

Cases discussion: Failed ACL



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Successful outcome

- Indication
- Surgical technique
 - Tunnel positioning
 - Graft choice
 - Graft tensioning
 - Fixation
- Proper and effective rehabilitation
- Return to play

Patient & Surgeon

Surgeon

Patient & Rehab team

Patient & Surgeon & PT

ACL failure

- Functional instability with sports or activities of daily living
- Increased pain
- Loss of motion
- Recurrent episodes of giving way
- SSD diff. > 5 mm, Positive Lachman and pivot

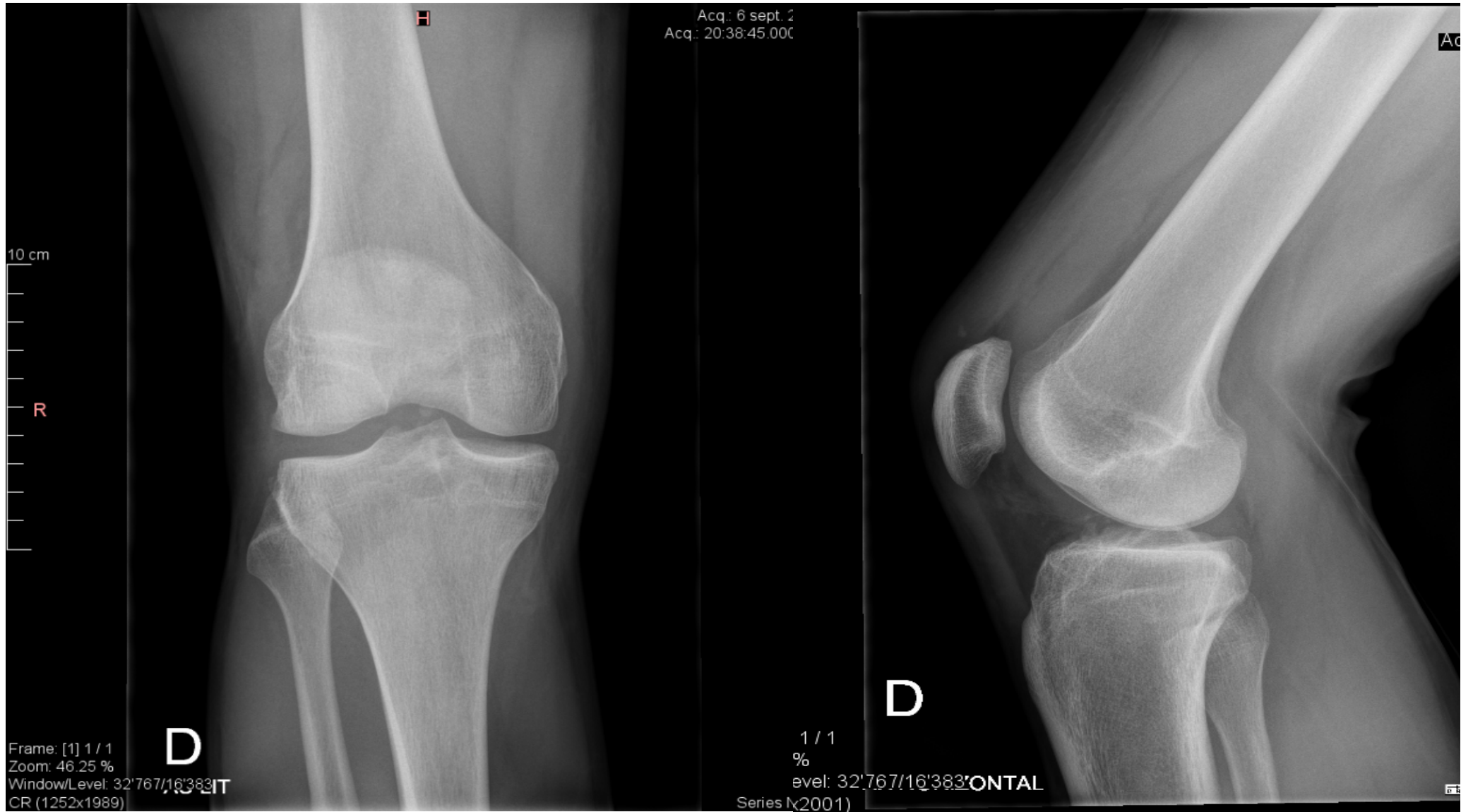
M.B., 21 years old

- Semi-professional skate boarder
- Not smoking, no alcohol
- ACL on the 13/01/2014 by QT Outside-In
- New trauma at 7 months post-op
- Skate board accident the day he resumed his training

M.B., 21 years old

- Small effusion
- Complete ROM
- Lachman 5-8mm
- Pivot shift 10mm
- Anterior drawer 8-10mm
- Laximetry: 6mm SSD
- No joint line pain
- Meniscal tests -

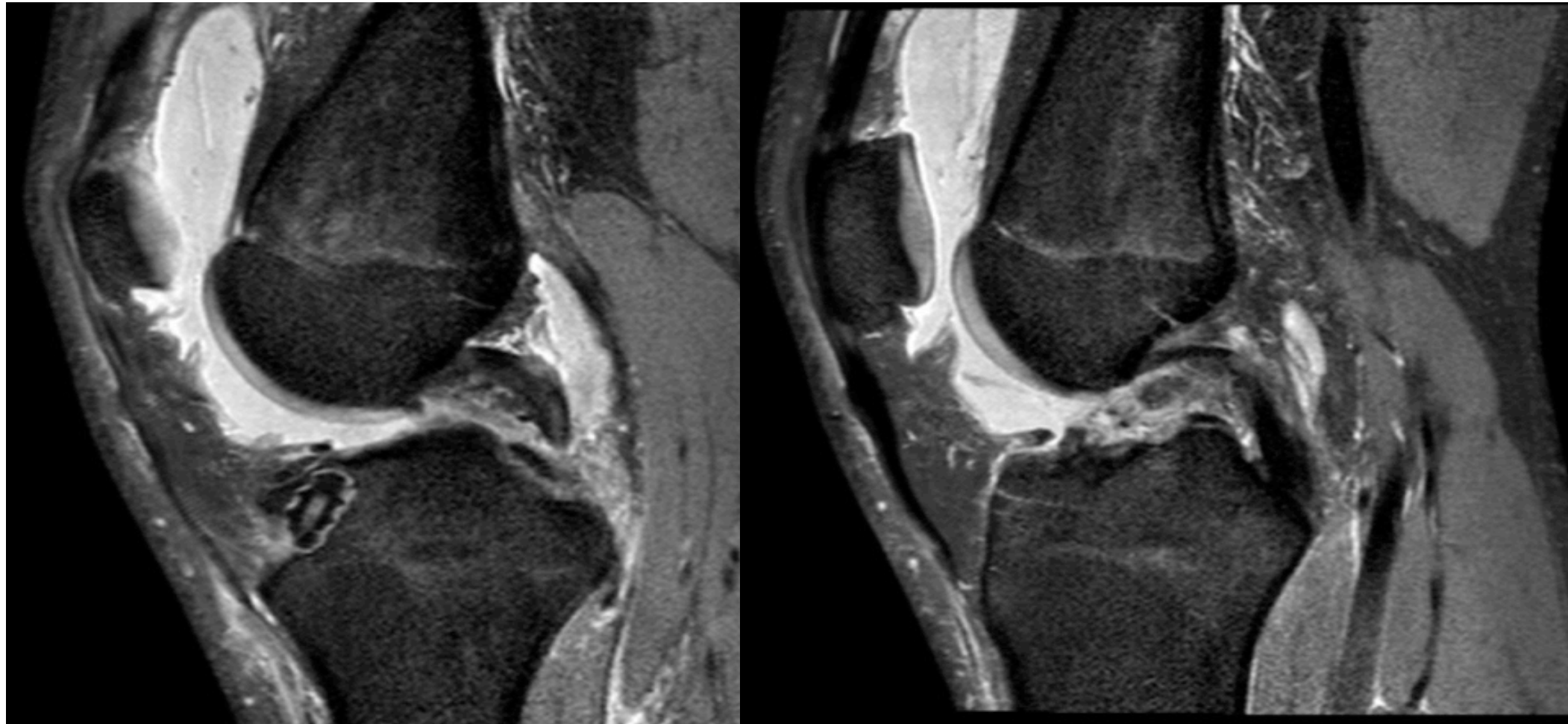
X-rays the day of the trauma



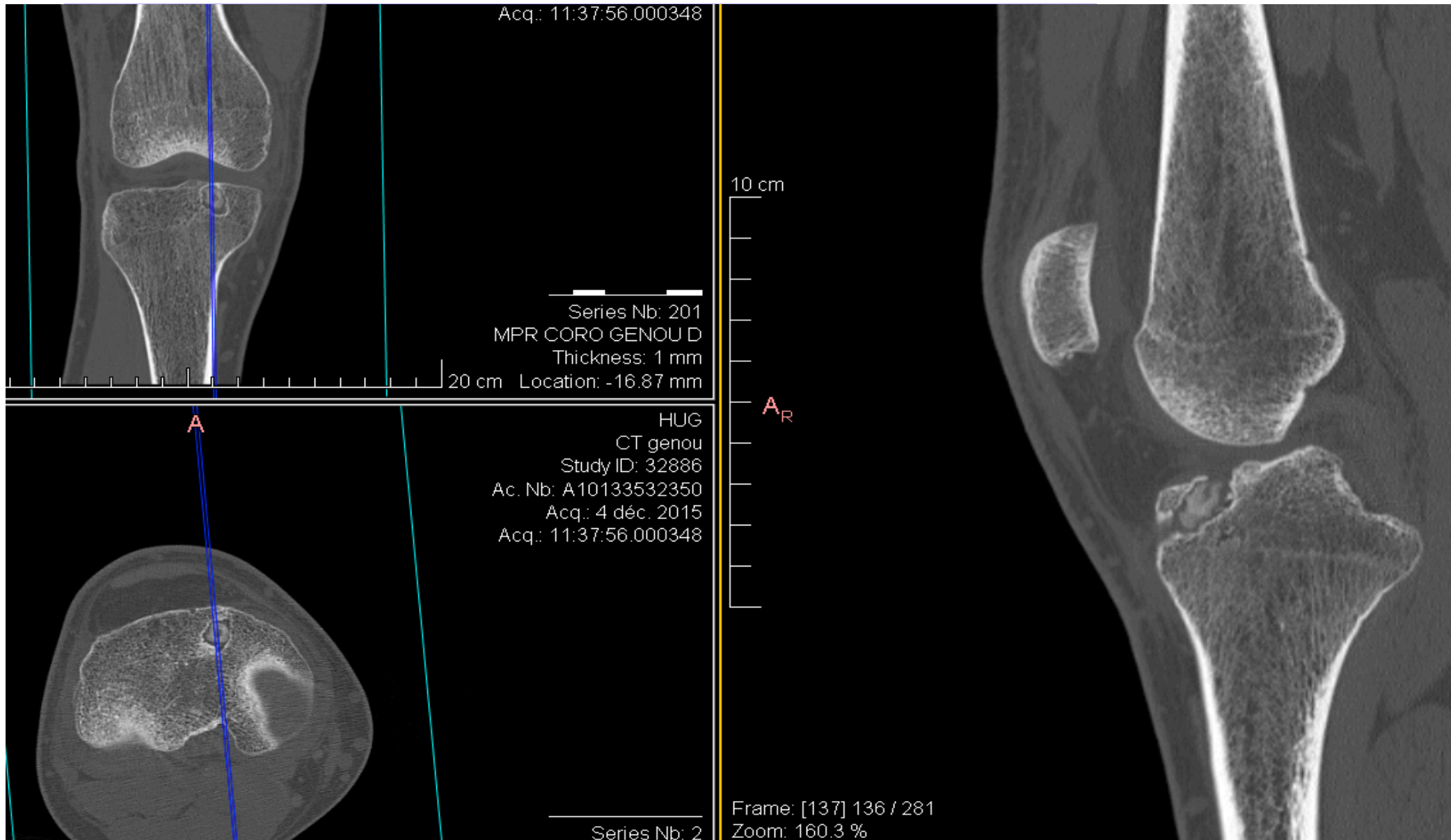
M.B., 21 years old

- Further investigations ?

