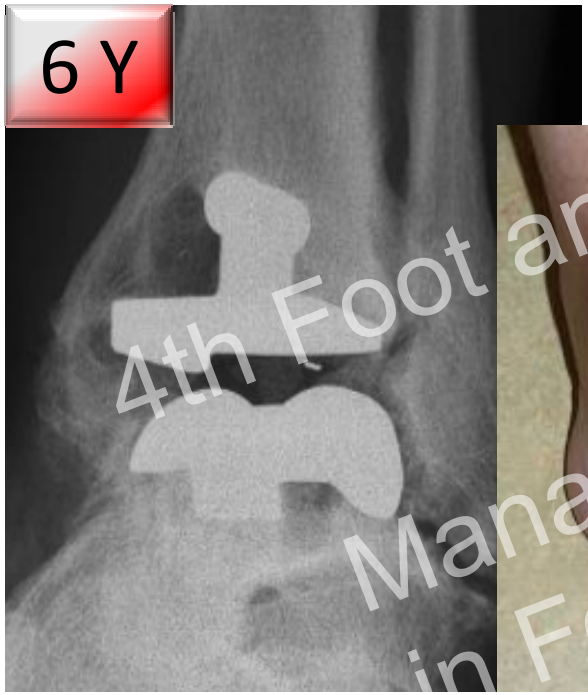
Cysts

GM 65-70y

- No pain / good function
- Occasional swelling

Cysts

6 Y



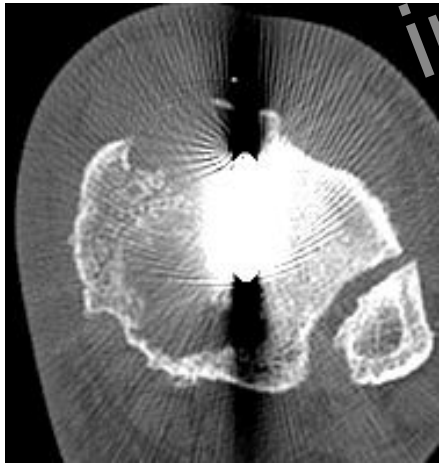
GM 71y

- CRP <5
- Culture : neg
- Low pain

Experimental surgery

Curetage – cementation – PE exchange

GM 71y



Curetage – cementation – PE exchange

GM 72-73y

1 Y

2 Y

5 Y

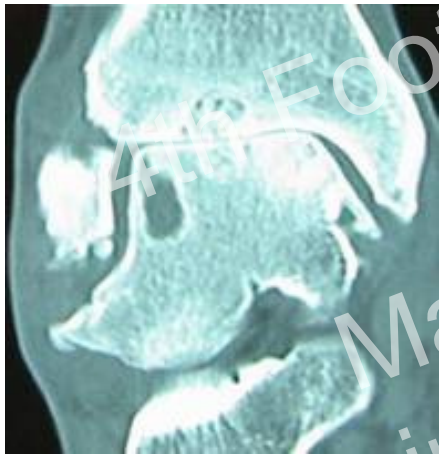
?

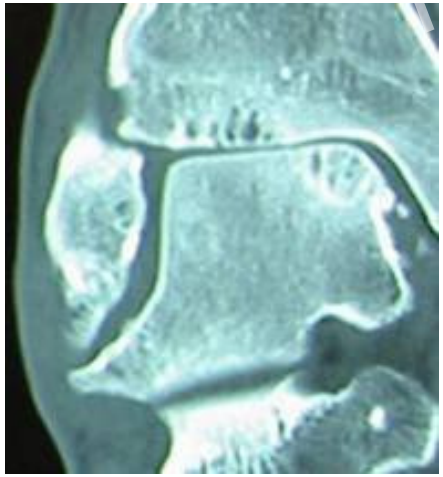
- Low pain
- Good function
- No inflammation

