

# HTO combined with ACL Reconstruction on valgus : Case-based

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2019



Woman, 31 years old Left knee

Reason for consultation: pain and instability

History: ACL tear in 2005 falling down stairs ACL reconstructed with hamstrings in 2005

Revisions with KJ in 2008

Re-revision with OTV + ACL reconstruction (contralateral KJ graft) + lateral TFL tenodesis in 2014

New work-related accident on 2019

Feeling very unstable

Height: 1.69m Weight: 101kg

Past medical history: sleeve gastrectomy 1 month ago Allergies: medication 0, tobacco 0"

# Clinical exam



Lachman Trillat soft end point

Pivotshift +

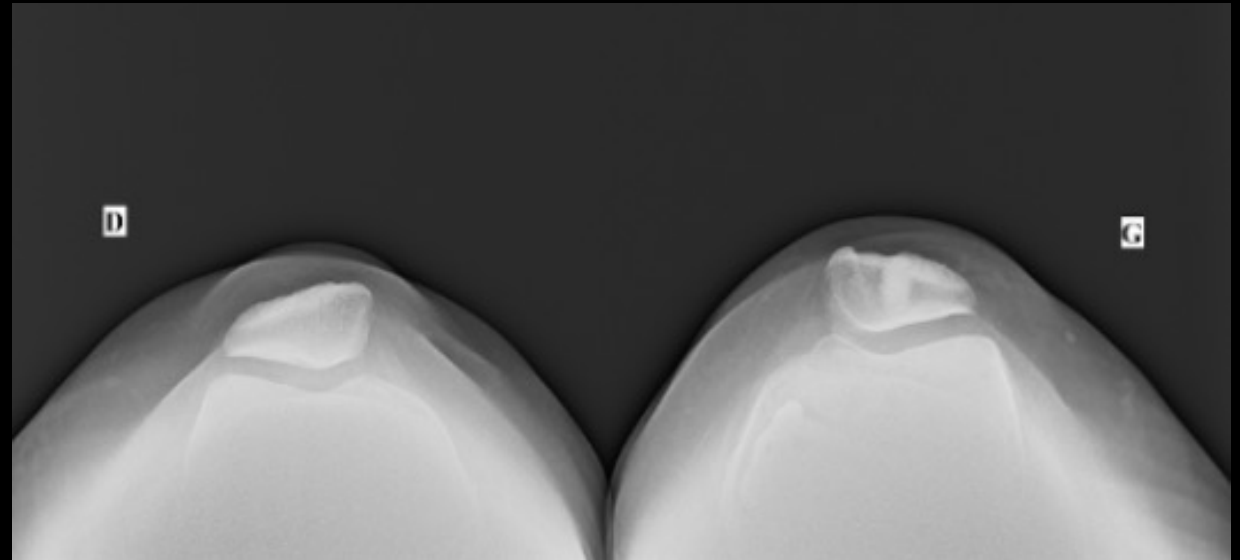
Genu valgum ++ on left side

ROM 0/0/120

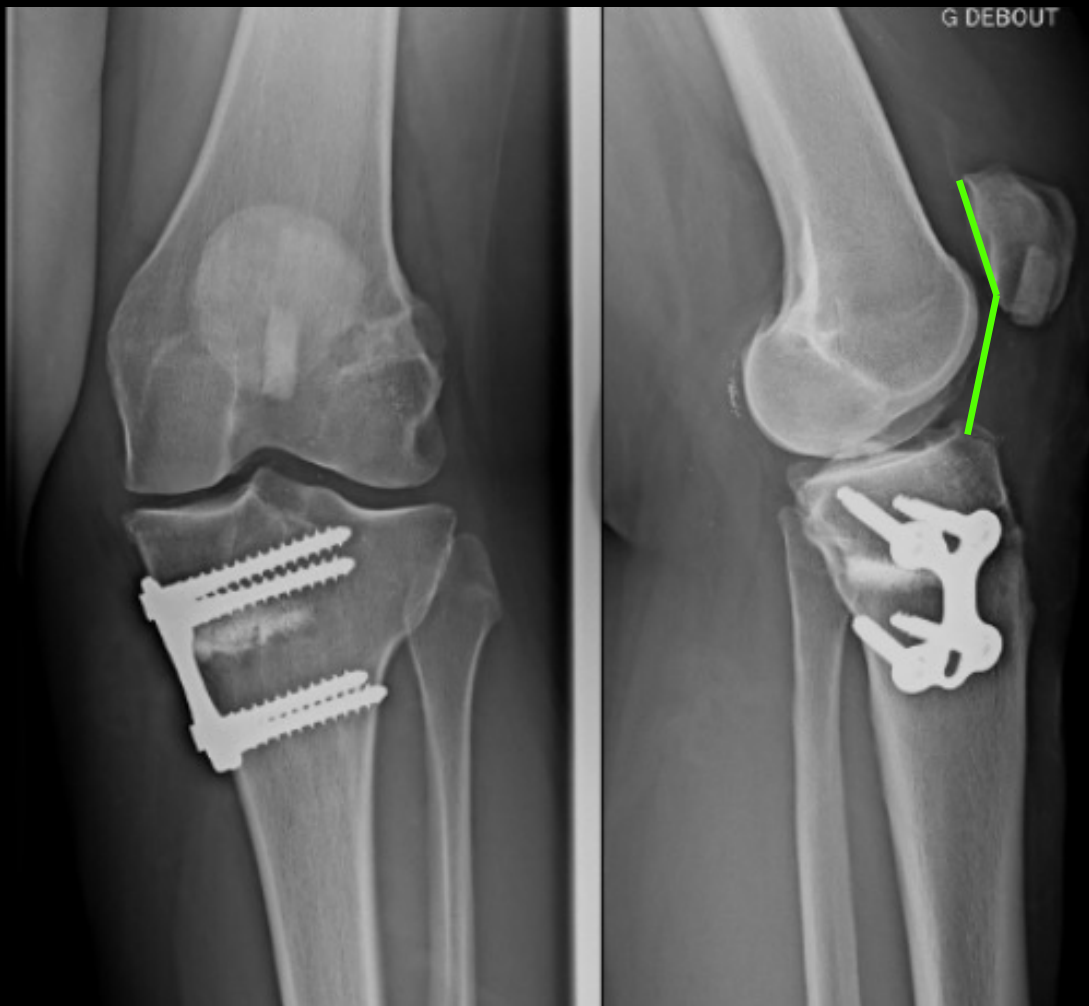
Diffuse pain

Patella : appréhension sign ++

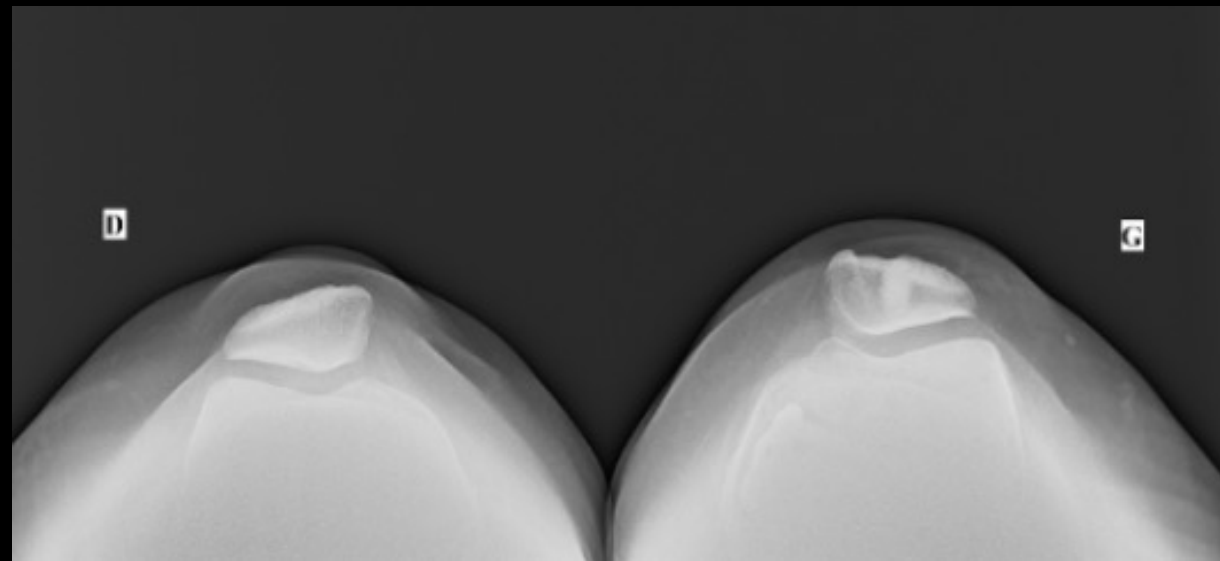
# X-Rays



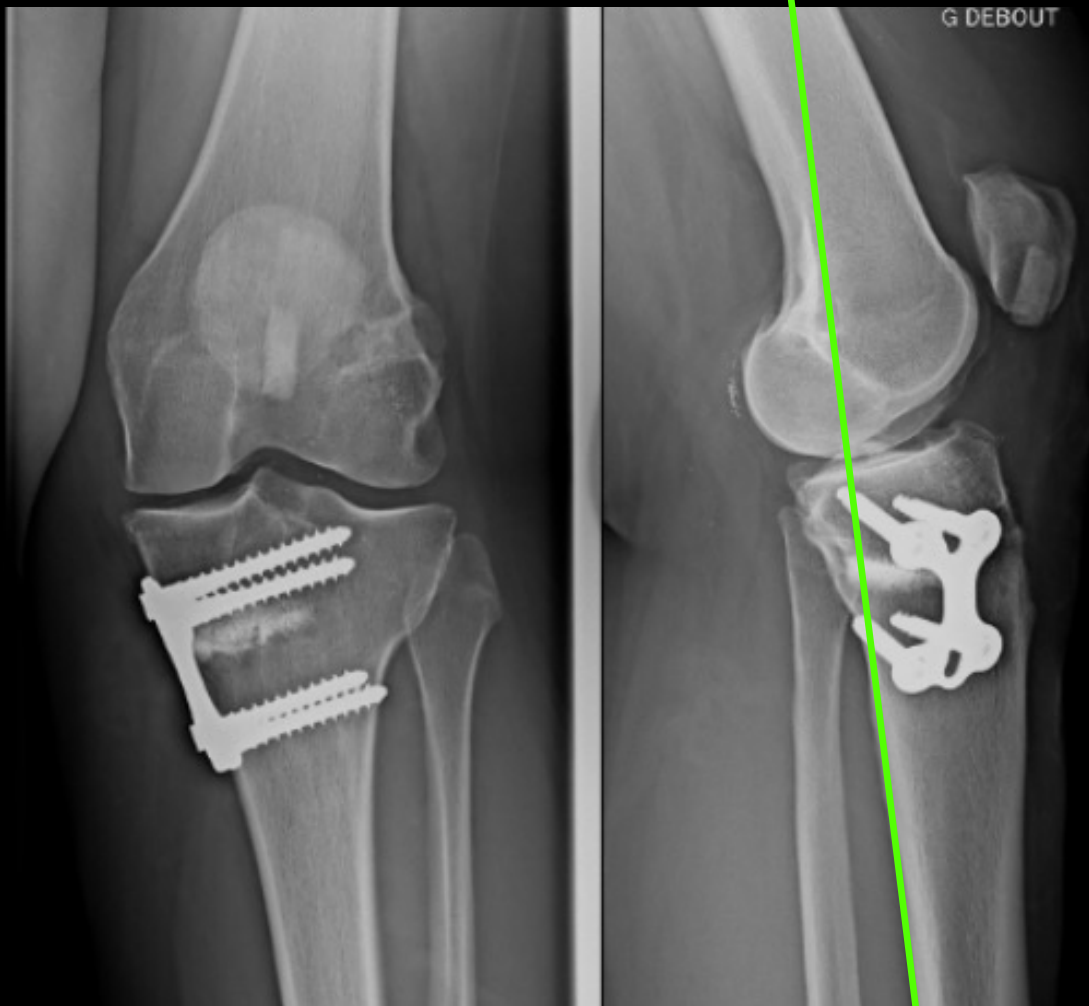
# X-Rays



Index CD : 36/33

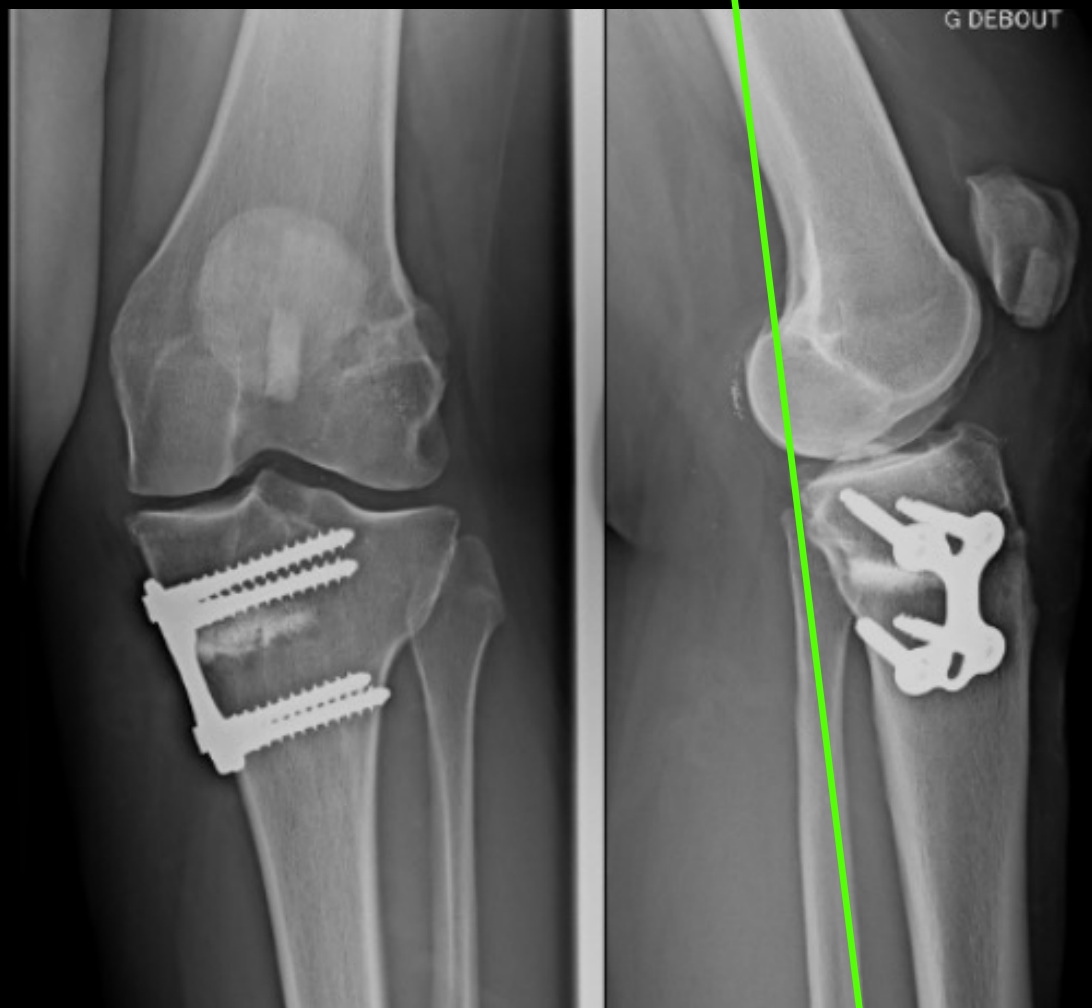


# X-Rays



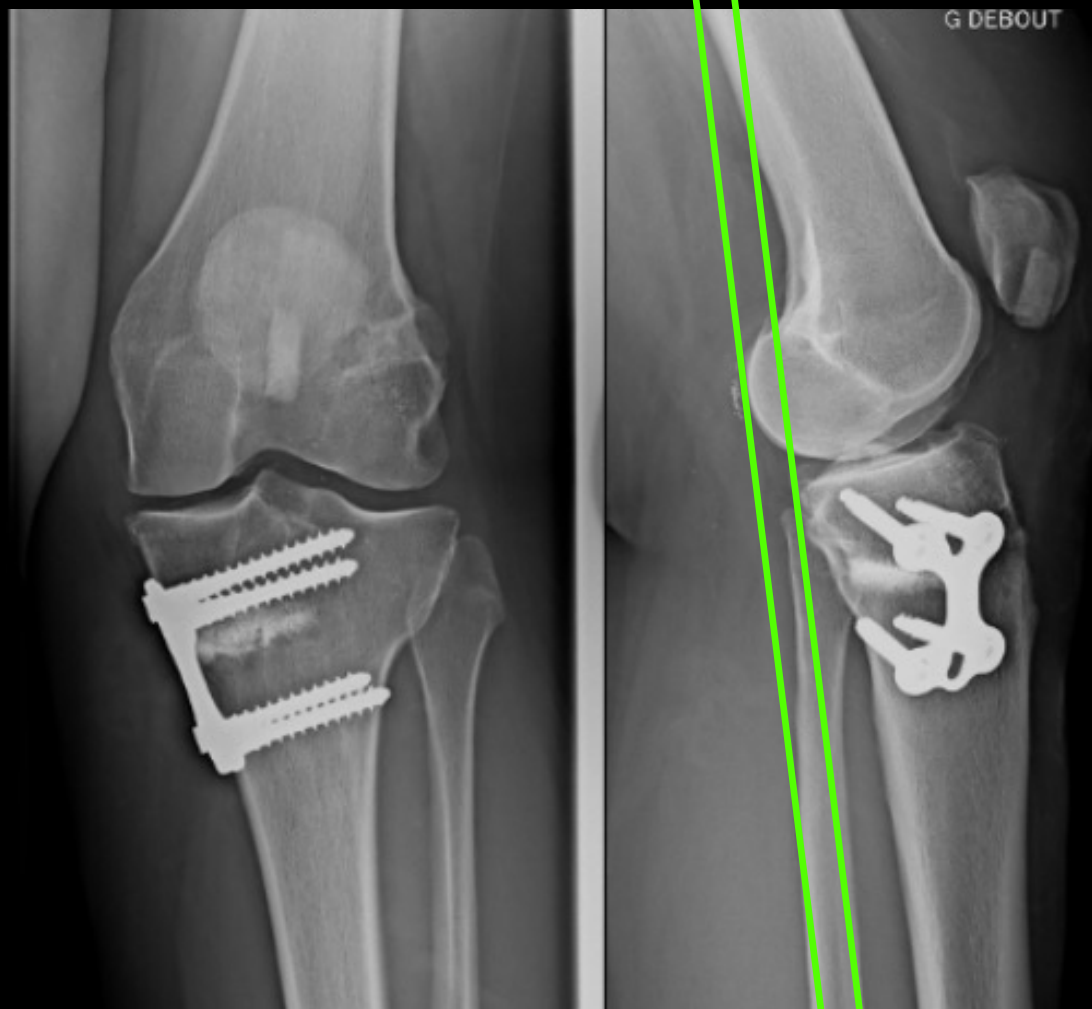
Anterior tibial translation on monopodal weightbearing xrays

# X-Rays



Anterior tibial translation on monopodal weightbearing xrays

# X-Rays



Anterior tibial translation on  