MRI



Ct-scan



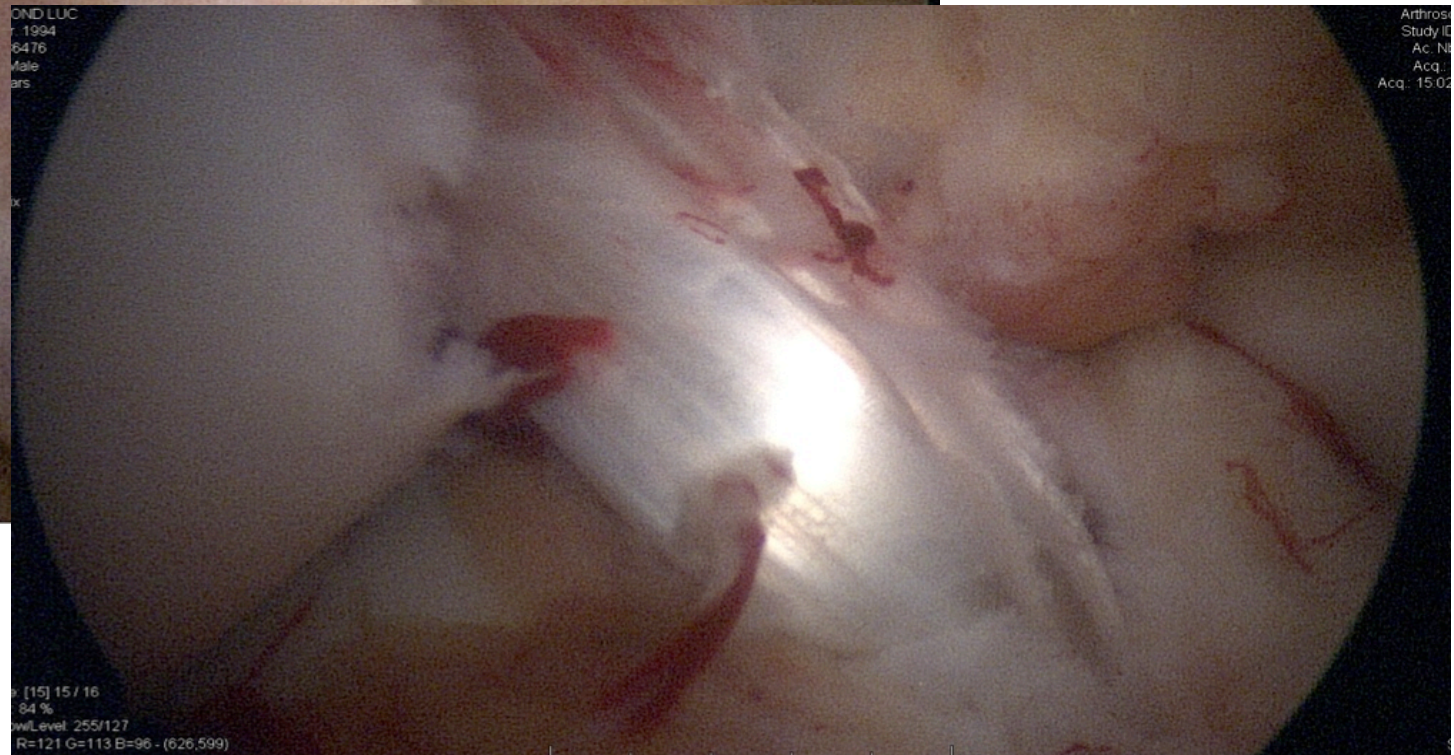
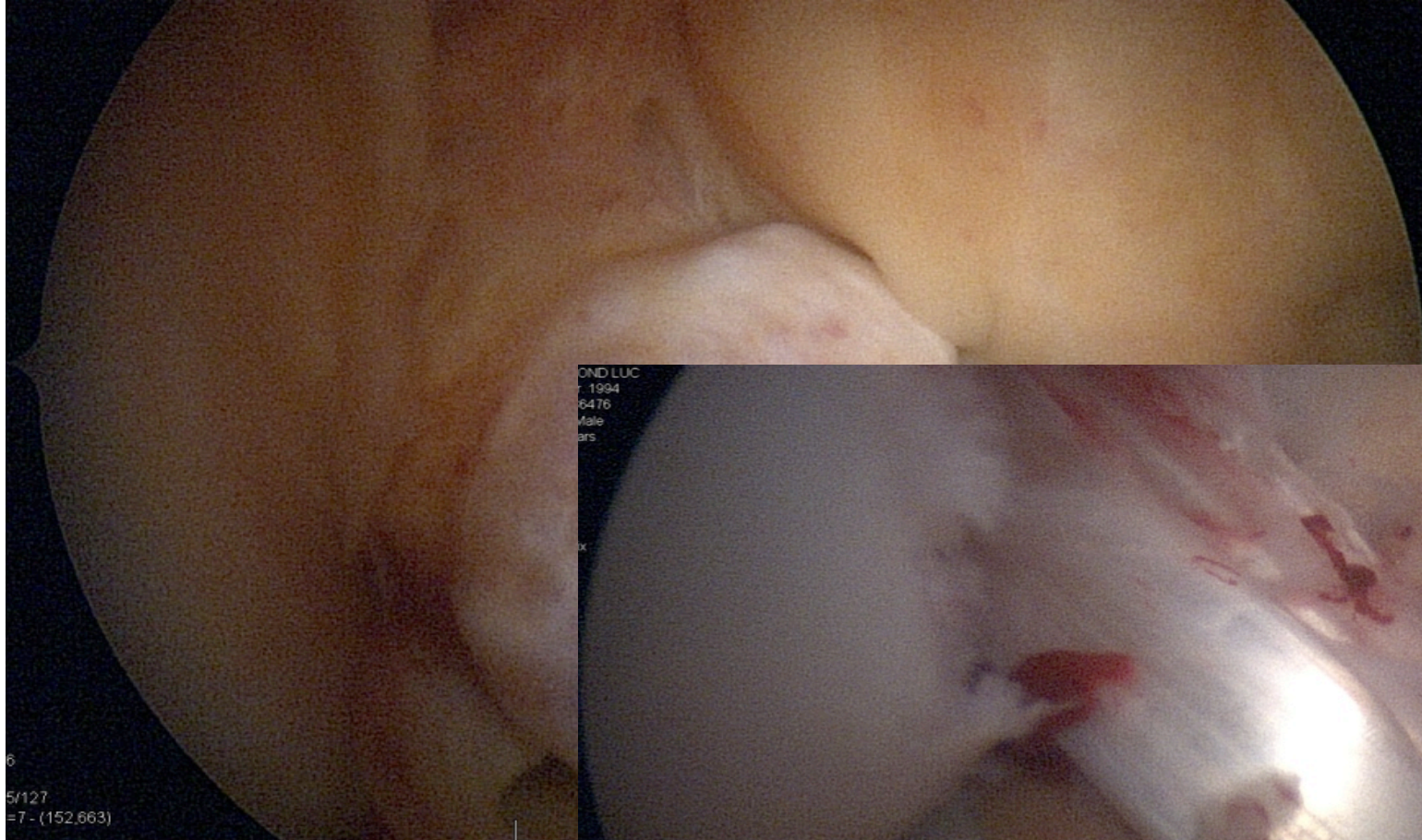
3D-reconstruction



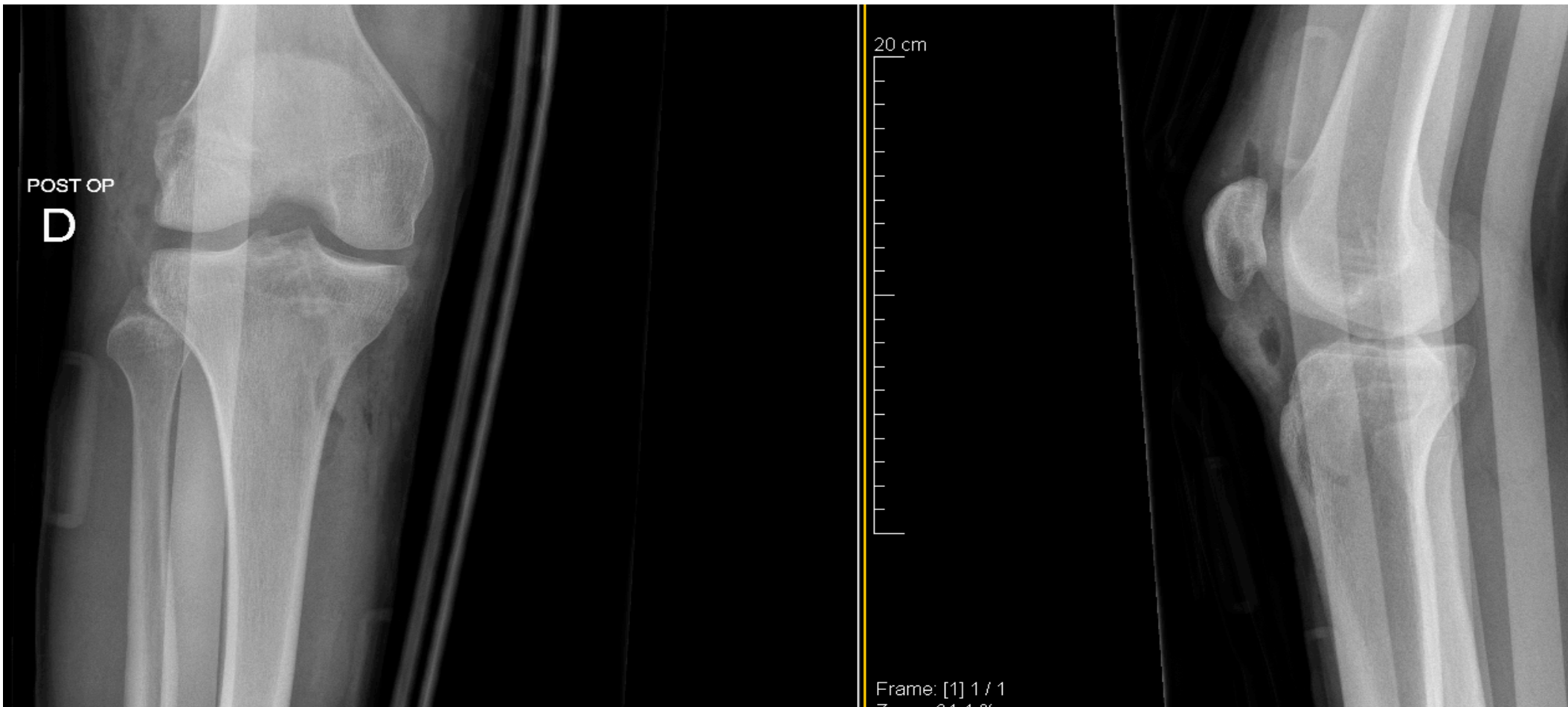
M.B., 21 years old

- Semi-professional skate boarder
- What's your analysis ?
- What's your treatment strategy ?

Peri-operative



One stage revision with Hamstring



M K 25 years old

- World football player 3rd division
- No previous injury
- No comorbidity
- ACLR 19/02/2014 with QT Outside-In
- No associated lesion
- Effusion has persisted for 4-6 months post-op
- Re-rupture 2 months post-RTP

M.K., 25 years old

- Large effusion
- Complete ROM
- Lachman 5 mm
- Pivot shift 5-10mm
- Anterior drawer 10mm
- Laximetry: 7mm SSD
- No joint line pain
- Meniscal tests -

