# ARTHROSCOPIC ANKLE FUSION





# SETTING, PORTALS

- SUPINE POSITION

# SETTING, PORTALS

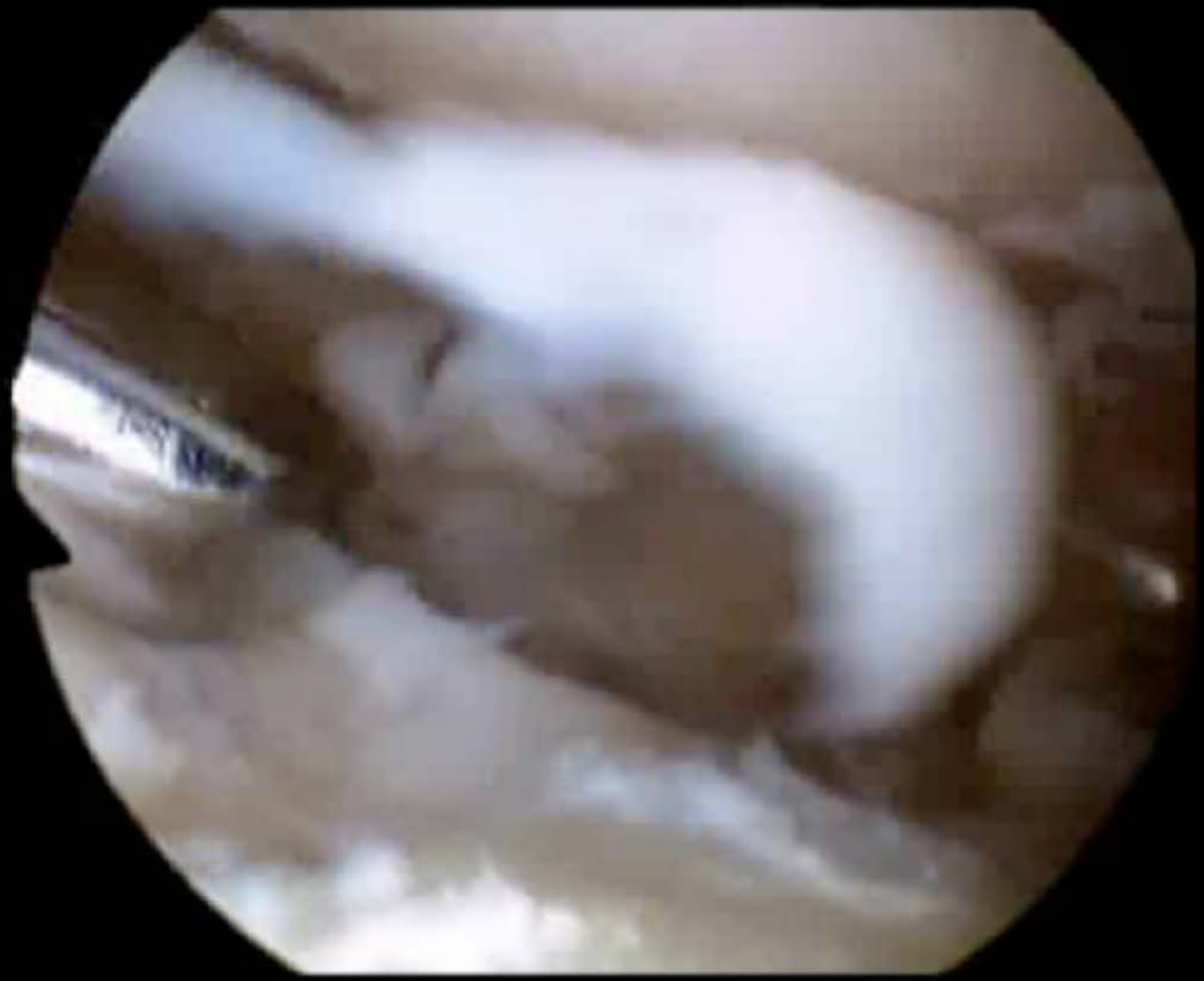
- ANTEROMEDIAL
- ANTEROLATERAL
- ACCESSORY PORTALS

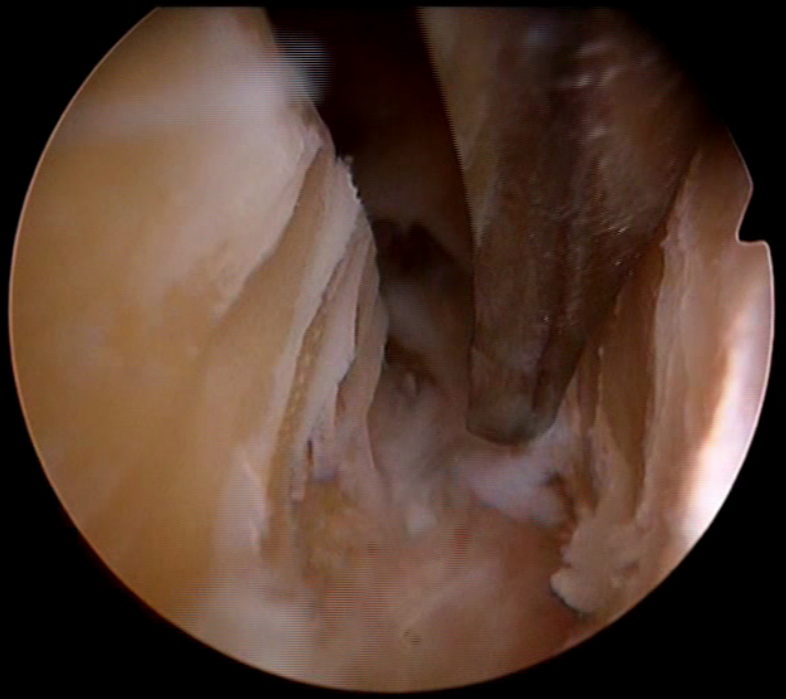
- PERONEAL SUPERFICIAL NERVE

# ARTHROSCOPIC STEPS

- 1: CARTILAGE REMOVAL
  - TALAR DOME, TIBIAL PLAFOND, GUTTERS
  - KEEP THE BONE SURFACE AND SHAPE
- 2: DRILLING, MILLING
  - SUBCHONDRAL BONE
- 3: FIXATION
  - ANKLE POSITIONING