monopodal weightbearing xrays  
=9mm





## Translation Tibiale Antérieure

 **Risque de rupture du LCA ou de lésion méniscale**

**Seuil : TTA Statique > 5mm**

> *Knee Surg Sports Traumatol Arthrosc.* 2019 Nov;27(11):3481-3489.  
doi: 10.1007/s00167-019-05435-0. Epub 2019 Feb 26.

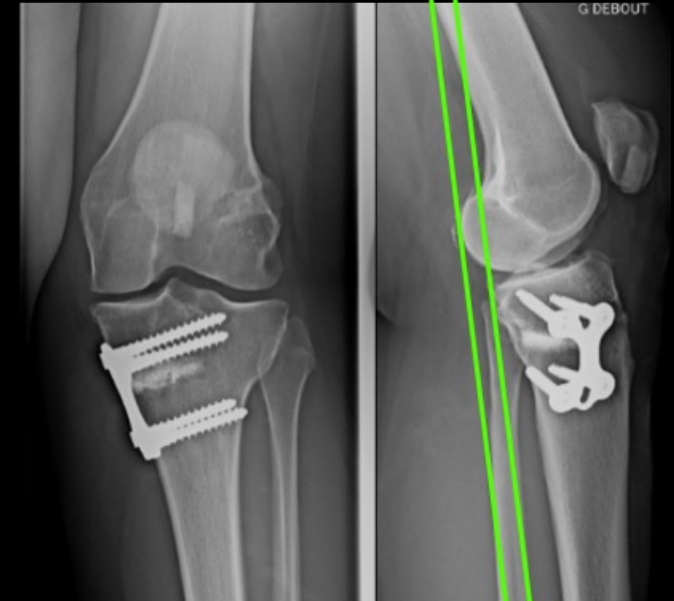
**Tibial slope and medial meniscectomy significantly influence short-term knee laxity following ACL reconstruction**

David Dejour <sup>1</sup>, Marco Pungitore <sup>1</sup>, Jeremy Valluy <sup>2</sup>, Luca Nover <sup>2</sup>, Mo Saffarini <sup>3</sup>, Guillaume Demey <sup>1</sup>