X-rays post-accident



Long standing X-Rays

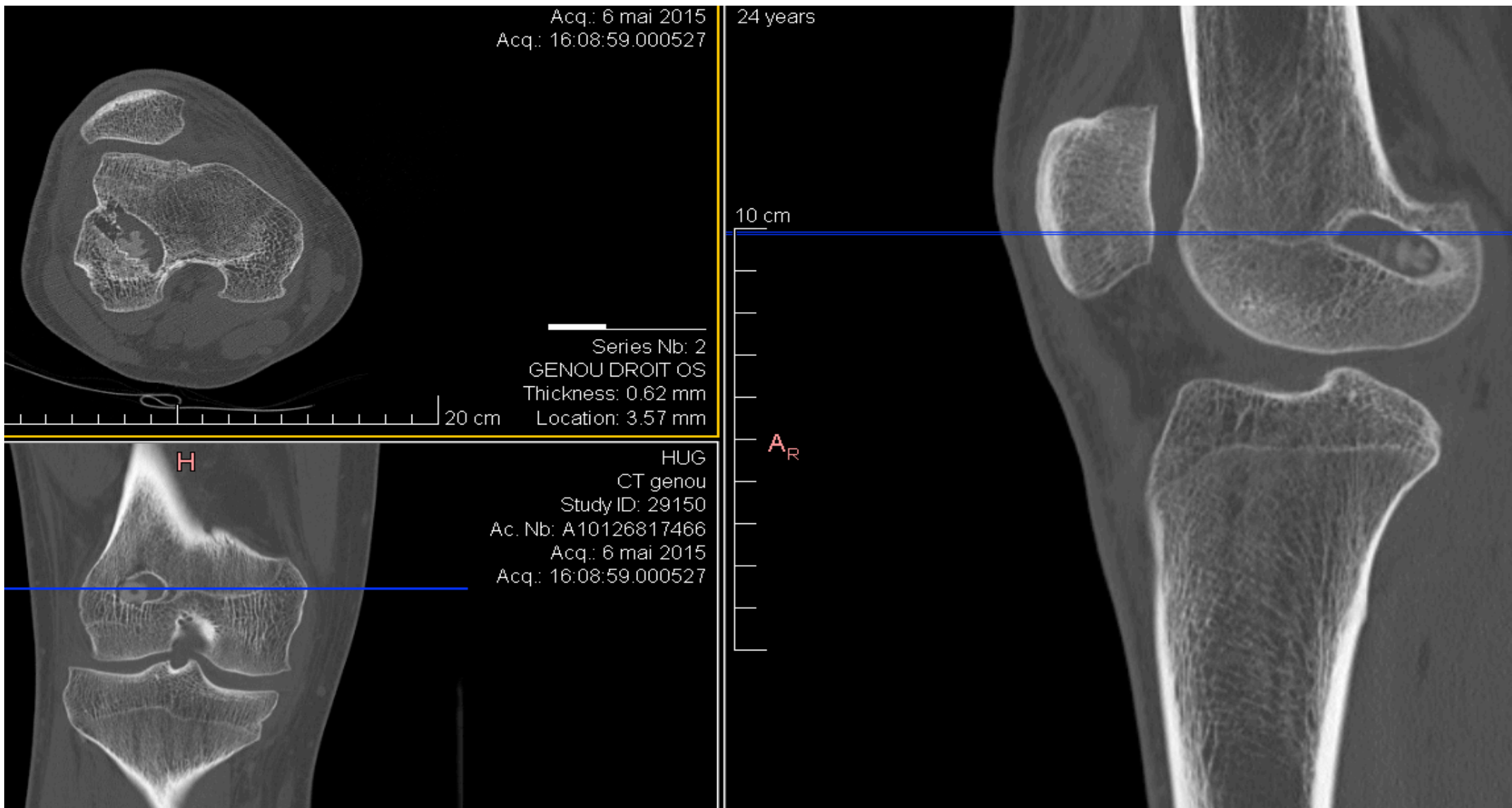
- Mechanical axis normal



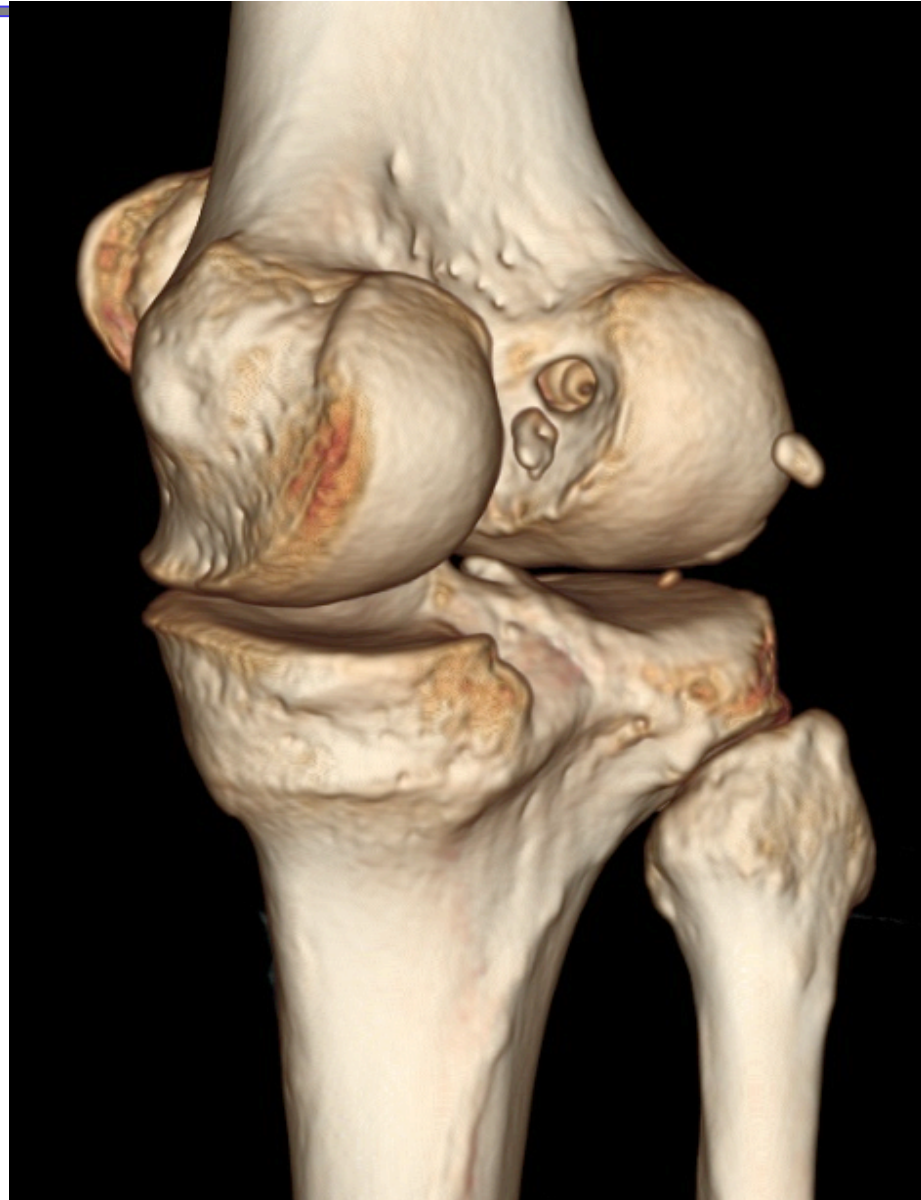
MRI



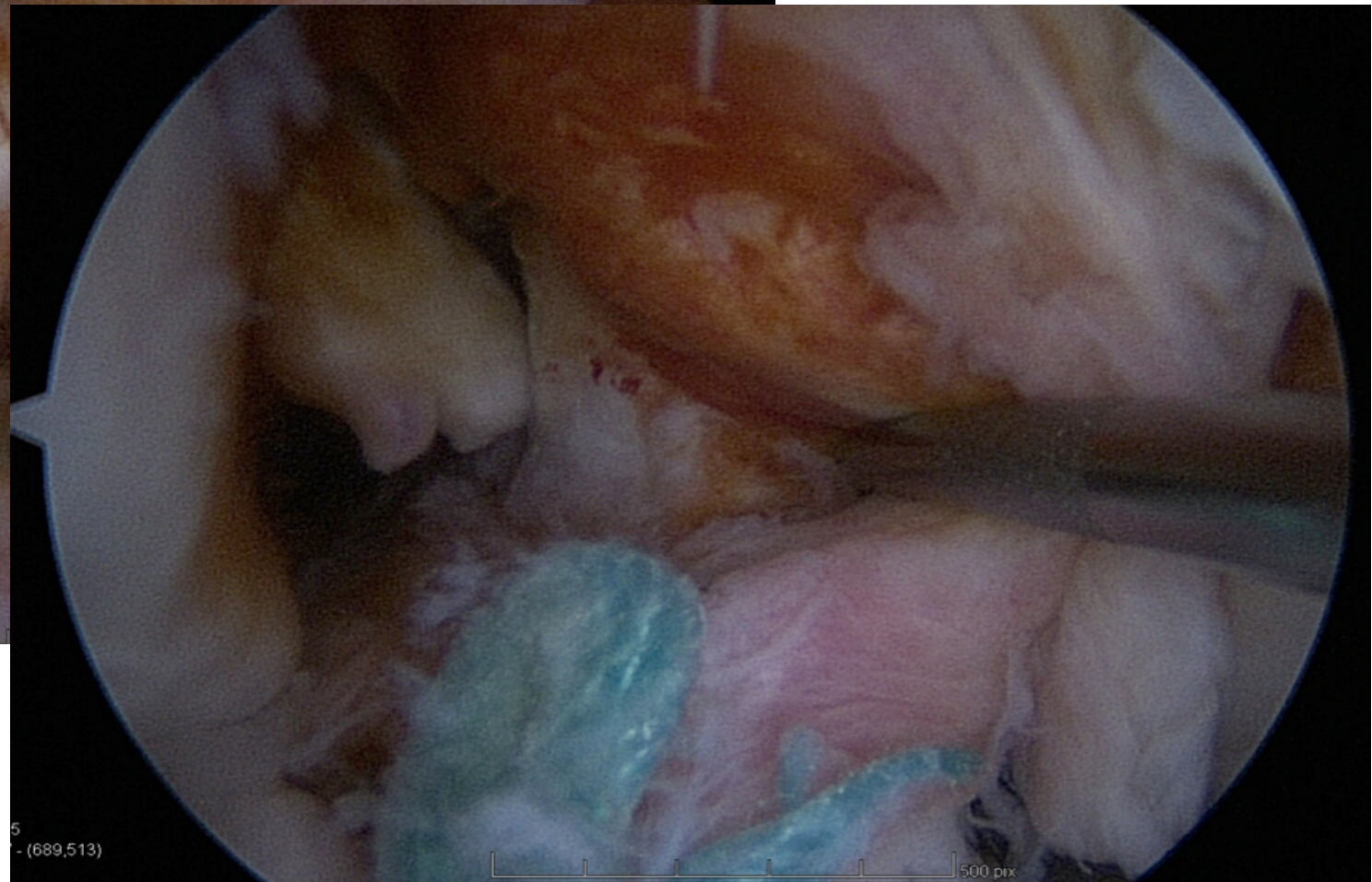
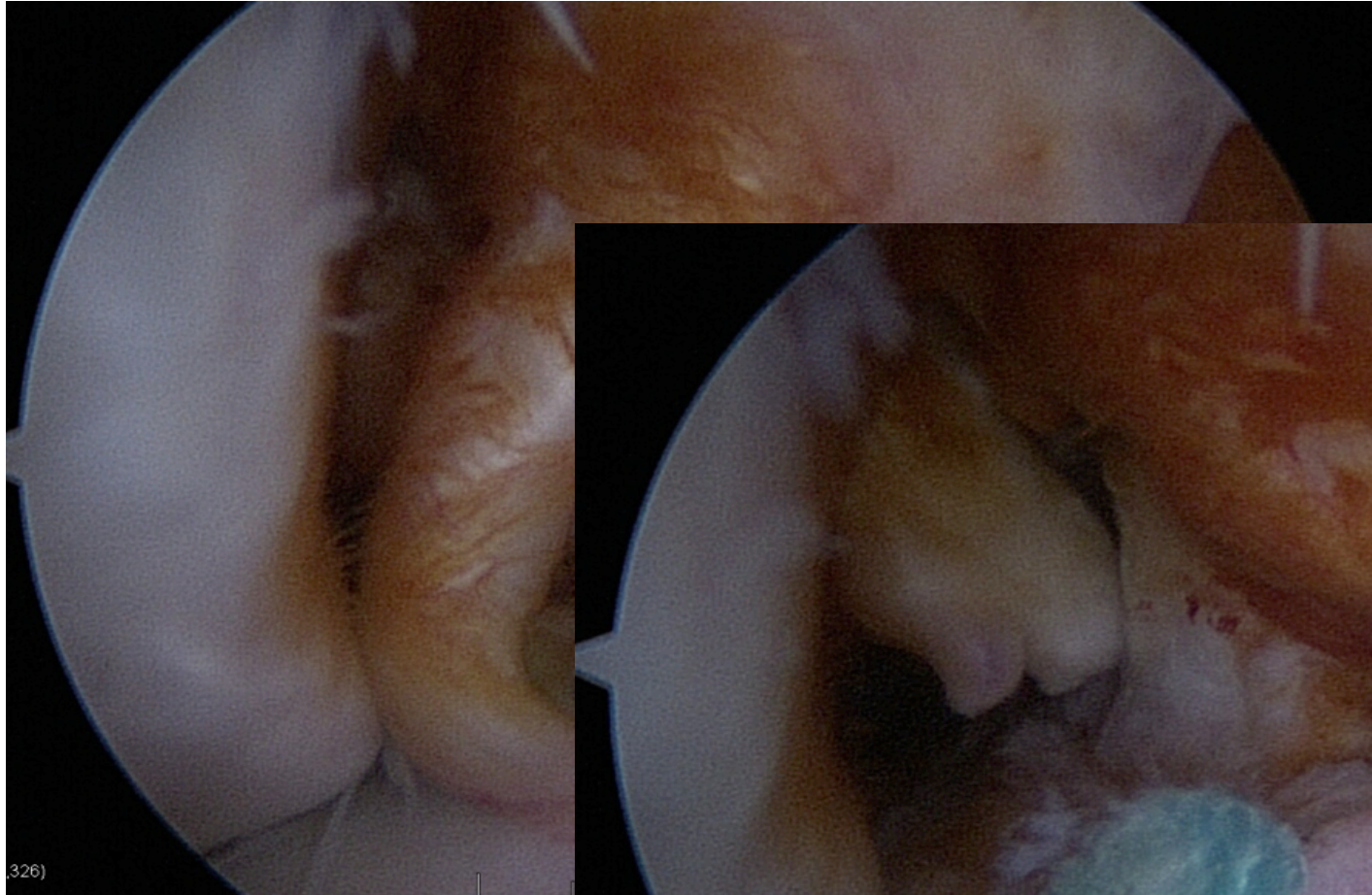
Ct-scan