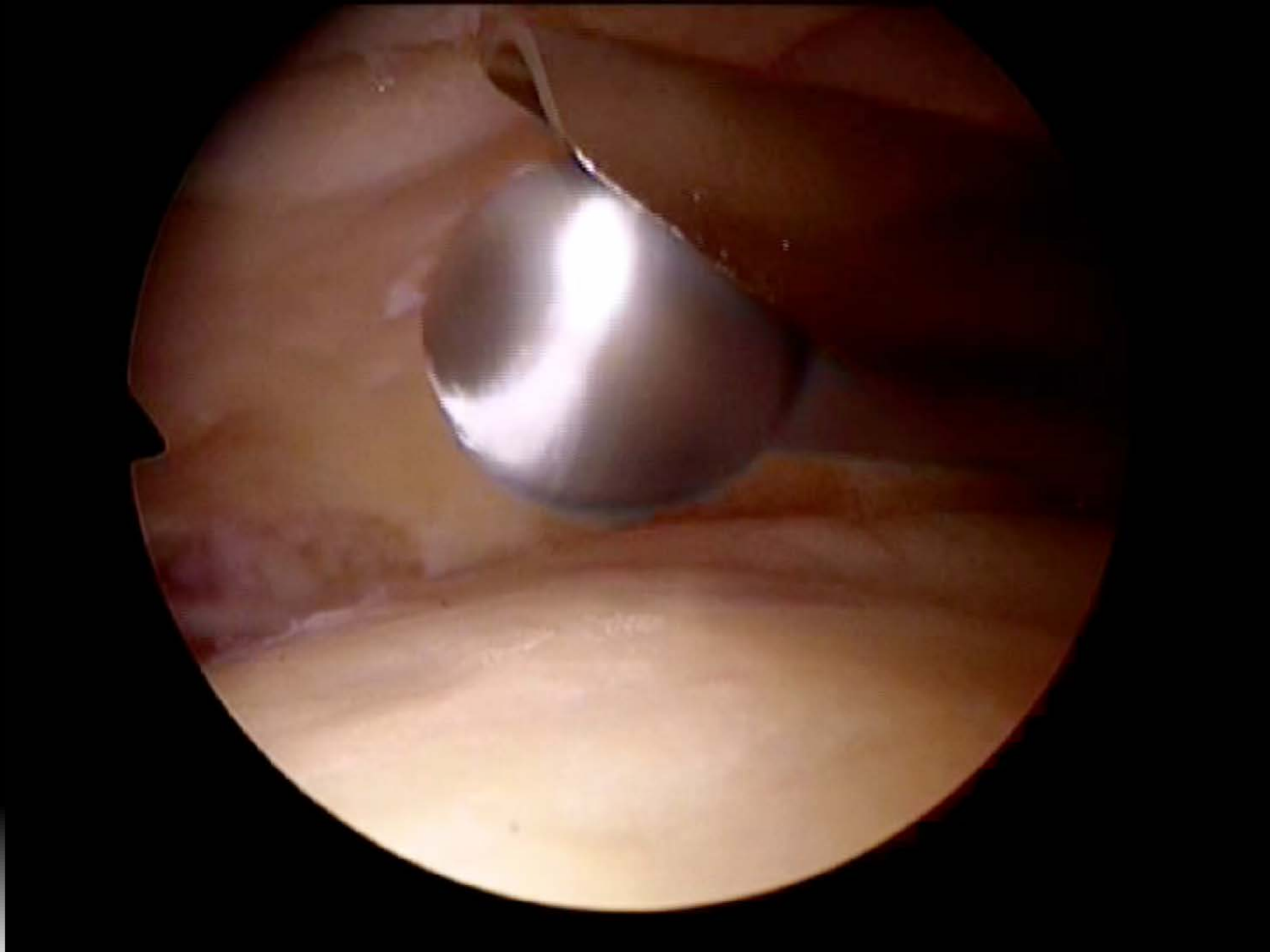


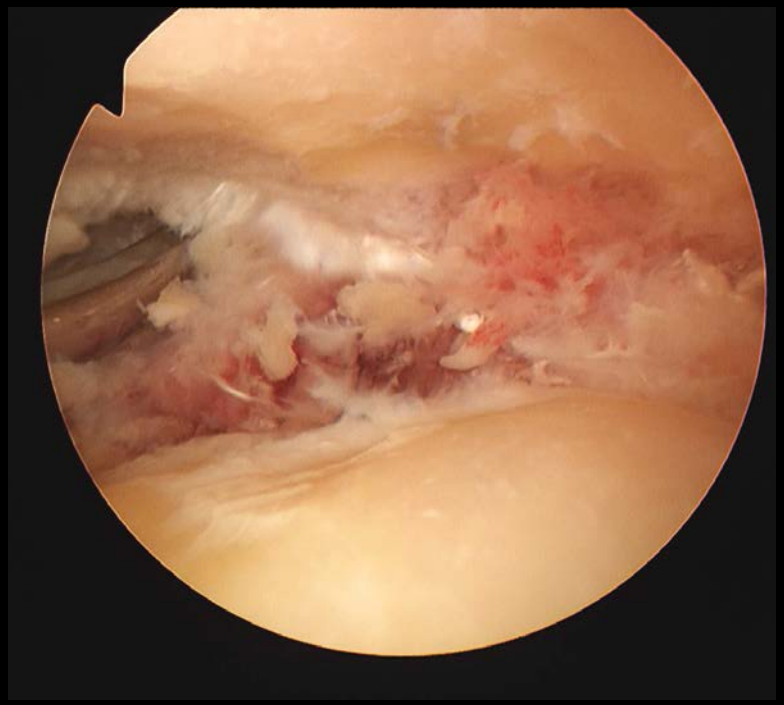