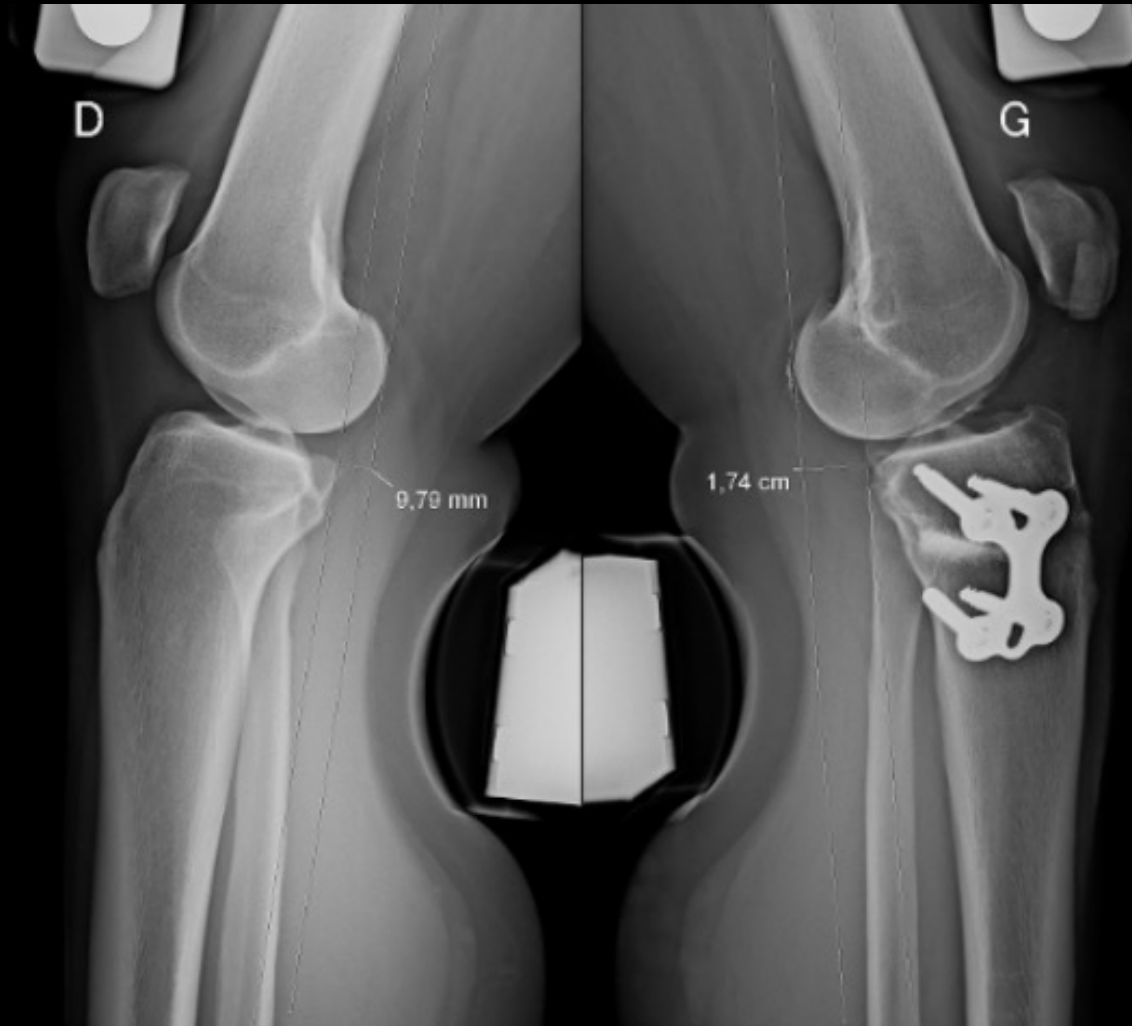
> *Am J Sports Med.* 2020 Oct;48(12):2954-2961. doi: 10.1177/0363546520949212.  
Epub 2020 Aug 31.

**Steep Posterior Tibial Slope and Excessive Anterior Tibial Translation Are Predictive Risk Factors of Primary Anterior Cruciate Ligament Reconstruction Failure: A Case-Control Study With Prospectively Collected Data**

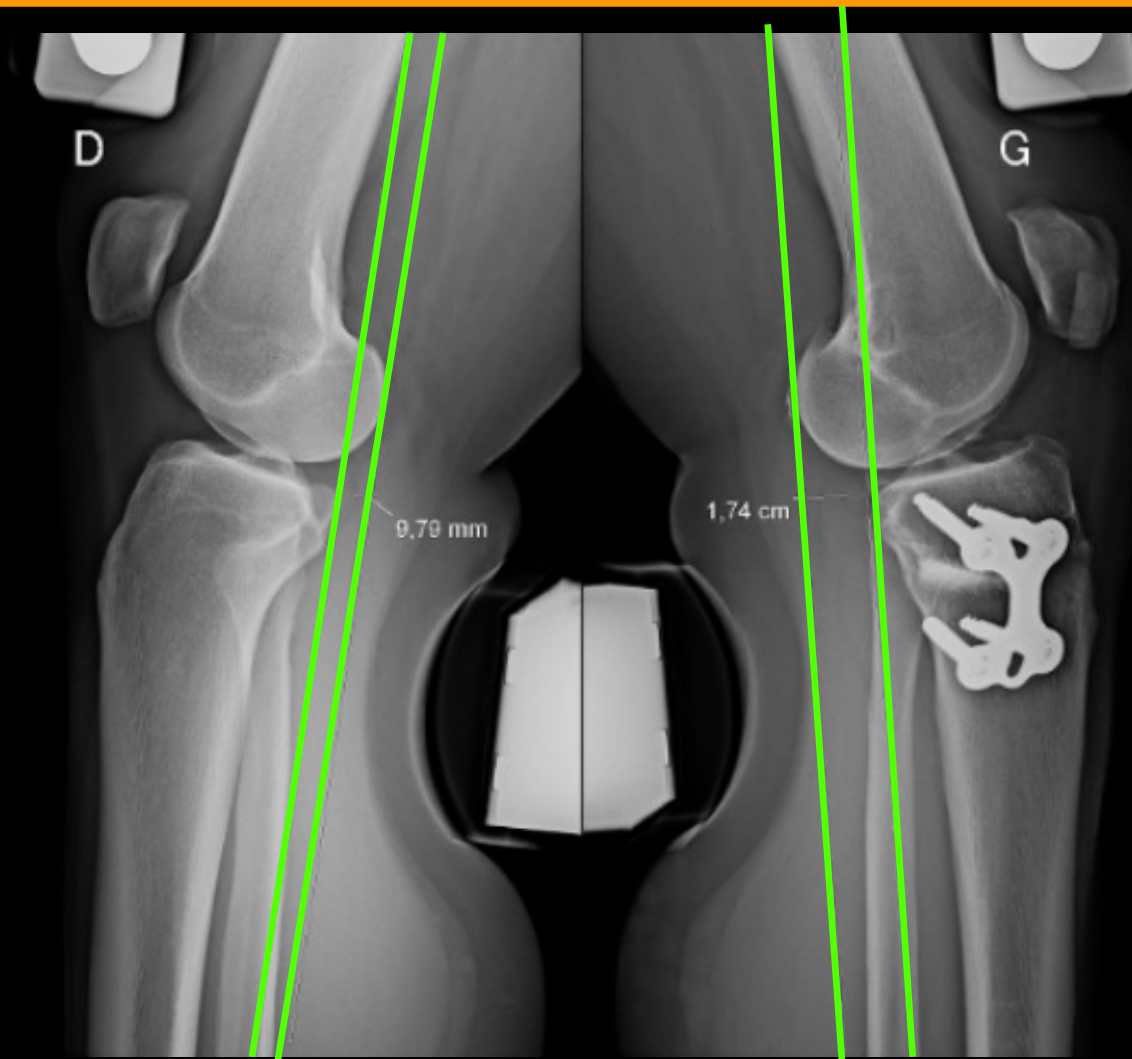
Qian-Kun Ni <sup>1</sup>, Guan-Yang Song <sup>1</sup>, Zhi-Jun Zhang <sup>1</sup>, Tong Zheng <sup>1</sup>, Zheng Feng <sup>1</sup>, Yan-Wei Cao <sup>1</sup>, Hua Feng <sup>1</sup>, Hui Zhang <sup>1</sup>