3D-reconstruction



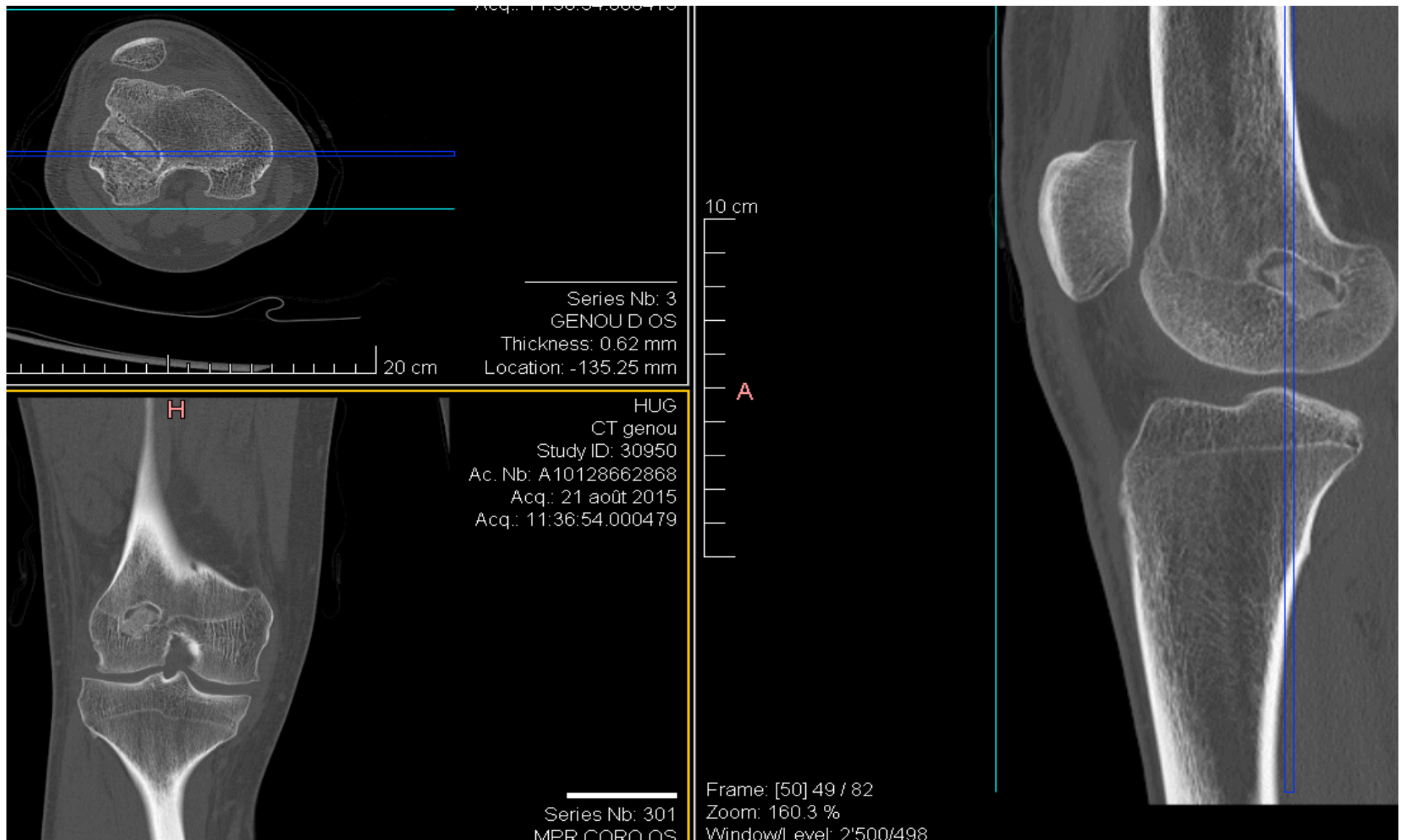
Arthroscopy



M K 25 years old

- World football player
- What's your analysis ?
- Further investigations?
- What's your treatment strategy ?

Ct scan post-grafting

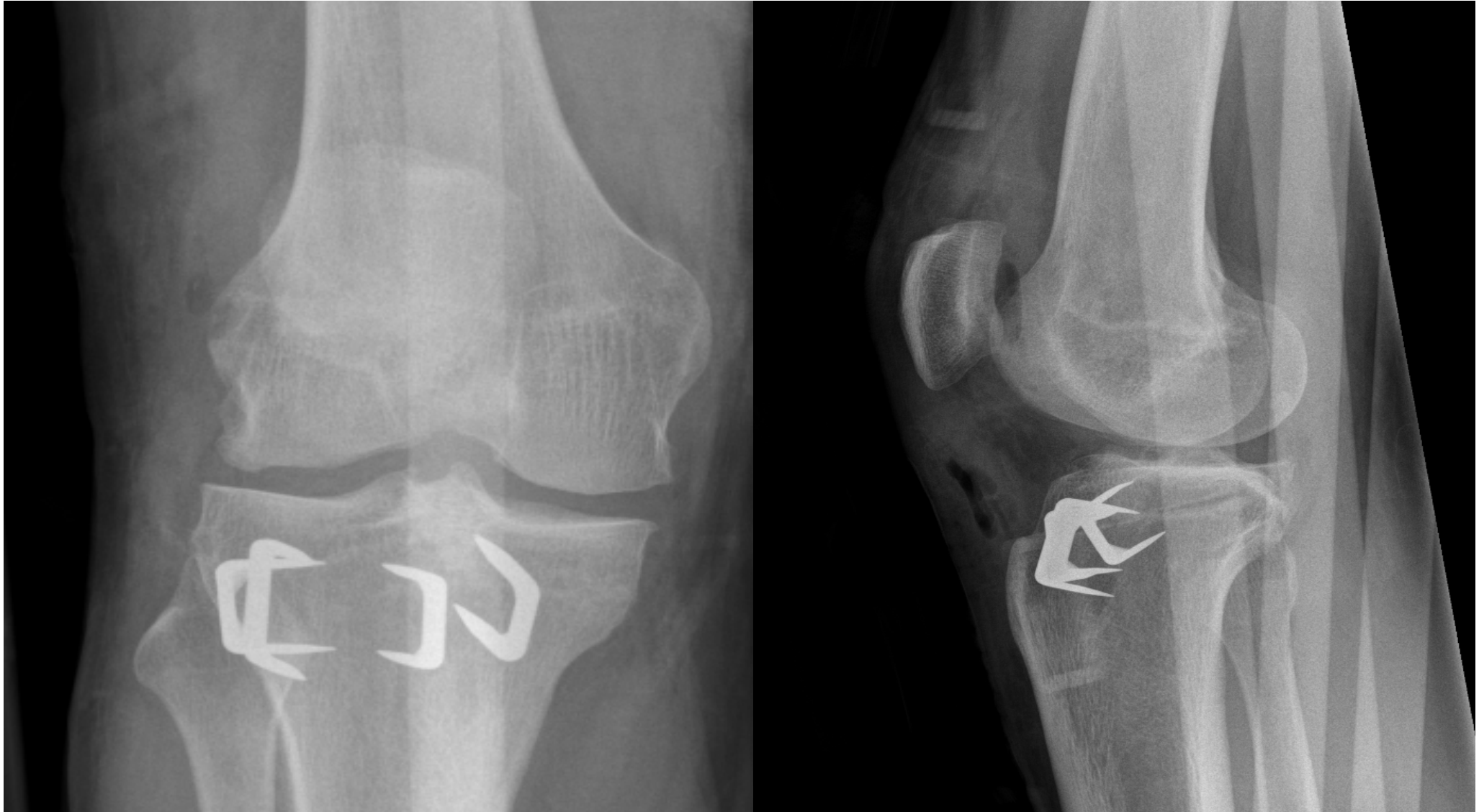


Lateral X-rays

- Tibial slope: 20°



Deflexion osteotomy + R-ACL/hamstring



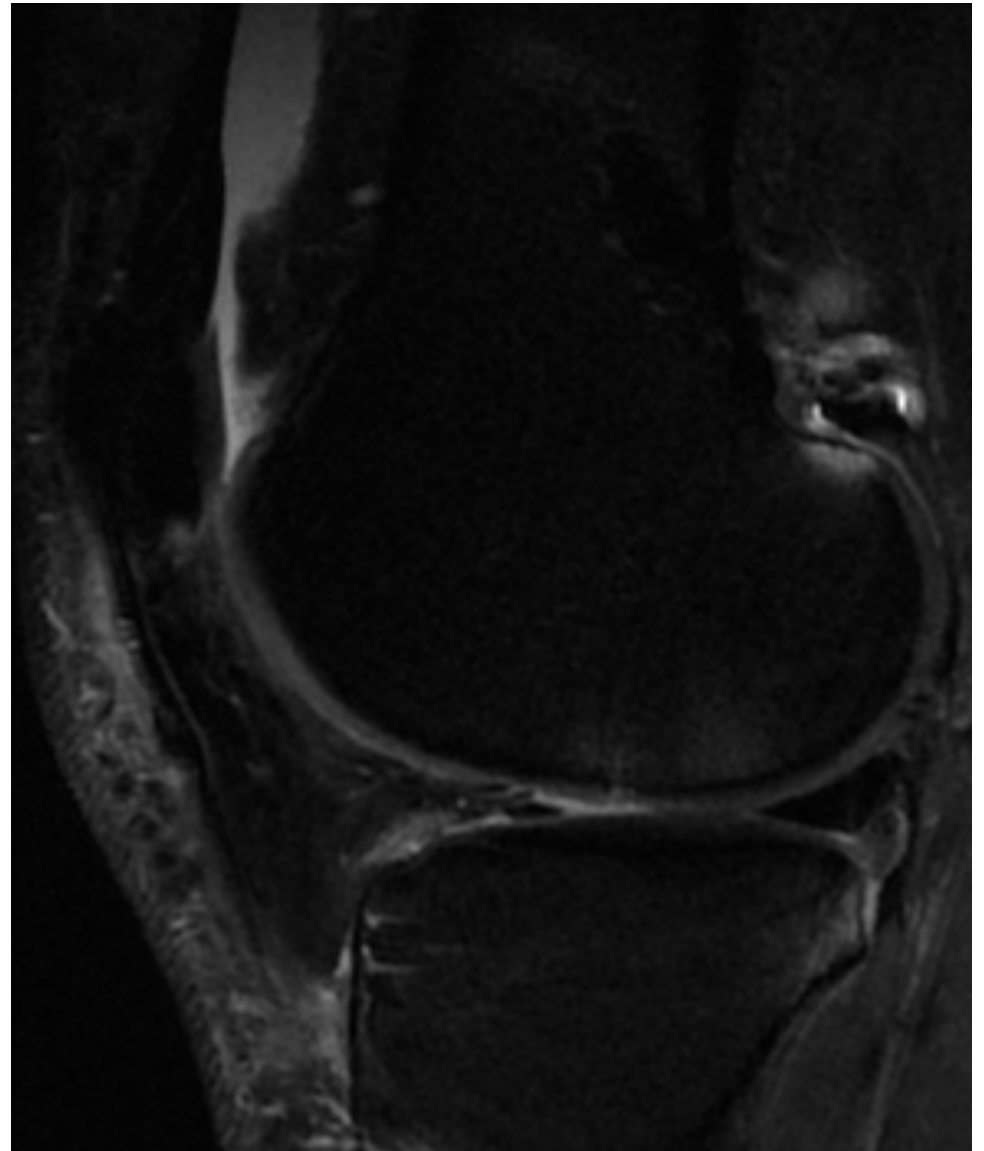
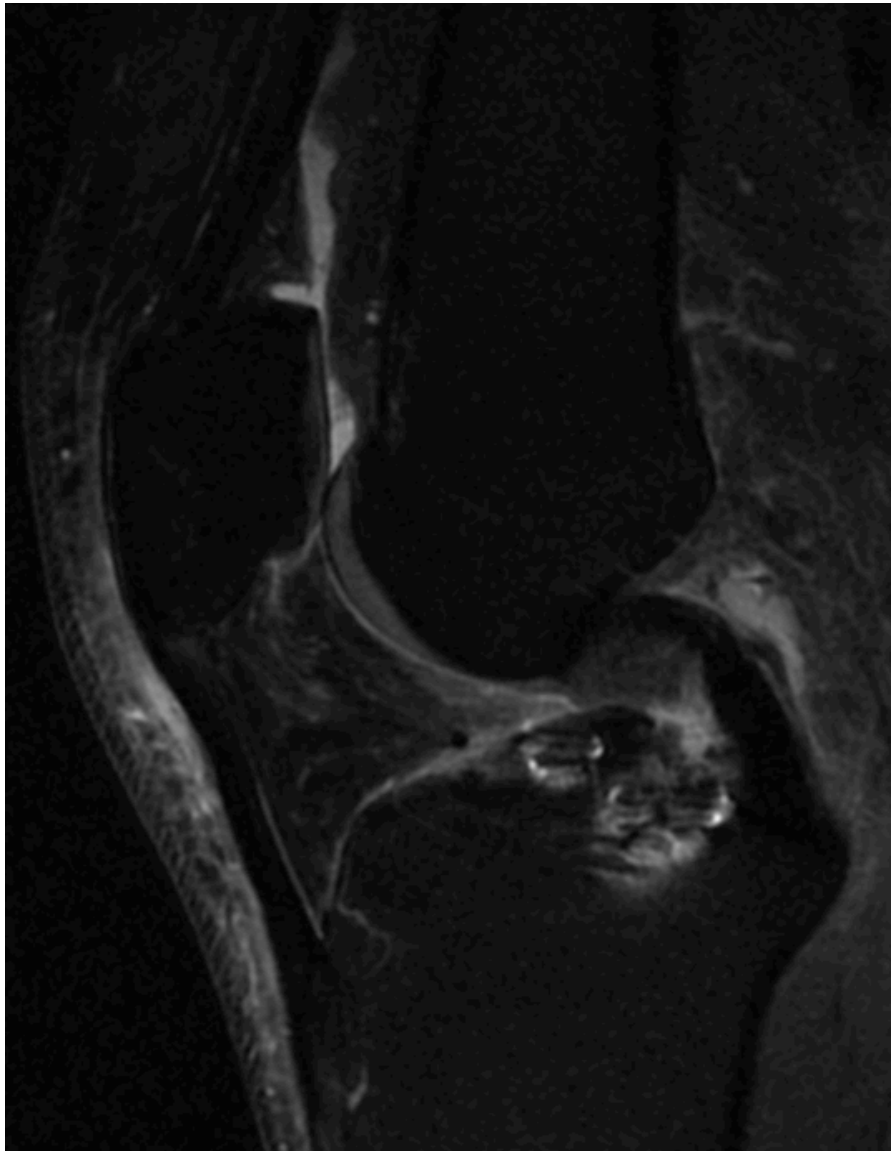
M.Q. 30 years old

- Patient alpine skiers
 - Operated one year before in a country surrounding Switzerland
 - TT Hamstring technique
-
- Functional instability in daily life
 - Insecurity in skiing
 - Recurrent effusion