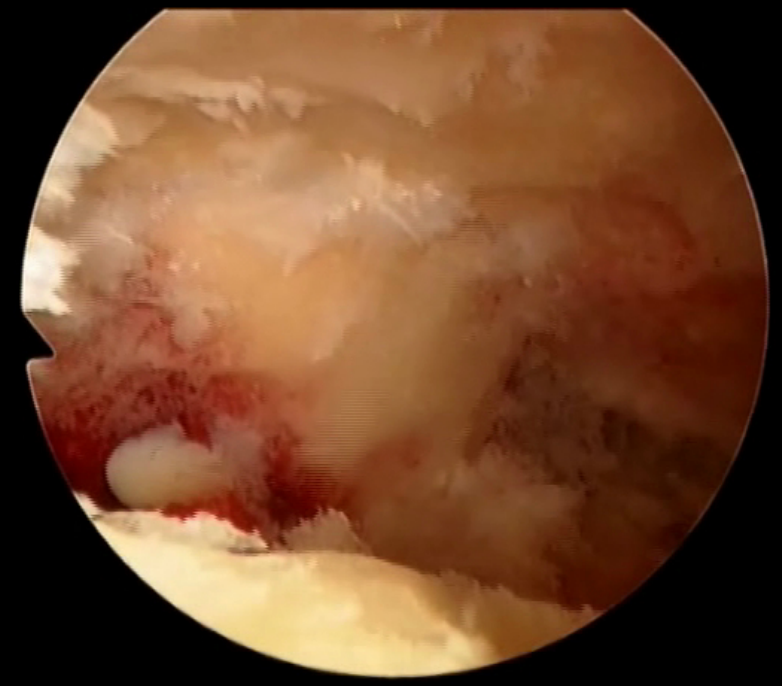
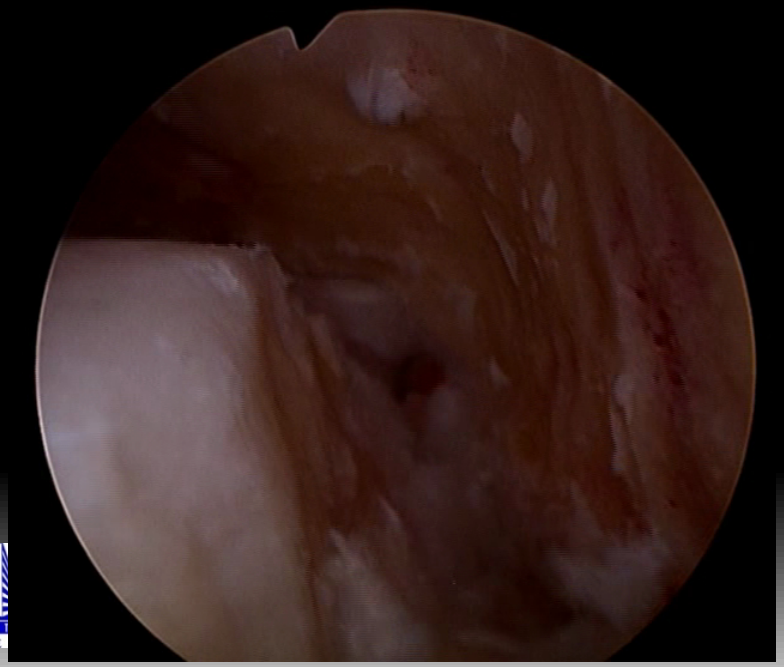
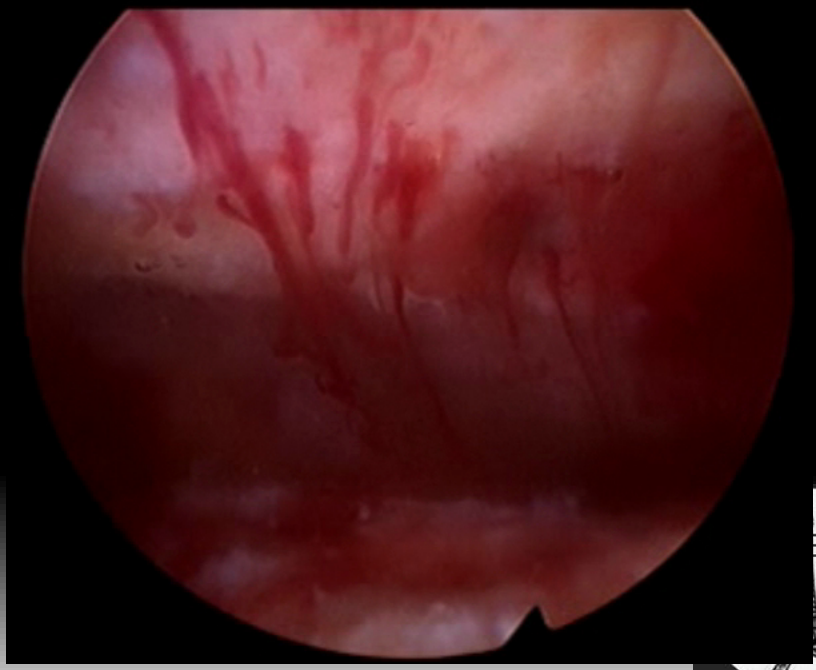