# Laxity grading



# Laxity grading



Translation on Telos (15N)  
17.4mm versus 9mm

# Posterior tibial slope



PTS = 12° versus 12°

# Posterior tibial slope

**RLCA** → **TAUX DE RE-RUPTURE : 17-25%**

## Facteurs de Risque de rerupture

- Malposition des tunnels
- Laxité post-opératoire
- Sport pivot-contact
- Age jeune

**Pente > 10°**



→ **IJ = 22% d'échec à 20ans**  
**BTB = R-rerupture x2**



Meta-Analysis > Arthroscopy. 2023 May;39(5):1299-1309.e6.  
doi: 10.1016/j.arthro.2022.12.034. Epub 2023 Jan 21.

## Elevated Posterior Tibial Slope Is Associated With Anterior Cruciate Ligament Reconstruction Failures: A Systematic Review and Meta-analysis

Robert Duerr<sup>1</sup>, Benjamin Ormseth<sup>2</sup>, Jeremy Adelstein<sup>2</sup>, Andrew Garrone<sup>2</sup>, Alex DiBartola<sup>2</sup>, Christopher Kaeding<sup>2</sup>, David Flanigan<sup>2</sup>, Robert Siston<sup>3</sup>, Robert Magnussen<sup>2</sup>

# Long leg films

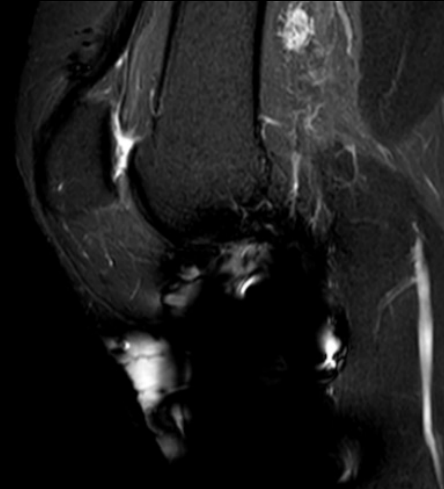
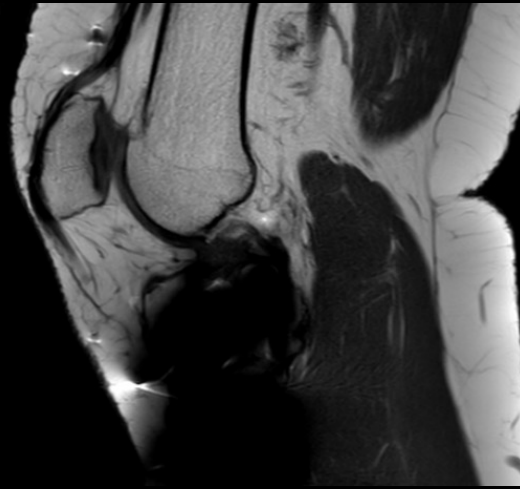
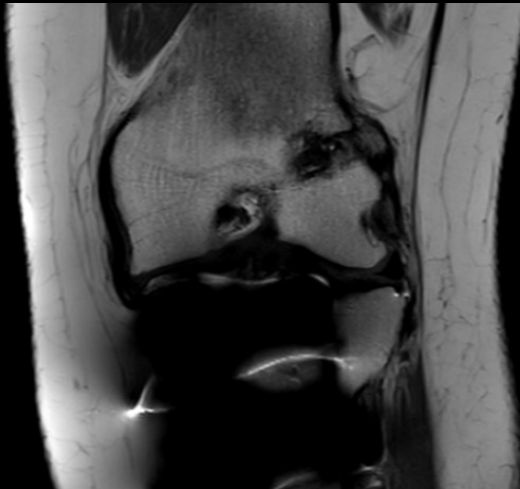
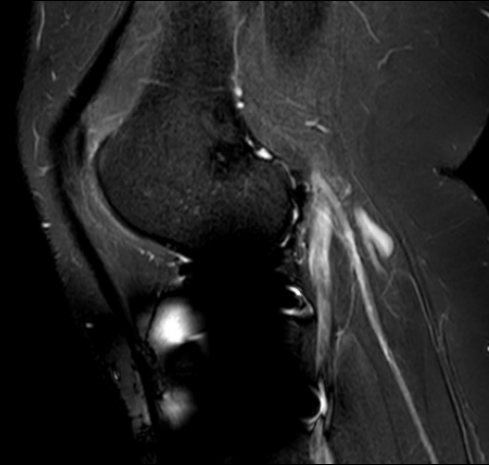
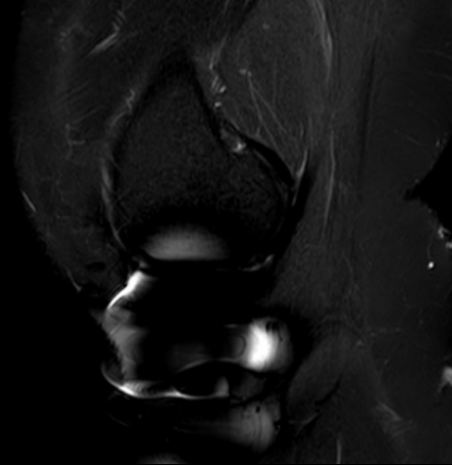