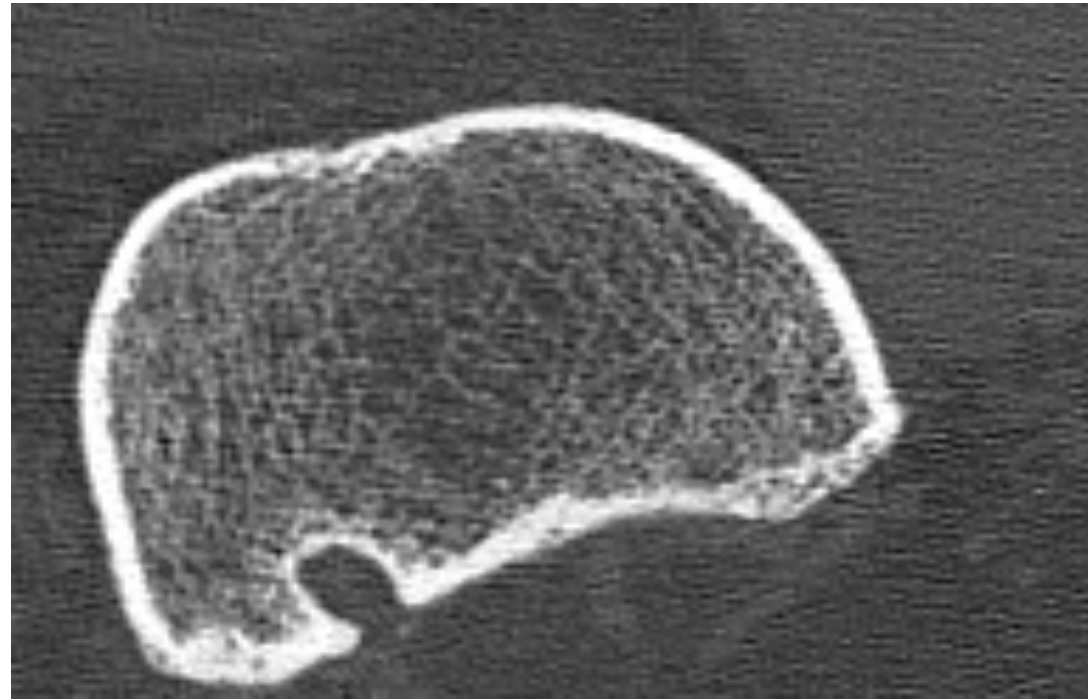
M.Q. 30 years old

- No effusion
- Complete ROM
- Lachman: 5mm
- Pivot shift: 5-8mm painful
- Anterior drawer 8-10mm painful
- Laximetry: 6mm SSD
- No pain on joint lines
- Meniscal test -

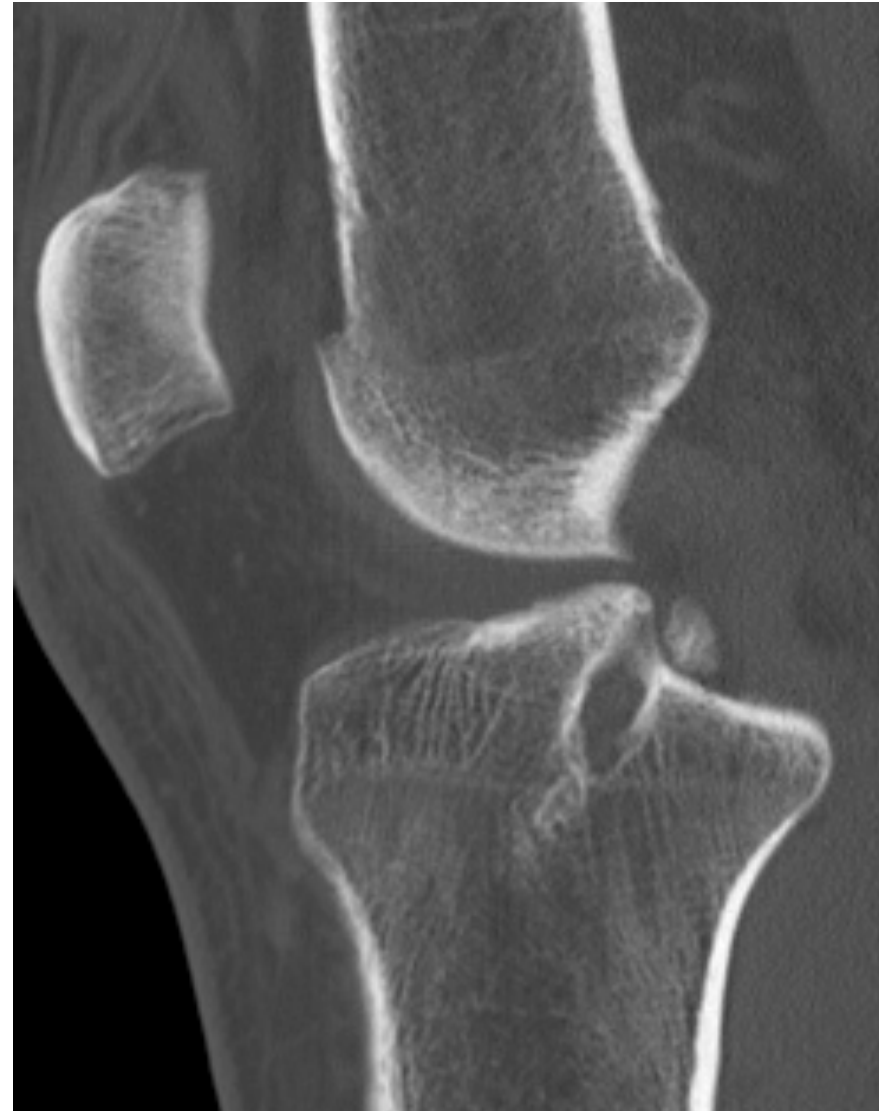
Post-operative MRI



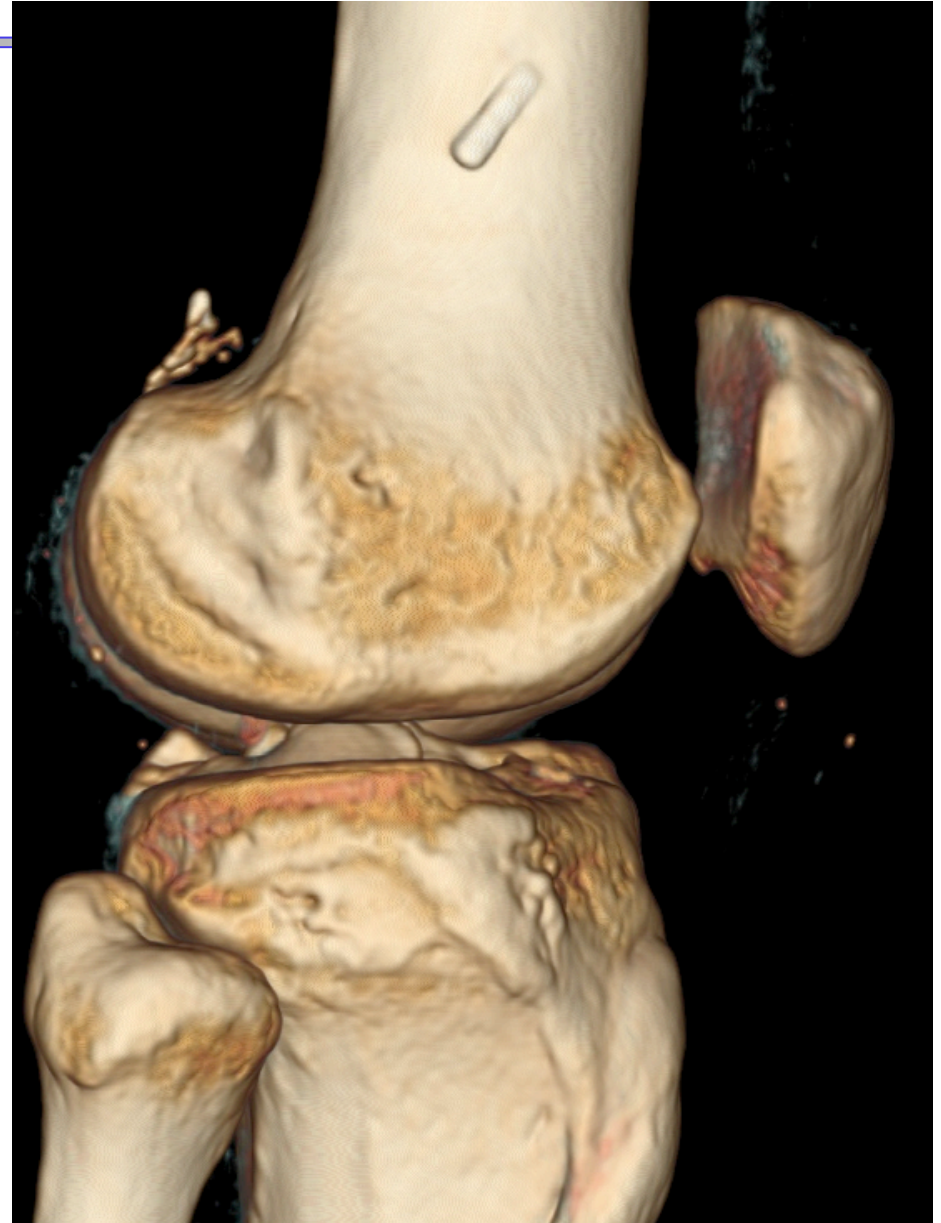
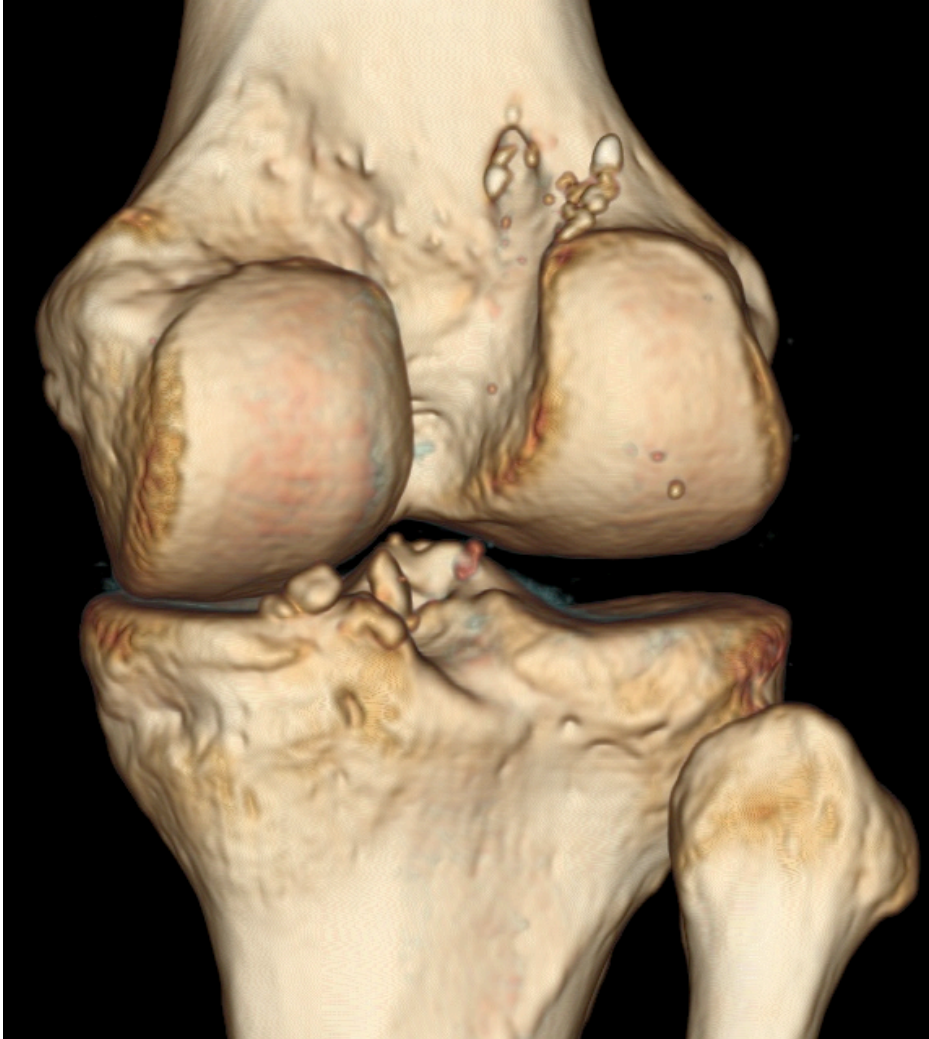
Ct-scan