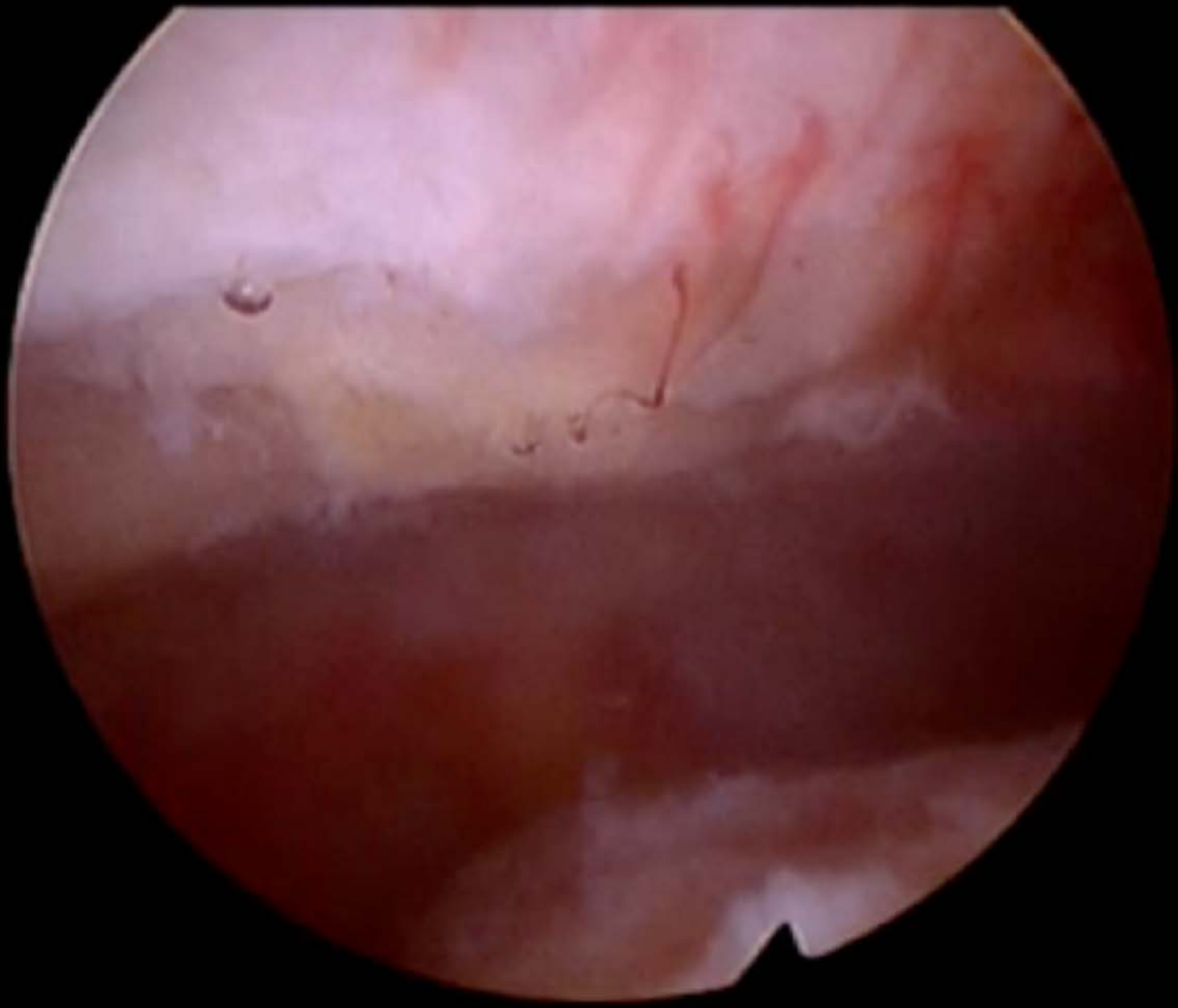


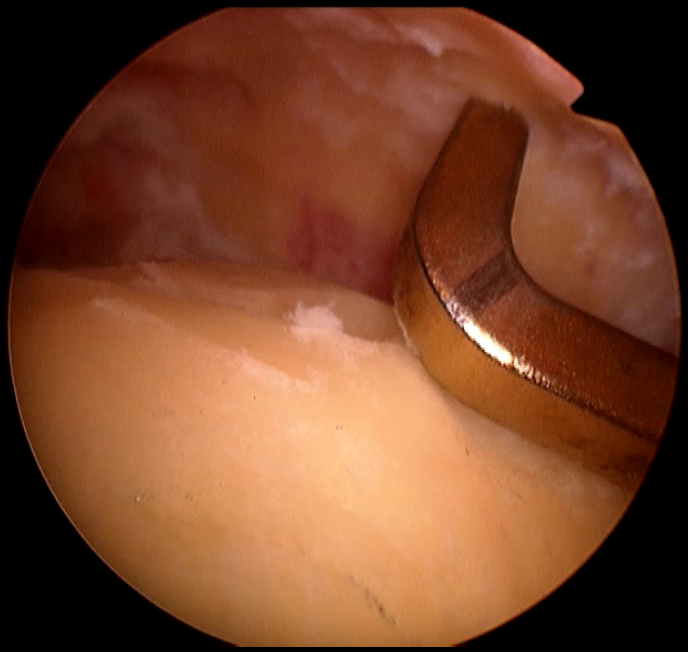
HOPITAL AMBROISE PARÉ

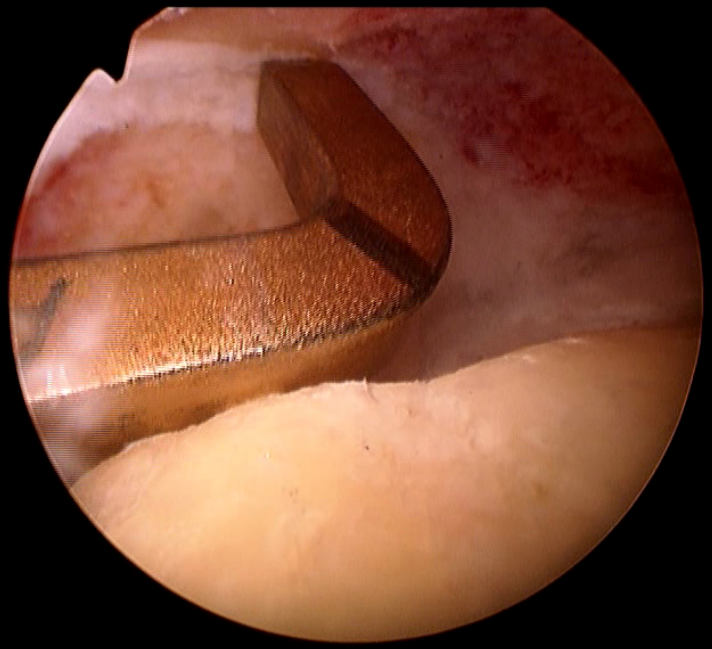
UNIVERSITÉ DE VERSAILLES SAINT-QUENTIN-EN-YVELINES



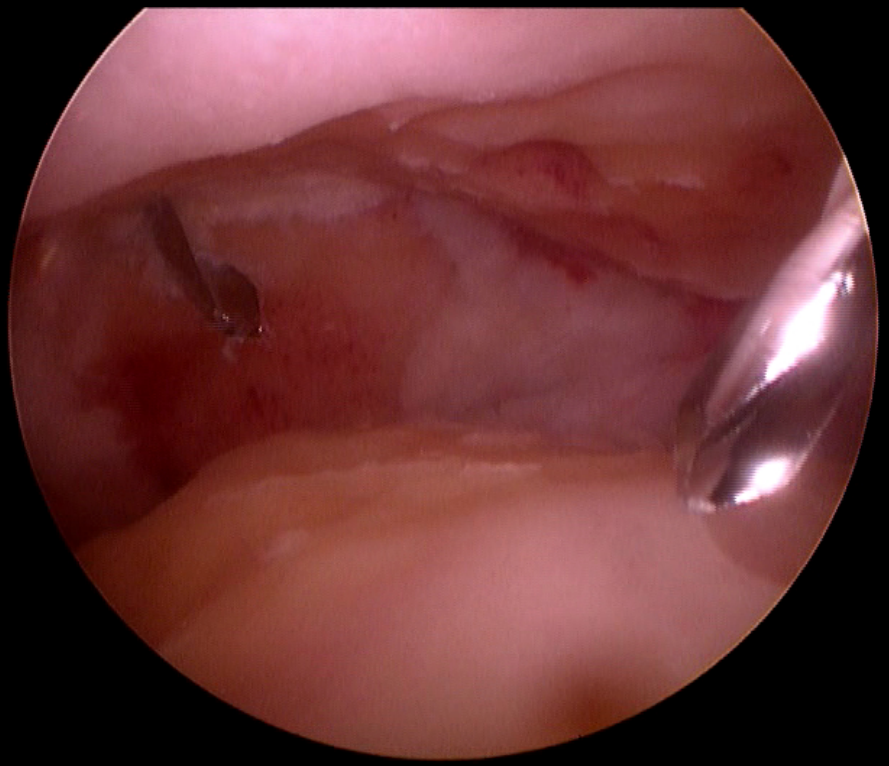


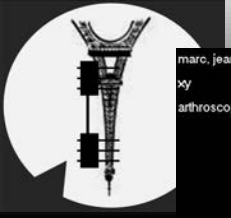




HOPITAL AMBROISE PARÉ

UNIVERSITÉ DE VERSAILLES SAINT-QUENTIN-EN-YVELINES

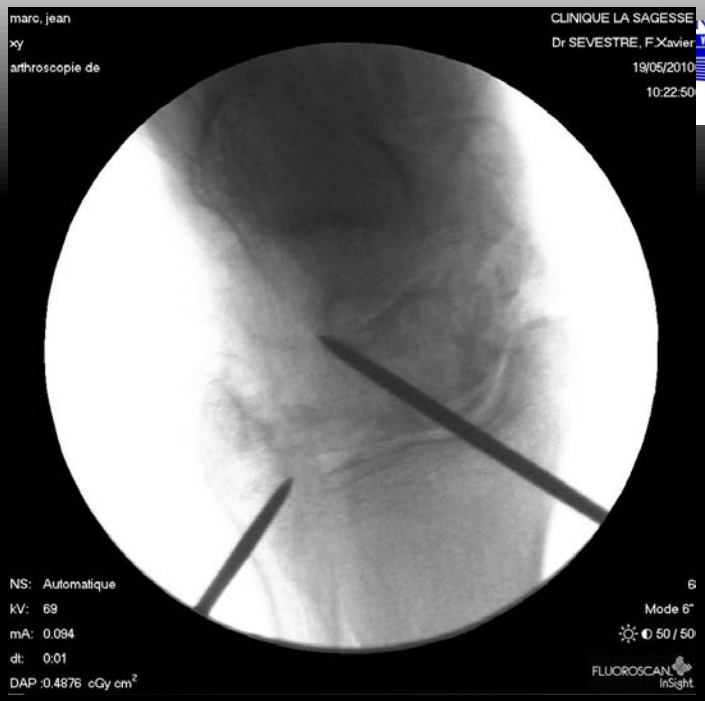





marc, jean
xy
arthroscopie de
CLINIQUE LA SAGESSE
Dr SEVESTRE, F.Xavier
19/05/2010
10:21:19
NS: Automatique
kV: 67
mA: 0.090
dt: 0:01
DAP :0.3099 cGy cm²
3
Mode 6"
50 / 50
FLUOROSCAN InSight


marc, jean
xy
arthroscopie de
CLINIQUE LA SAGESSE
Dr SEVESTRE, F.Xavier
19/05/2010
10:20:48
NS: Automatique
kV: 67
mA: 0.090
dt: 0:01
DAP :0.3670 cGy cm²
2
Mode 6"
50 / 50
FLUOROSCAN InSight


marc, jean
xy
arthroscopie de
CLINIQUE LA SAGESSE
Dr SEVESTRE, F.Xavier
19/05/2010
10:23:56
NS: Automatique
kV: 63
mA: 0.082
dt: 0:02
DAP :0.7824 cGy cm²
10
Mode 6"