# Long leg films



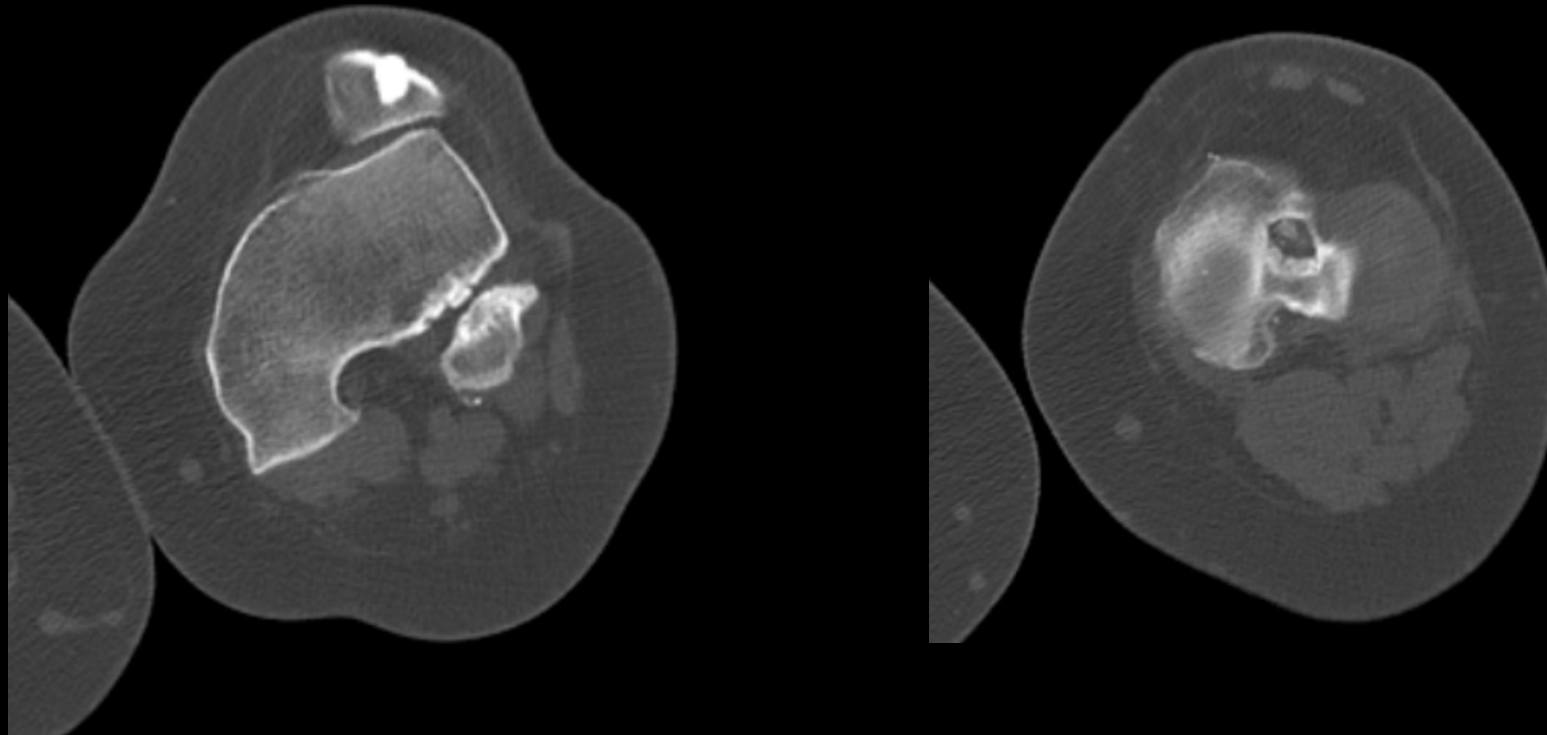
AFTm 187°  
MPTA 92°  
LDFA 85°  
JLCA 0°

# MRI





# CT scan



# Arthro-CT Scan



Posterior horn of the medial meniscus absent

ACL poorly visualized

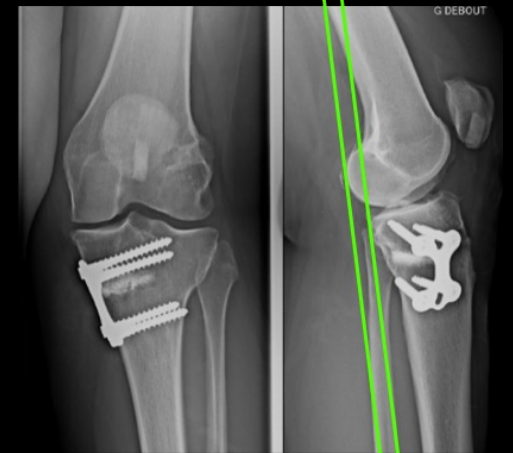
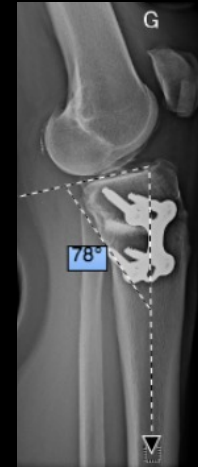
Lateral femorotibial chondropathy

Femoropatellar chondropathy

Low-grade femoropatellar dysplasia

# What would you do?

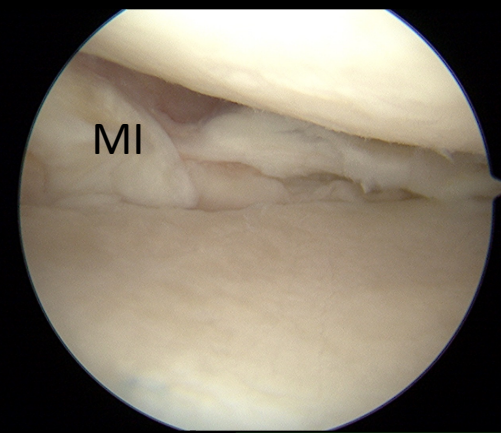
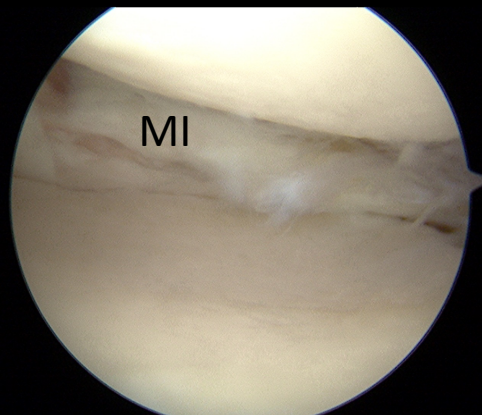
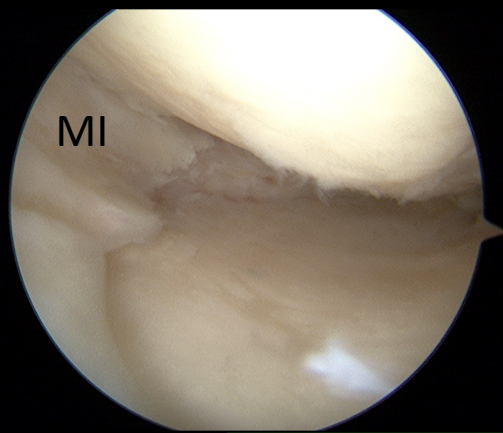
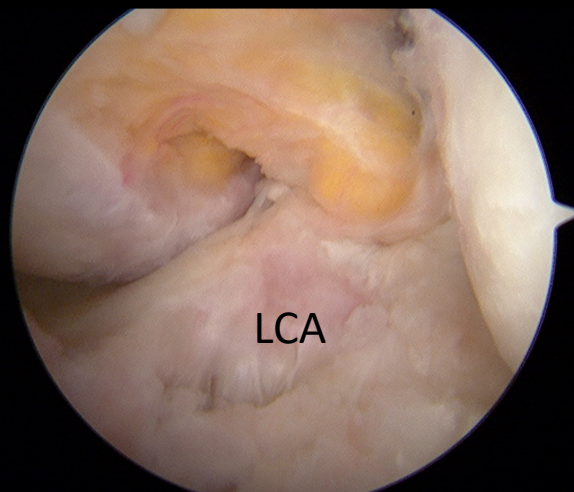
- A. ACL Reconstruction + anterolateral plasty (LAL/LET)
- B. Isolated Varization HTO
- C. Varzation HTO + ACL reconstruction
- D. Isolated Deflexion osteotomy
- E. Deflexion osteotomy + ACL reconsruction
- F. Other