Ct-scan

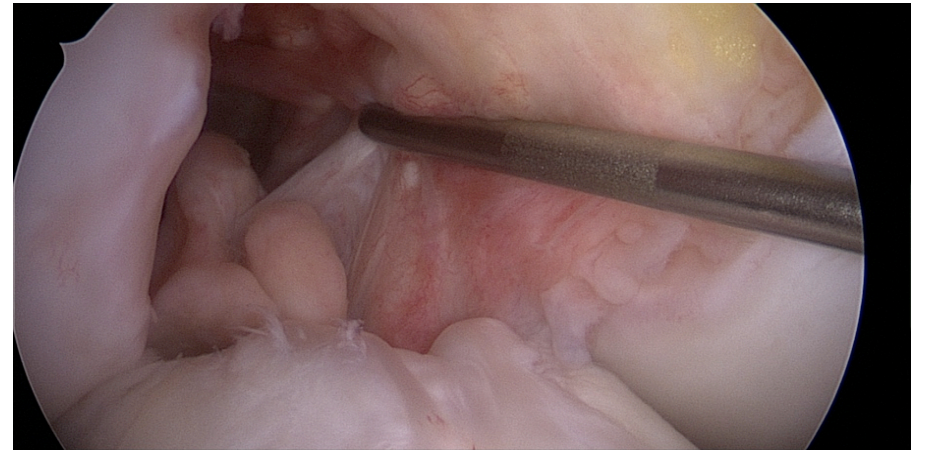
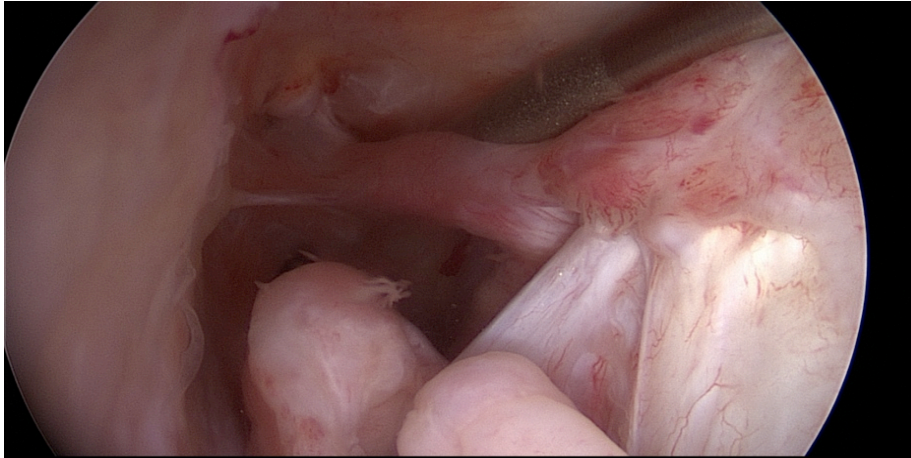


3D-reconstruction



Perop

- Rupture de la greffe, tunnel tibial trop

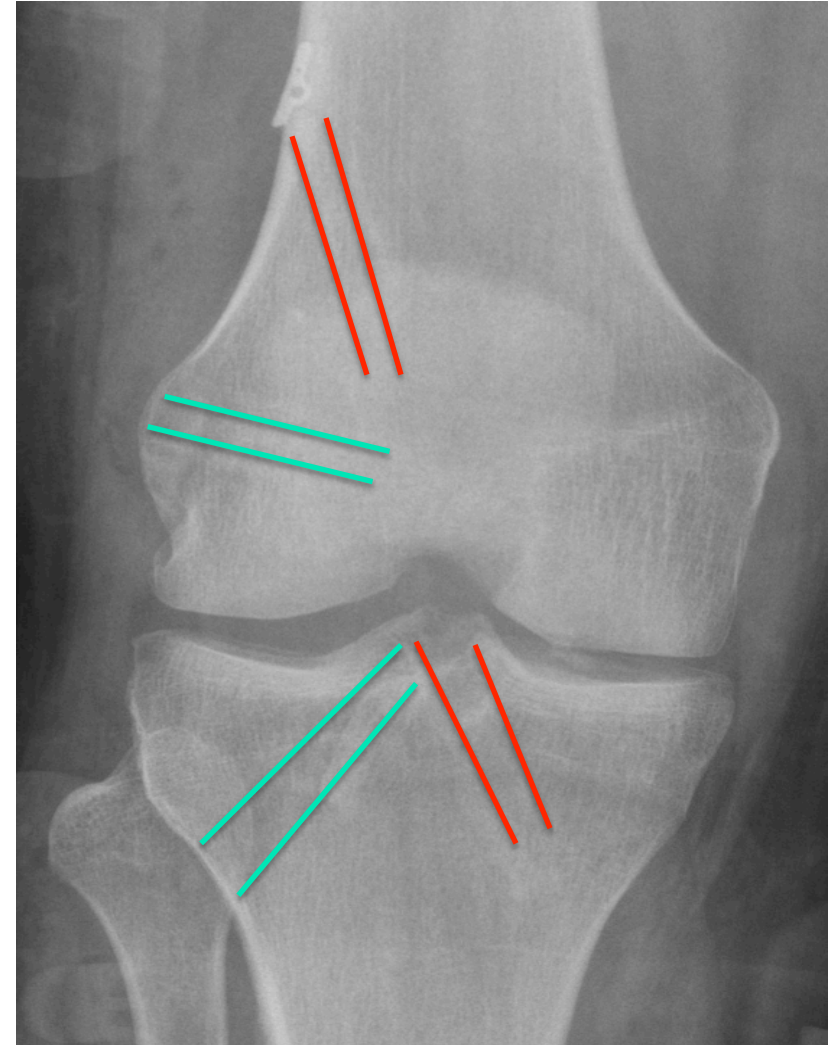


M Q 30 years old

- Electrician
- What's your analysis ?
- Further investigations?
- What's your treatment strategy ?

Post-op radiographs

One-stage revision with QT with a lateral tibial tunnel to avoid tunnel collapse



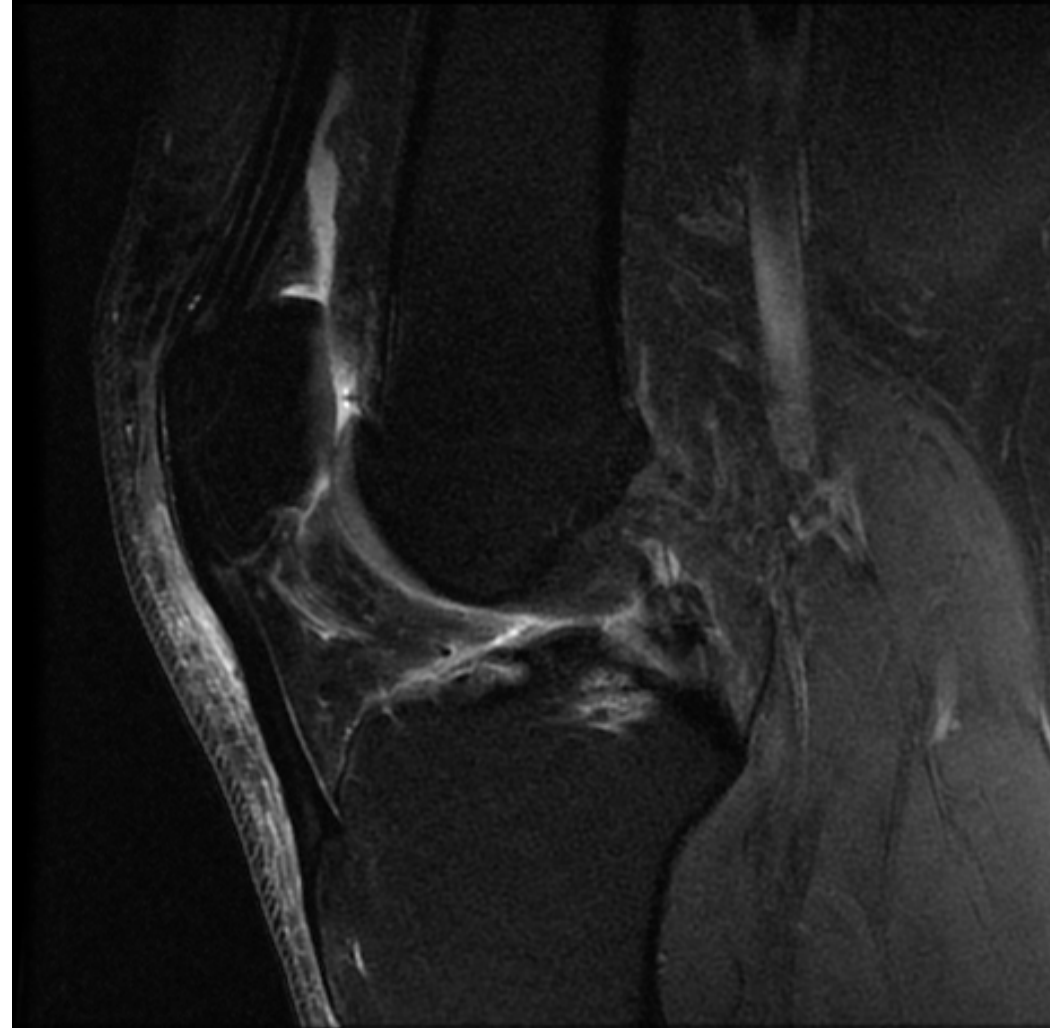
P.T. 22 years old

- Patient electrician active in world football for leisure
- Operated in south Europe 3 months before
- TT Hamstring technique
- Pain and instability
- Persistent effusion
- Can't fully weight-bear

P.T. 22 years old

- Moderate effusion
- F-E: 120-5-0
- Lachman: 5-8mm
- Pivot shift: 10mm painful
- Anterior drawer 12mm painful
- Laximetry: 8mm SSD
- Pain at palpation of med and lat joint lines
- Apprehensive meniscal testing

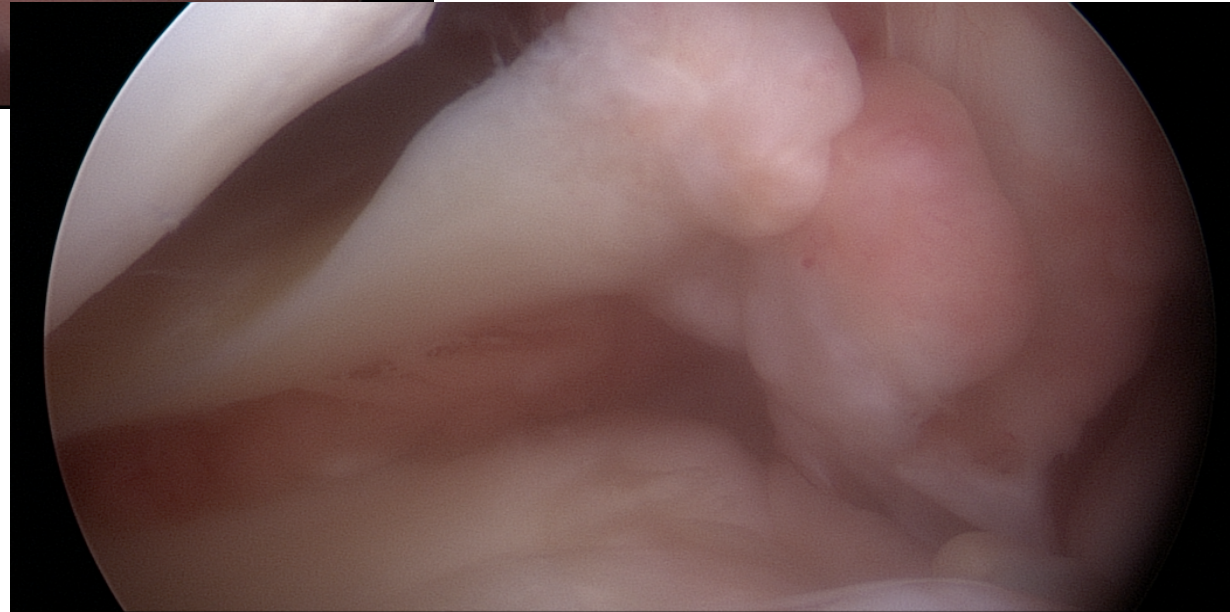
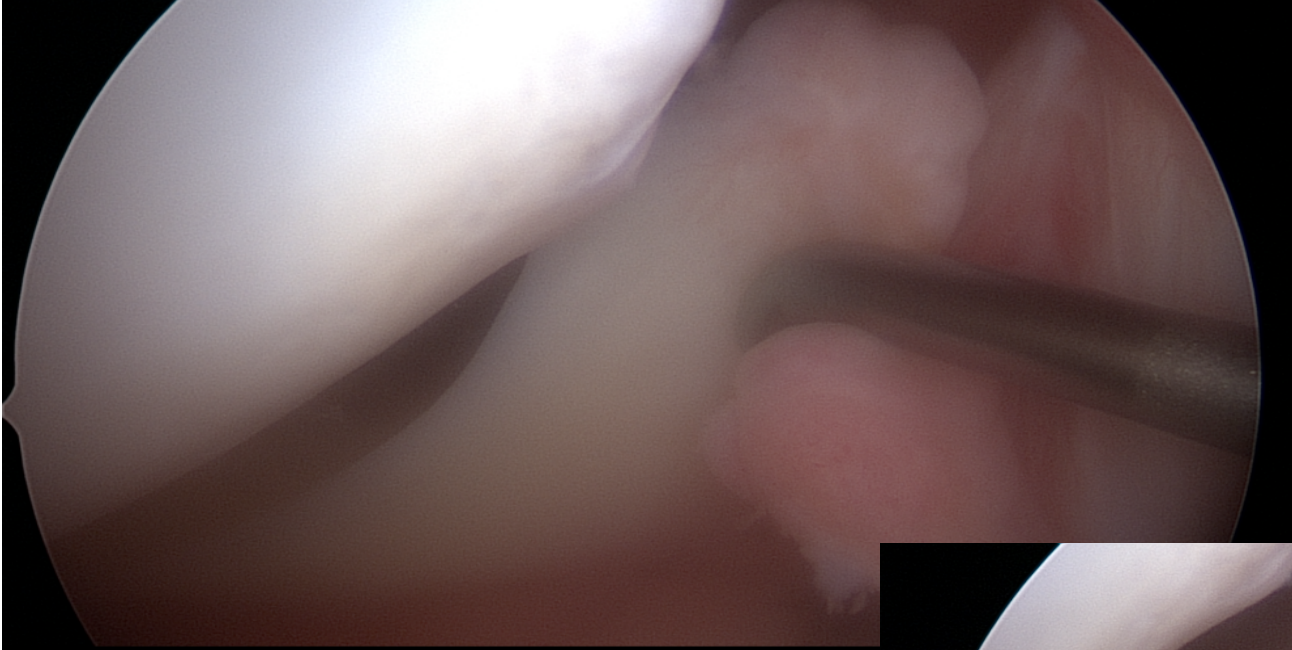
Pre-op MRI



P.T. 30 years old

- What's your opinion ?
- What would you do ?