50 / 50
FLUOROSCAN InSight


marc, jean
xy
arthroscopie de
CLINIQUE LA SAGESSE
Dr SEVESTRE, F.Xavier
19/05/2010
10:22:50
NS: Automatique
kV: 69
mA: 0.094
dt: 0:01
DAP :0.4876 cGy cm²
6
Mode 6"
50 / 50
FLUOROSCAN InSight

# AVOID EQUINUS


marc, jean
xy
arthroscopie de
CLINIQUE LA SAGESSE
Dr SEVESTRE, F.Xavier
19/05/2010
10:37:47
NS: Automatique
kV: 71
mA: 0.099
dt: 0:01
DAP :0.4053 cGy cm²
34
Mode 6"
50 / 50
FLUOROSCAN InSight


marc, jean
xy
arthroscopie de
CLINIQUE LA SAGESSE
Dr SEVESTRE, F.Xavier
19/05/2010
10:31:09
NS: Automatique
kV: 65
mA: 0.086
dt: 0:01
DAP :0.4090 cGy cm²
25
Mode 6"
50 / 50
FLUOROSCAN InSight


marc, jean
xy
arthroscopie de
CLINIQUE LA SAGESSE
Dr SEVESTRE, F.Xavier
19/05/2010
10:25:33
NS: Automatique
kV: 62
mA: 0.080
dt: 0:02
DAP :0.6688 cGy cm²
16
Mode 6"
50 / 50
FLUOROSCAN InSight


marc, jean
xy
arthroscopie de
CLINIQUE LA SAGESSE
Dr SEVESTRE, F.Xavier
19/05/2010
10:26:15
NS: Automatique
kV: 66
mA: 0.088
dt: 0:01
DAP :0.4962 cGy cm²