Cysts

MA 44y

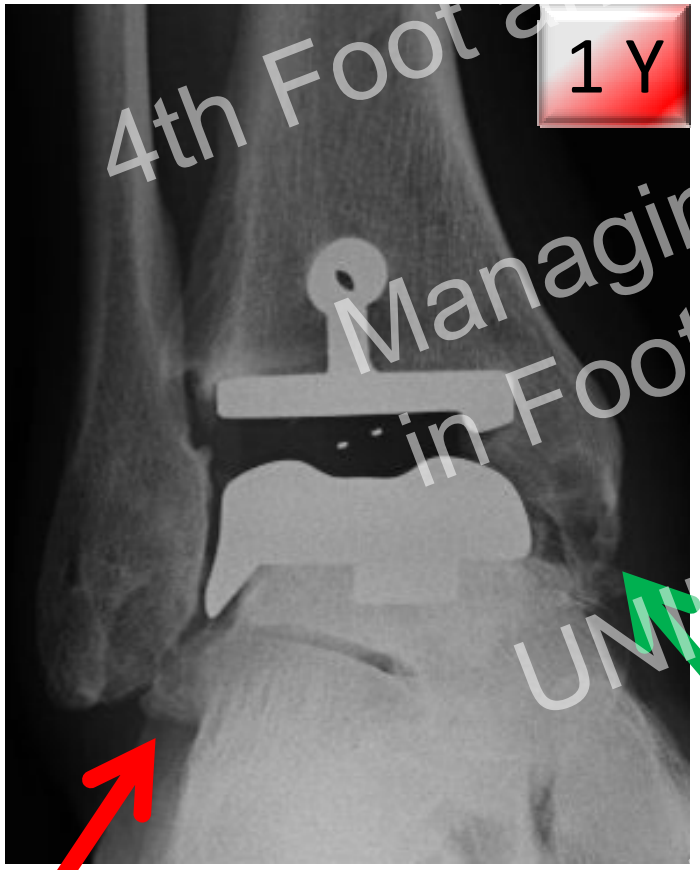
- Post traumatic
- High sports level





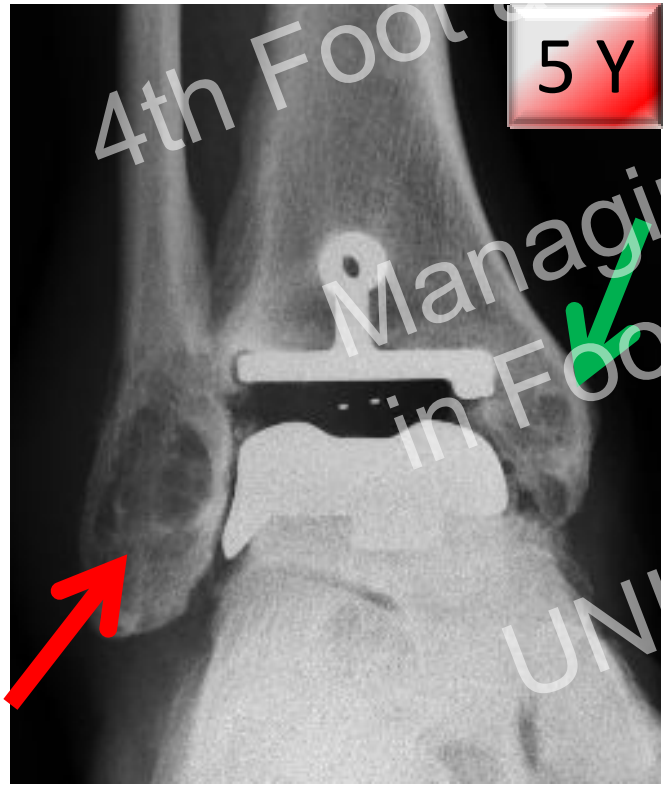
Cysts

MA 45-46y



Cysts

MA 49y



Experimental surgery

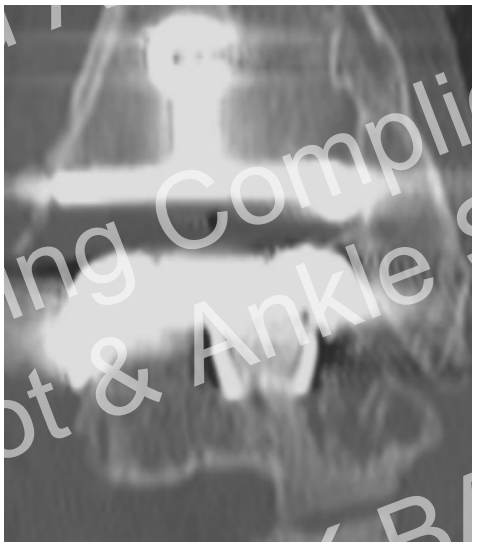
Curetage – autograft

MA 49-50y

Cysts : talar side

Autograft + ST fusion

RC ♀ 57-58y



Cysts

Lessons

- Our cases : microbiol./ patho./ electr. microscopy : NEGATIVE

Prevention

- Preop CT → fill the subchondral cysts
- Obturate / clean
- Fixed-bearing ?

Action

- Revision f(pain) + f(risk for loosening – bone loss)
- Prefer autograft ***Judet Th*** *Salto Exp Meeting, Paris 2011*
- CAVE talus

Talar necrosis : 1 case

RM 69-72y

- Moderate pain medial and lateral
- Swelling

Talar necrosis

Autograft + Nailing + Plating

RM 72y

Talar necrosis

RM 73y

1 Y

Talar necrosis

Lessons

Prevention

- Economic talar cut

Action

- Autograft + calcanéo-talo-tibial arthrodesis
- Revision implants + autograft ?

Conclusion

TAR associated with high revision rate

Revision is challenging

- Understand the cause of failure
- Take the adequate decision
- Experimental surgery

Helpful for optimizing primary implantation

Revision implants


Thank you
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in Foot & Ankle Surgery
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