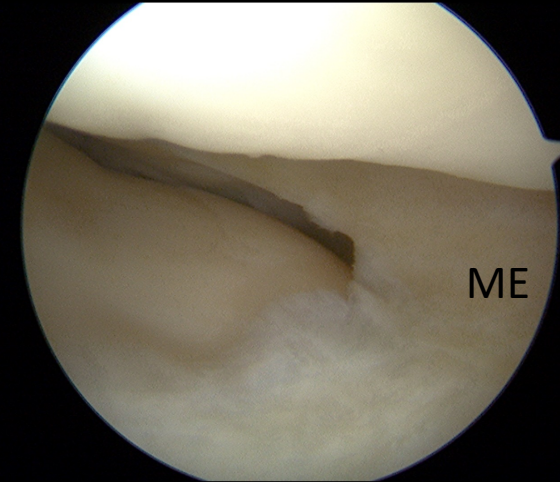
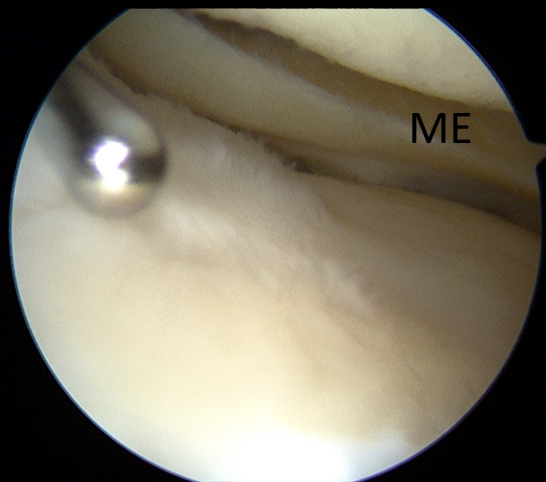
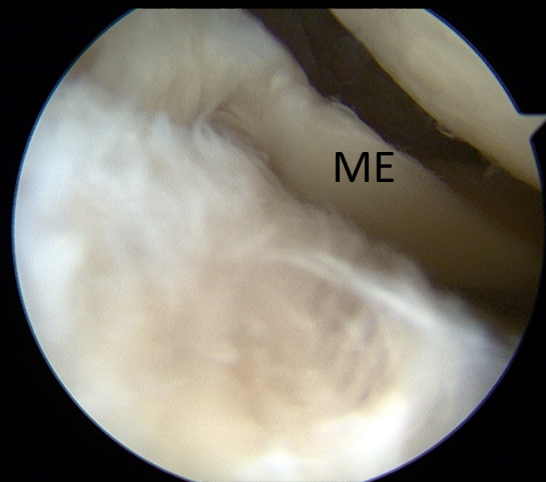


# Graft choice

- A. Synthetic
- B. Autograft hamstring contralateral
- C. Autograft quad tendon homolateral
- D. Autograft quad tendon contralateral
- E. Allograft

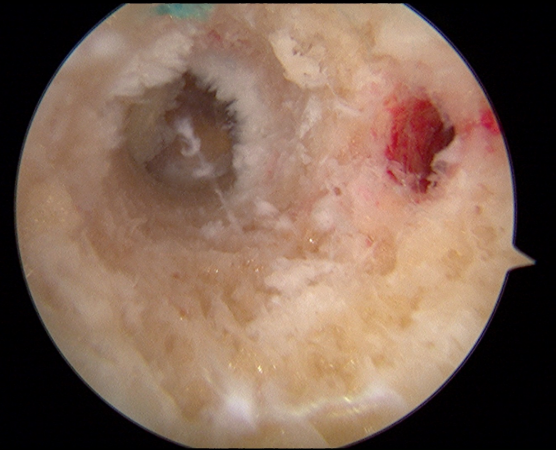
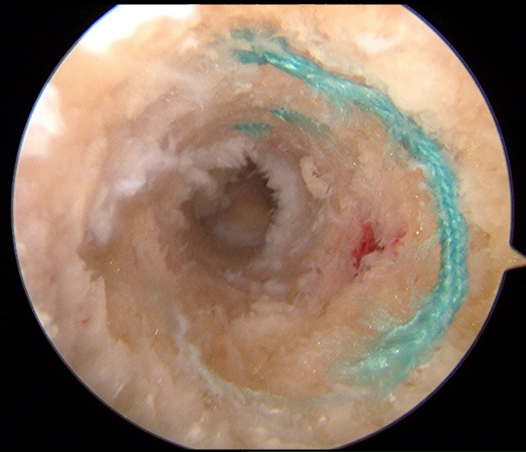
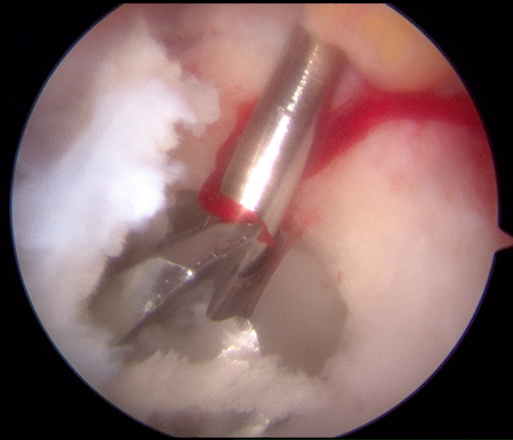
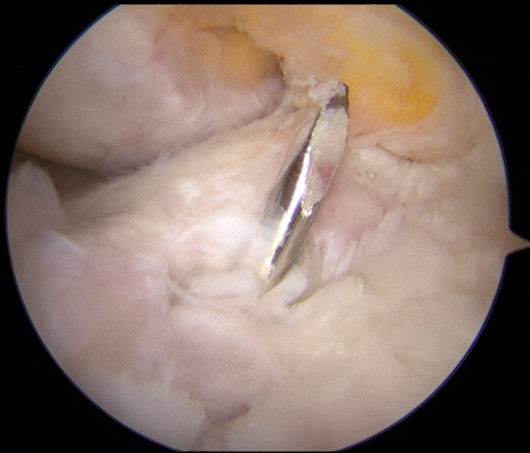