17
Mode 6"
50 / 50
FLUOROSCAN InSight


D

# RESULTS

- AVERAGE FUSION RATE: 90%
- SFA 1998
  - FUSION: 87%
  - NON UNION RISK FACTORS
    - EXTERNAL FIXATOR (23%) VS SCREWS (9%)
    - TIBIOTALAR SCREWS ALONE (13%) VS TT + FIBULOTALAR SCREWS (3%)

# RESULTS

- NON UNION RISK FACTORS
  - OBESITY, TOBACCO, AVN
  - RESIDUAL EQUINUS
- SHORTER DELAY OF UNION
  - 8.7 WEEKS VS 14.5 WEEKS

# DIFFICULTIES

- SURGEON EXPERIENCE
- LONGER OPERATIVE TIME

# PITFALLS

- RESIDUAL EQUINUS
- ANTERIOR TALAR TRANSLATION

# INDICATIONS

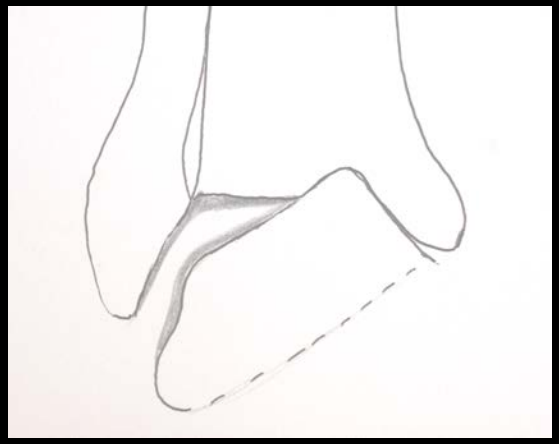
- NO MAJOR BONE LOSS
- FRONTAL AND SAGITTAL DEFORMITIES
  - BASICALLY: <15°
  - EXTENDED INDICATIONS
    - Cannon (foot ankle int. 2004)
    - Winson (JBJS B 2005)
    - FX Sevestre (SFA, GRECMIP)
    - Gougoulias (foot ankle int. 2007)
      - » 2 groups : A ( 48 < 15° ) VS B ( 30 > 15° max 45° )
      - » Same 97 % fusion, axial correction in 2 groups
      - » Good release of the gutters