Arthroscopy



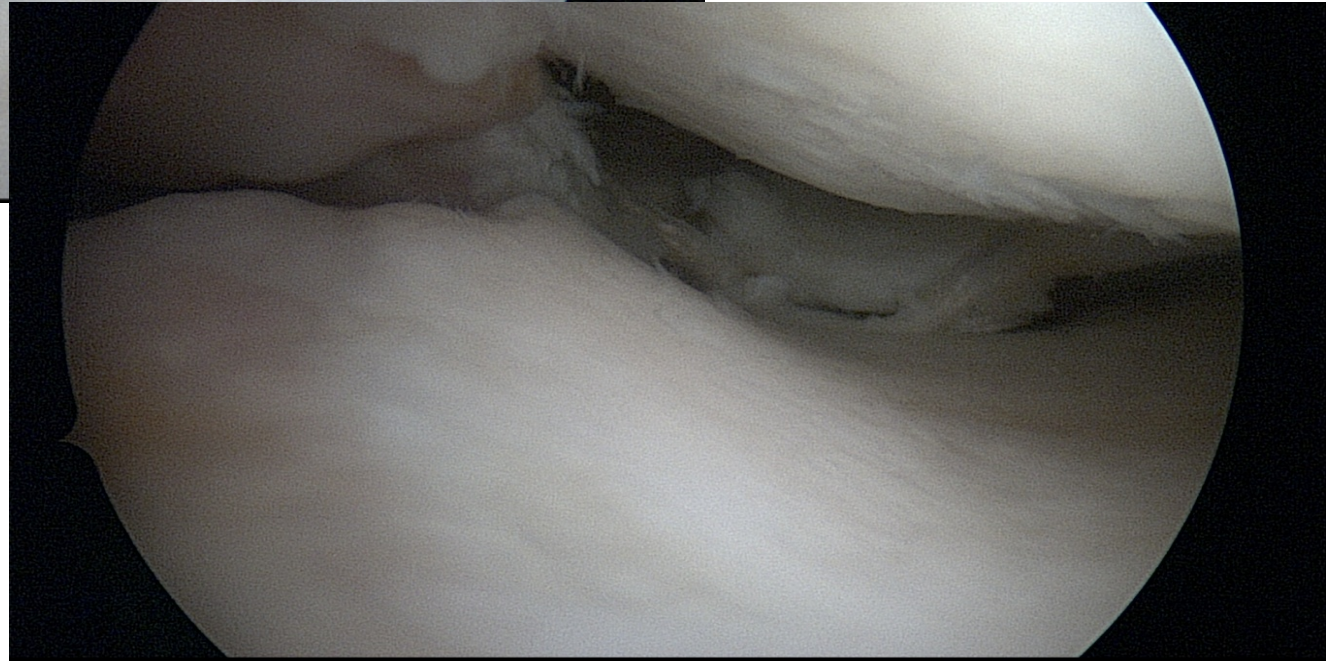
Arthroscopy



Arthroscopic ttr



Both MN Roots insertion



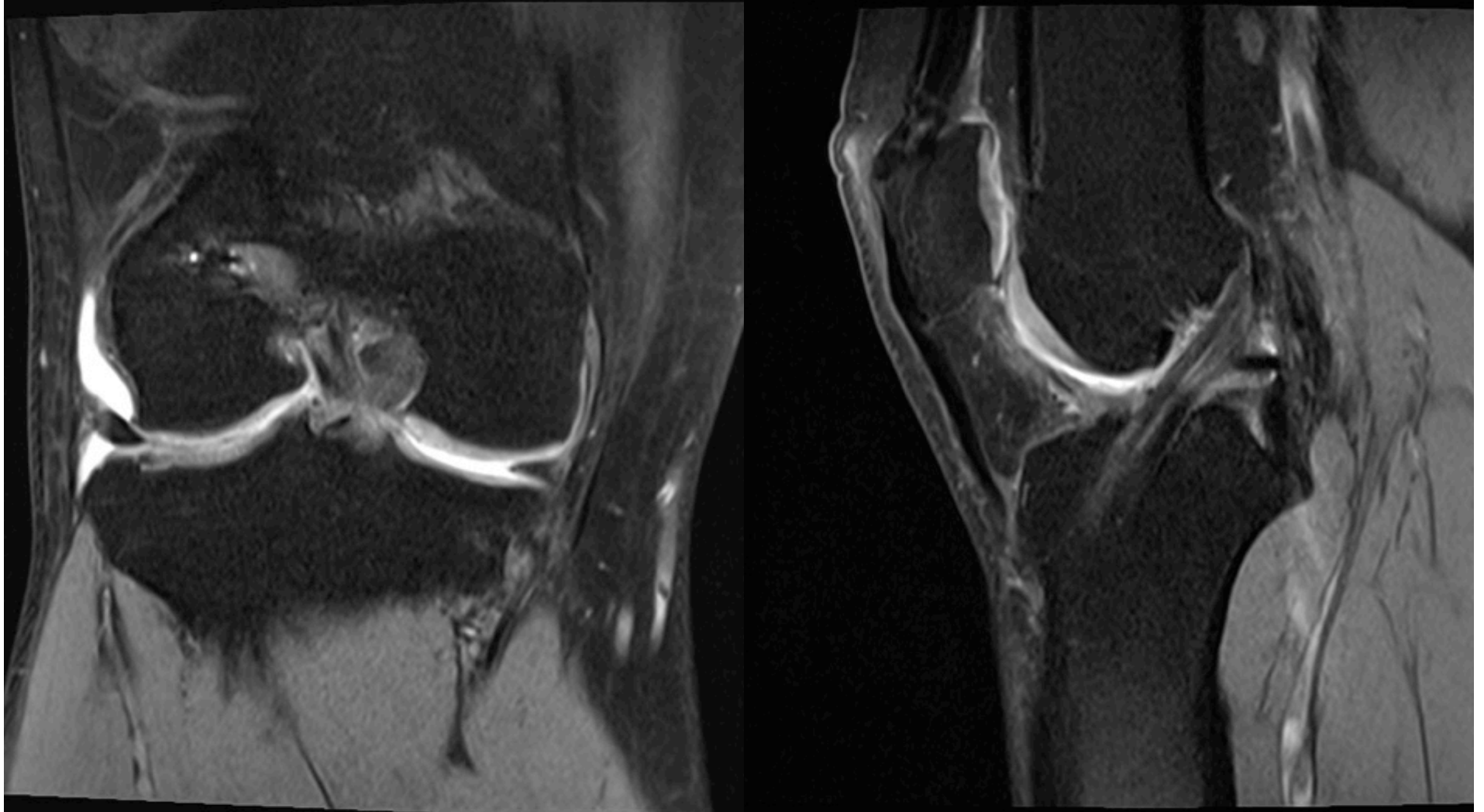
M. F. 27 years old

- Young lawyer playing world football for fun and snowboarder -tennis-squash
- 18/05/2013: ACL rupture + MMbucket-handle tear
 - 1) Suture Bucket-handle tear
 - 2) 6 weeks post MN-ACLR with hamstrings
 - 3) 6 months later Mnectomy

M. F. 27 years old

- Come to see us in fall 2015:
 - Pain on the lateral and post-lateral aspect of the knee and incapacity of resuming any of his sports activities
- No knee effusion
- Full ROM
- Lachman 2mm, Glide in pivot shift
- Ant drawer: 3-5 mm
- KT 1000: 2.5 mm Man Max SSD

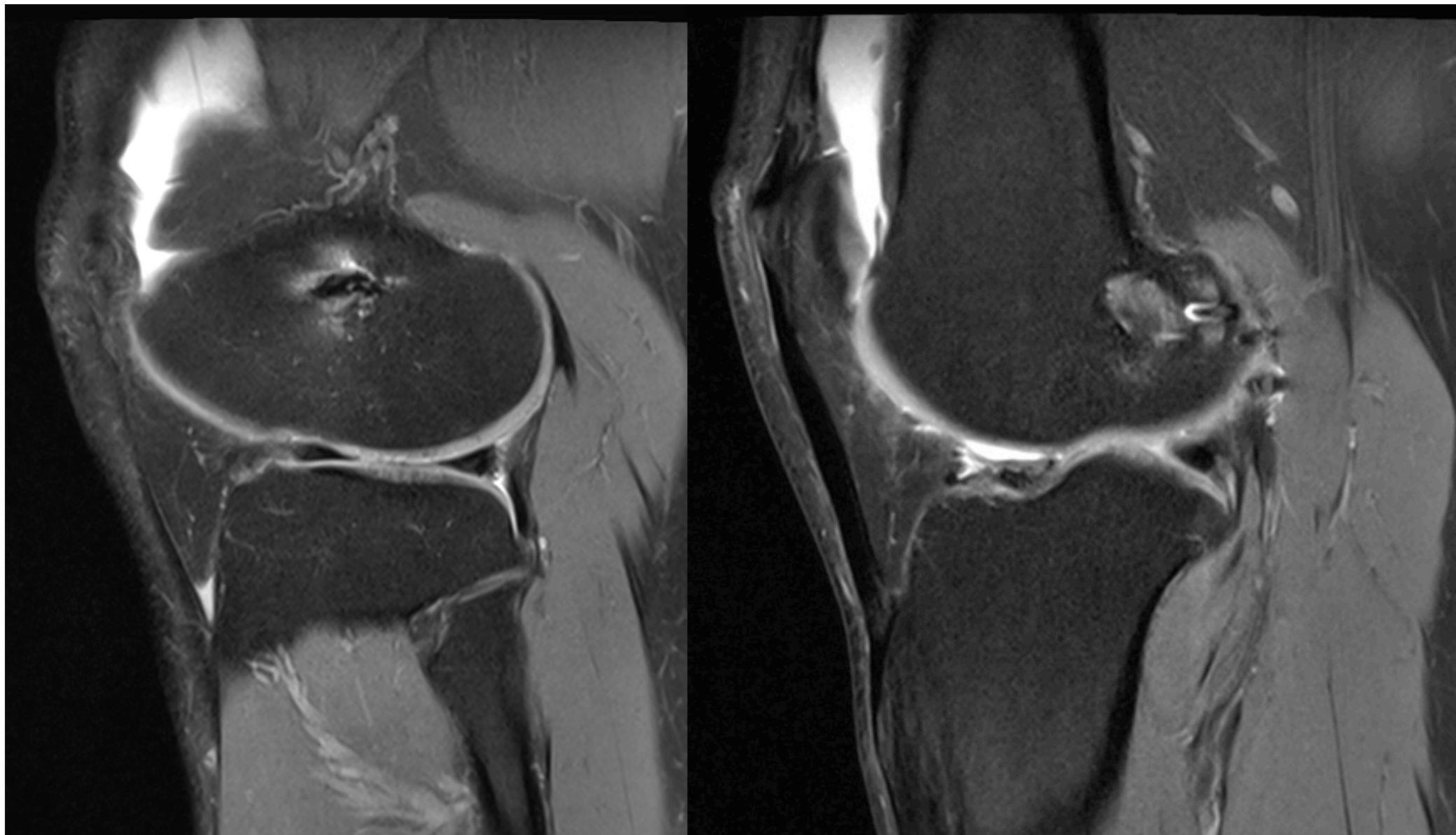
MRI in 2015



Clinical examination

- Pain at palpation on lateral joint line
- Lat MN resault
- Lateral laxity in extension: 2mm
- Lateral laxity at 30°: 3 mm late but firm
- Postero-lateral drawer at 30° and 80°: ++
- Dial test at 30 and 80°: >15°