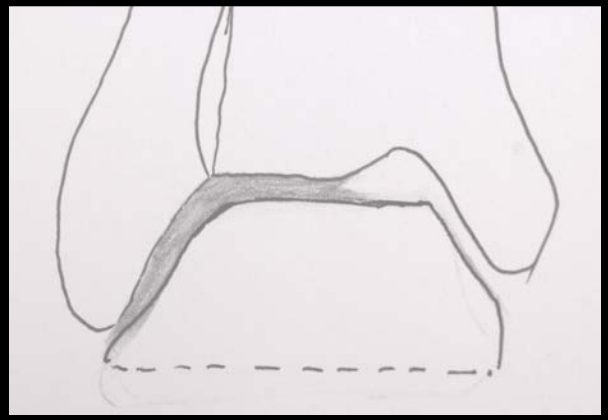
???

HOPITAL
AMBROISE PARE
UNIVERSITÉ DE VERSAILLES
SAINT-QUENTIN-EN-YVELINES

Frontal malalignment = asymmetric wear increased by a laxity in the convexity of the deformity



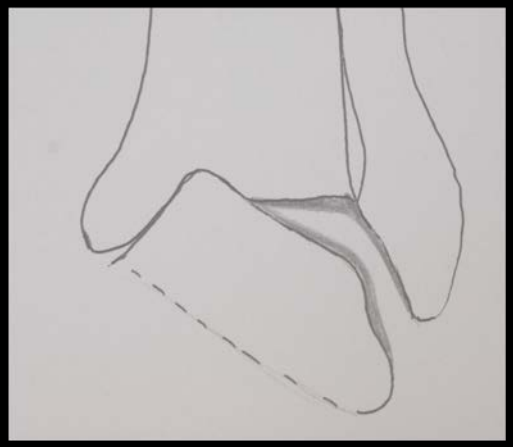

Reducibility can be easily appreciated by a dynamic radiograph preoperative

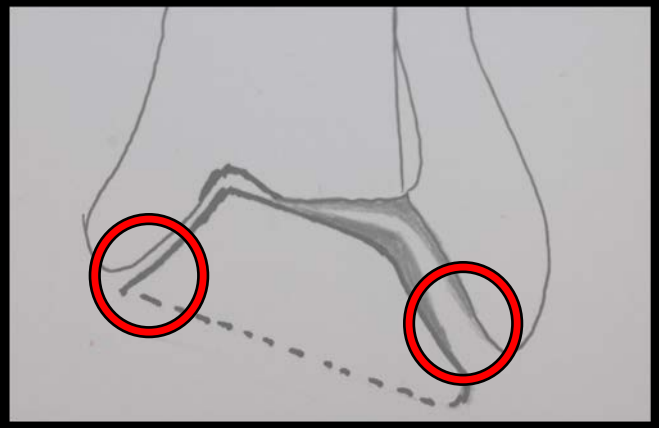


COMPLETE REDUCIBILITY

EASY ARTHROSCOPIC PROCEDURE

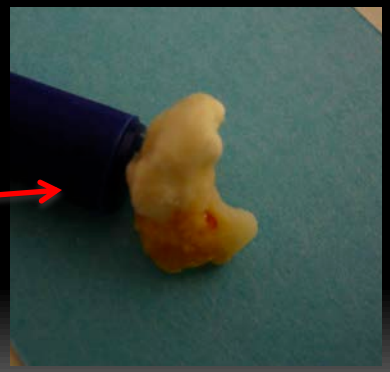
A partial reduction of the déformity must be completed by a gutters optimal release, with arthroscopic arthrolysis



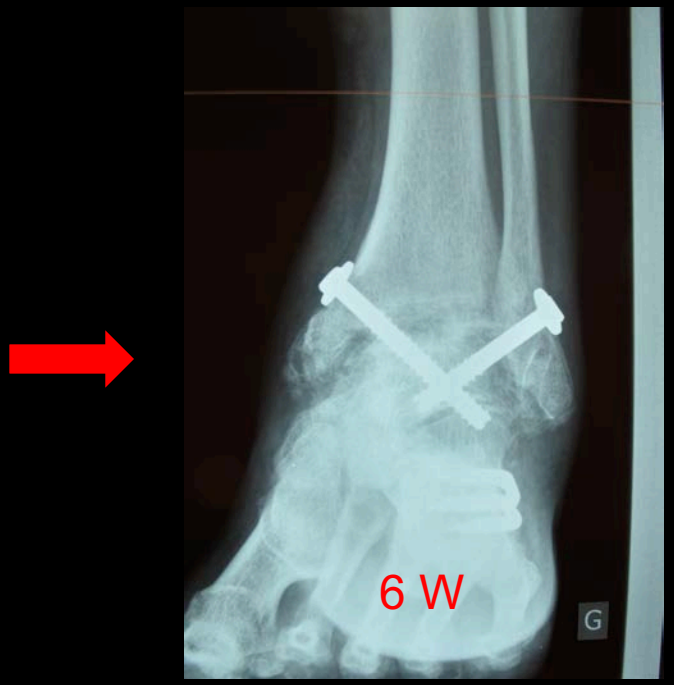


Partial reduction

More difficult arthroscopic time

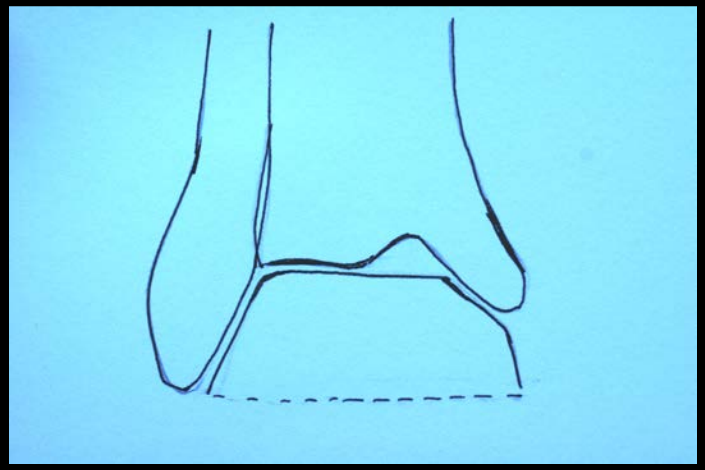



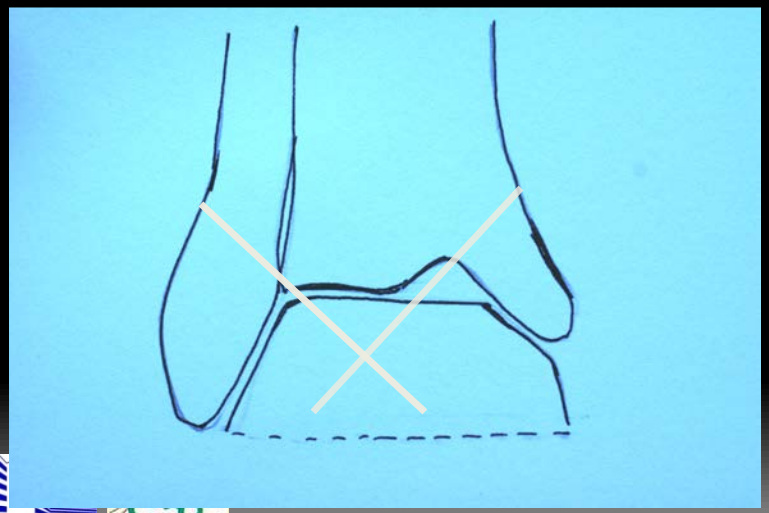
Bone fragment from the medial arthroscopic arthrolysis

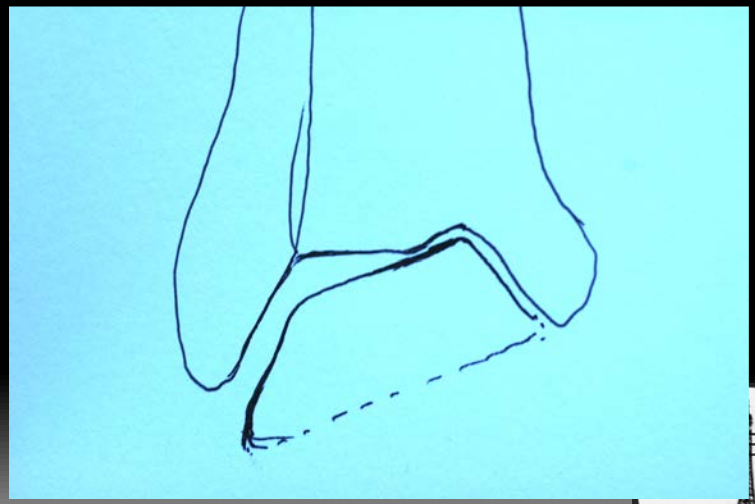

6 W
G

# Last difficulty at the time of fixation

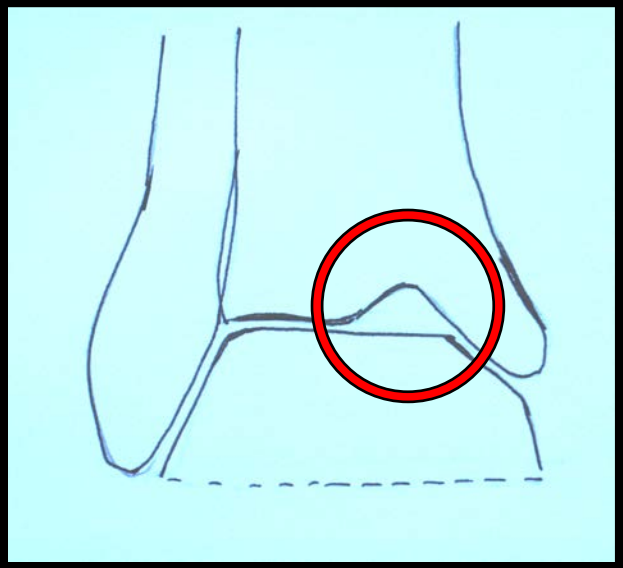
# Don’t fall in the bone defect !!!







# bone defect




HOPITAL AMBROISE PARÉ

UNIVERSITÉ DE VERSAILLES SAINT-QUENTIN-EN-YVELINES

# CONCLUSION

- Majority of coronal deformities
  - BUT NOT AT THE BEGINNING OF YOUR EXPERIENCE !!!
- Importance of dynamic radiograph
- Technical difficulties:
  - If partial reducibility / arthroscopic arthrolysis
  - Don’t fall in the defect at ostesynthesis time