MRI in 2015



Ttr

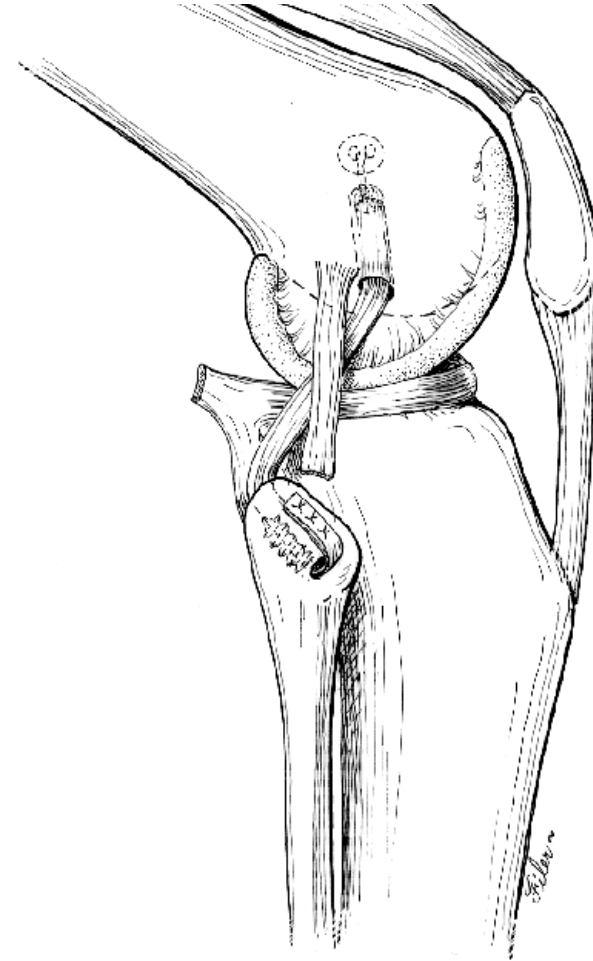
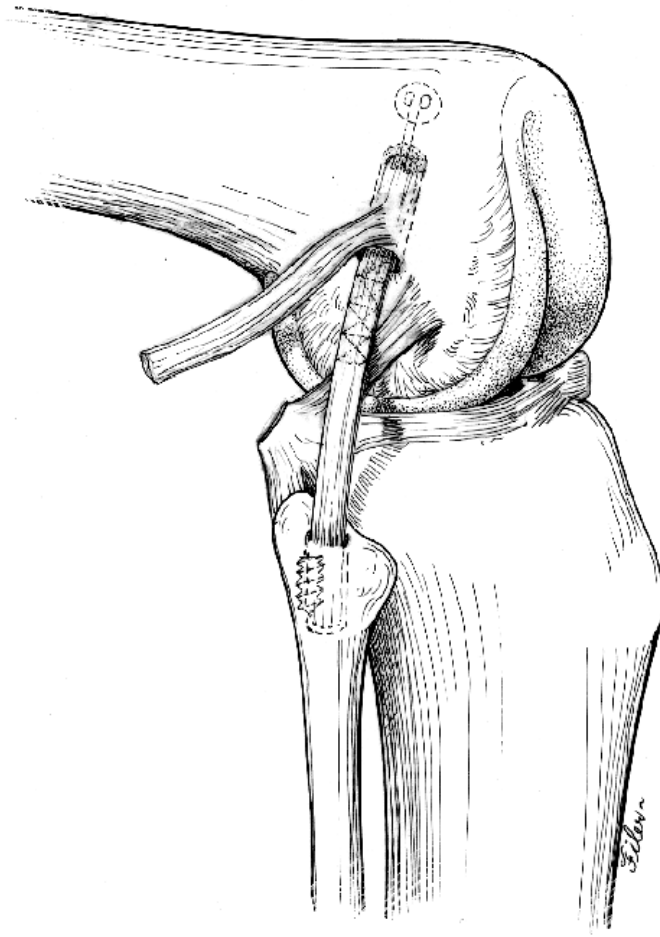
- R-ACL with QT
- Retension plasty of the PLC-LCL and popliteal hiatus vs reconstruction of the lateral cpt using a tibialis posterior allograft

Treatment

Repair Versus Reconstruction of the Fibular Collateral Ligament and Posterolateral Corner in the Multiligament-Injured Knee

Bruce A. Levy,* MD, Khaled A. Dajani, MD, Joseph A. Morgan, Jay P. Shah, MD,
Diane L. Dahm, MD, and Michael J. Stuart, MD

From the Department of Orthopaedic Surgery, Mayo Clinic, Rochester, Minnesota



Higher failure rate in repair compared to reconstruction

Levy et al *Am J Sports Med* 2010

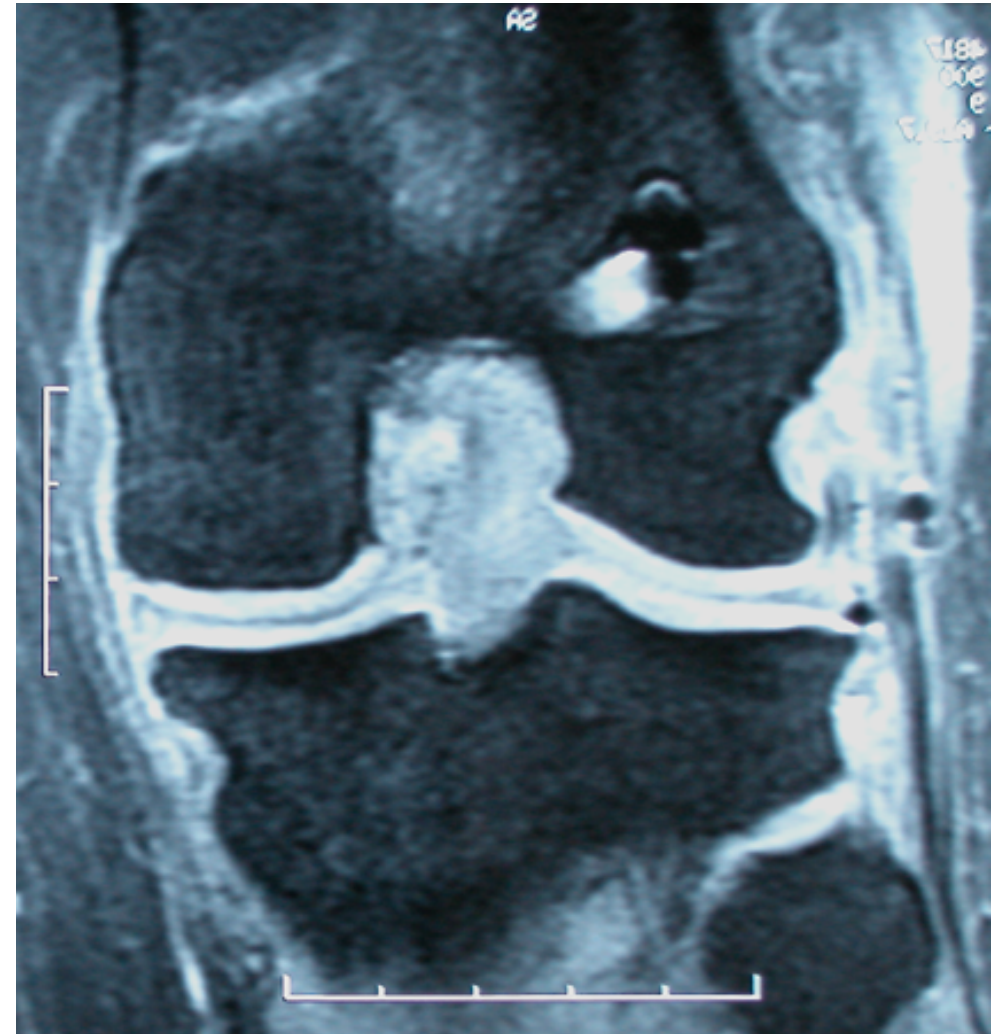
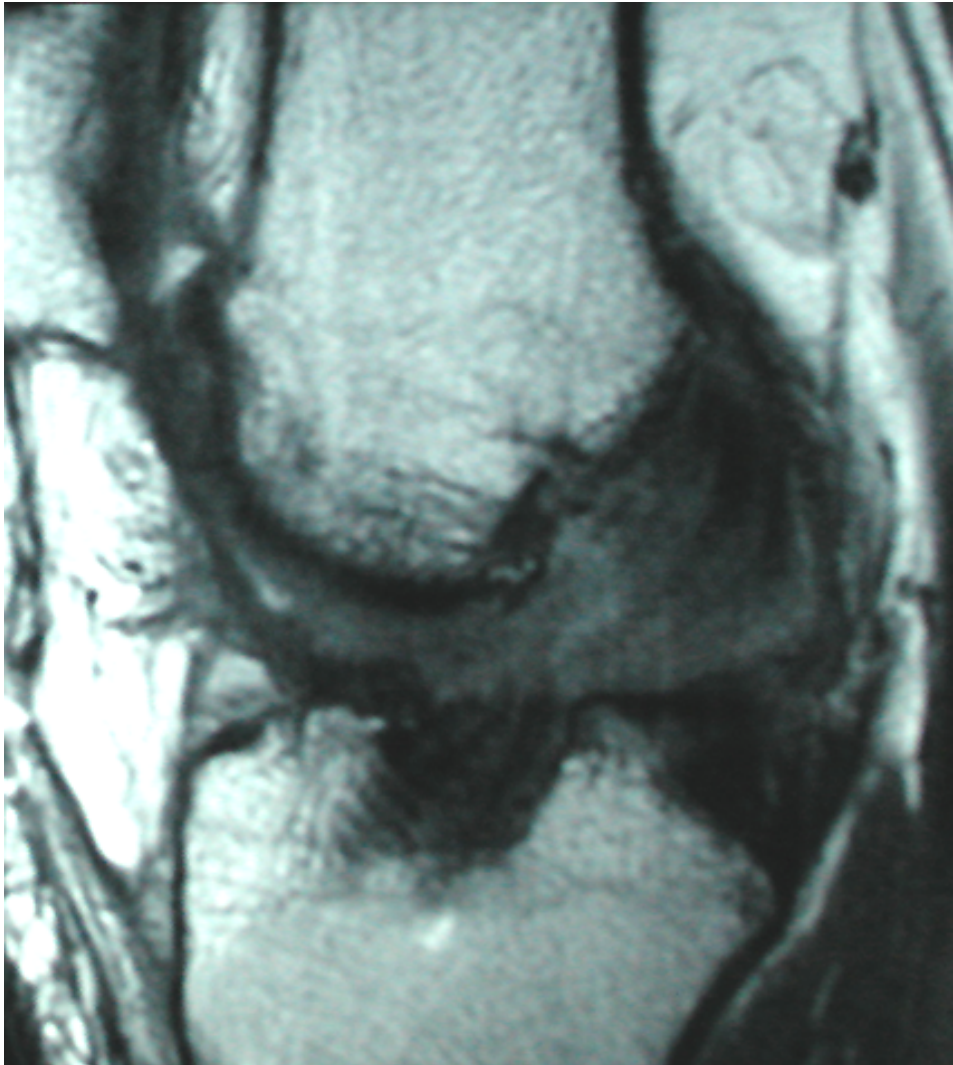
B. al. C. 31 years old

- Professional soccer player from the Middle East
- ACL reconstruction with Hamstring in 2012
- Came to us in 2014
- Resumed playing, stop, resume, stop
- Insecure, not real functional instability
- No pain

B. al. C. 31 years old

- No knee effusion
- Full ROM
- Lachman 3-5 mm,
- Pivot shift 5-8mm
- Ant drawer: 8-10 mm
- KT 1000: 5 mm Man Max SSD
- Meniscus -

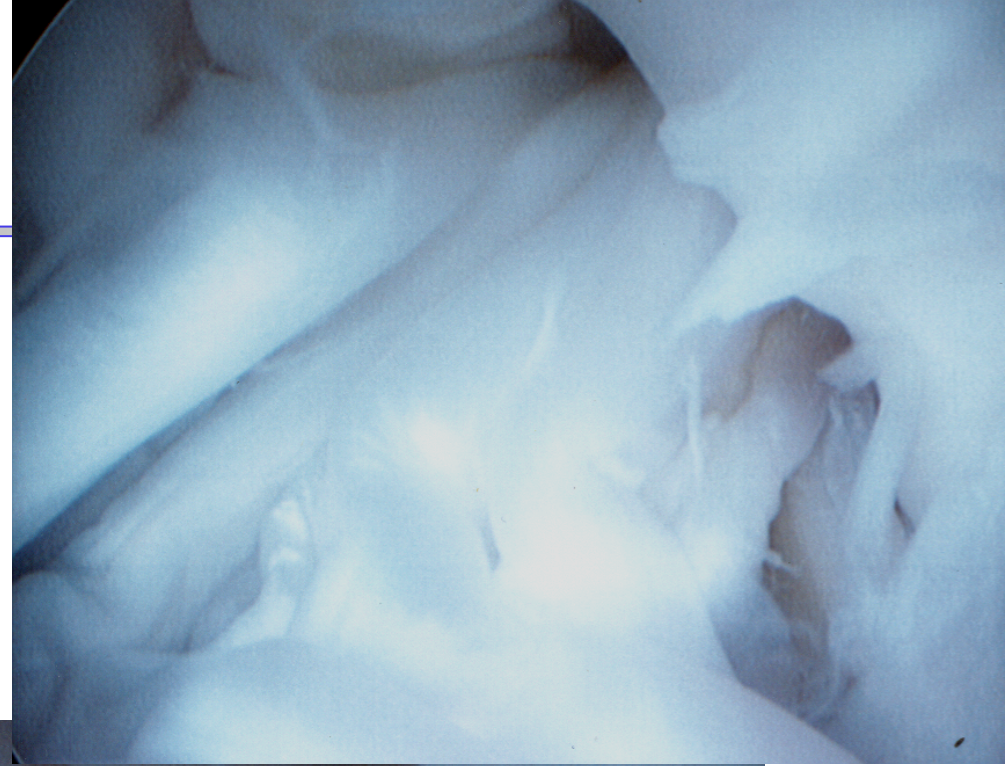
MRI in 2014



B. al. C. 31 years old

- What's your opinion ?
- How to manage this professional athletes ?
- What are the treatment options?

Arthroscopy



Patient was routinely consuming:
Cocaine
Amphetamin
Alcool +++
Smoking



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Thank you for listening