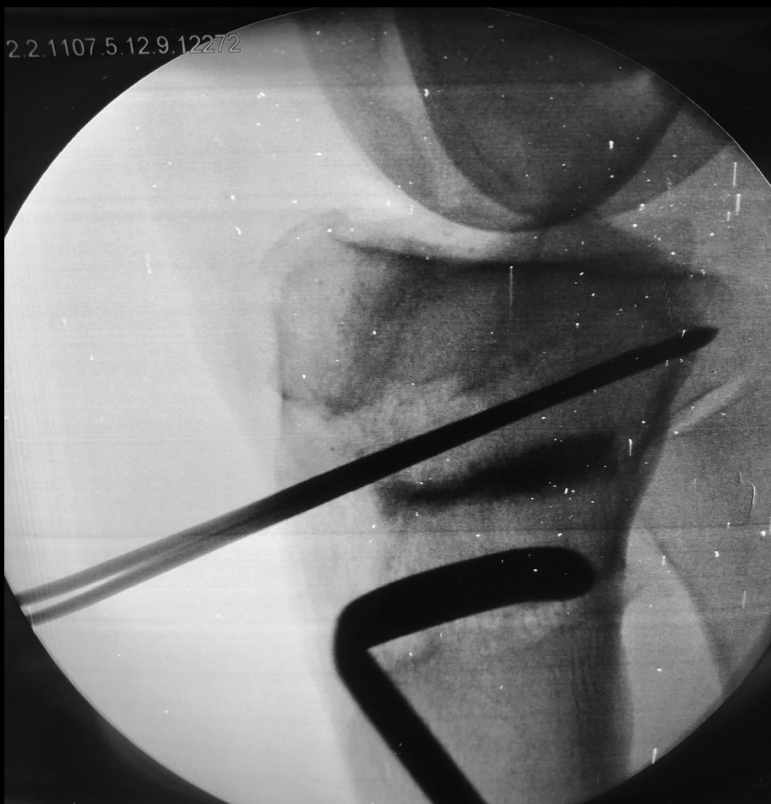






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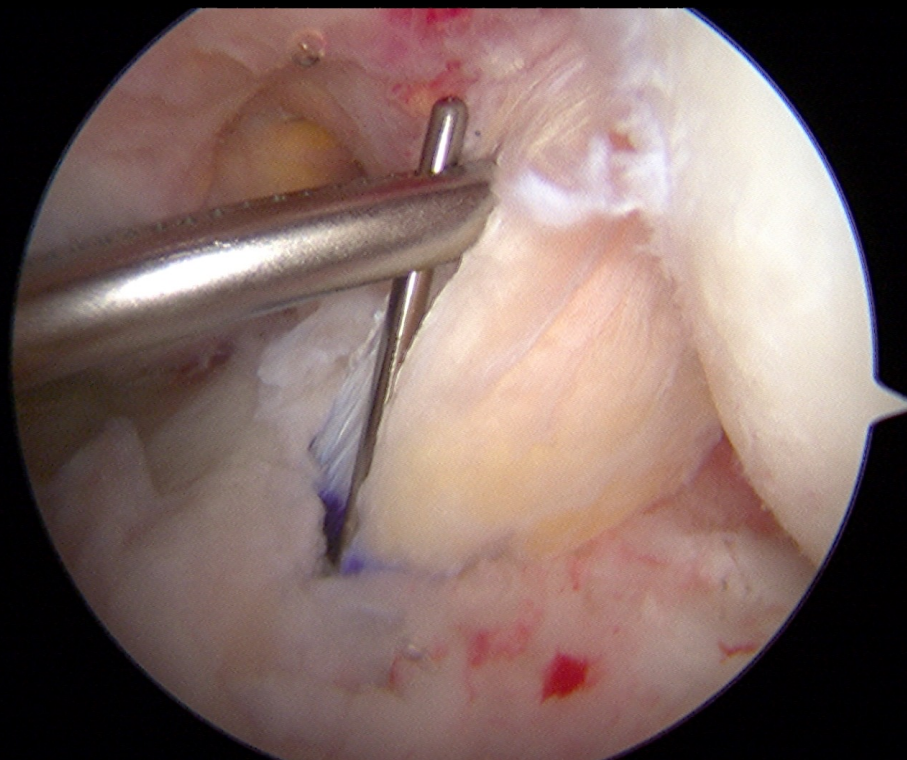
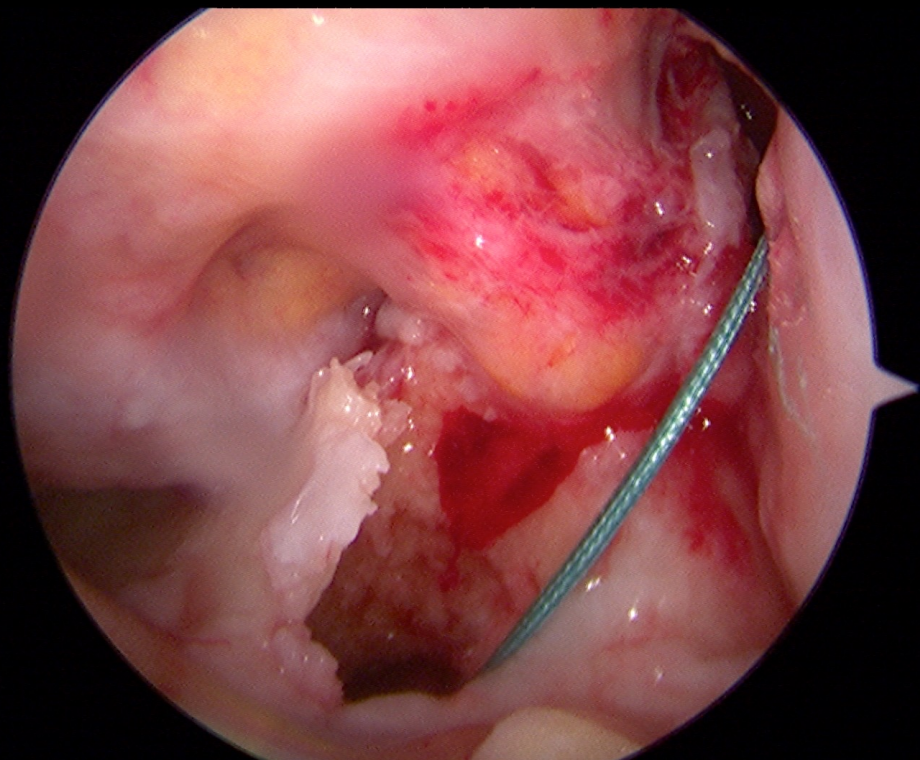


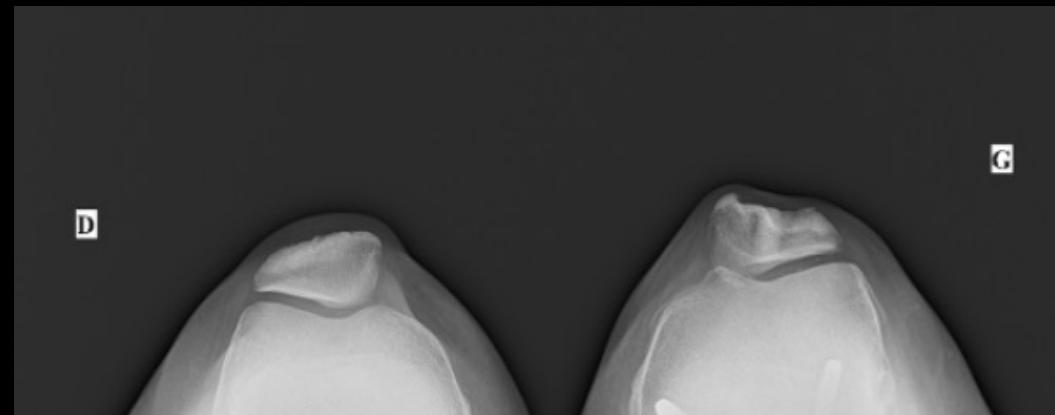


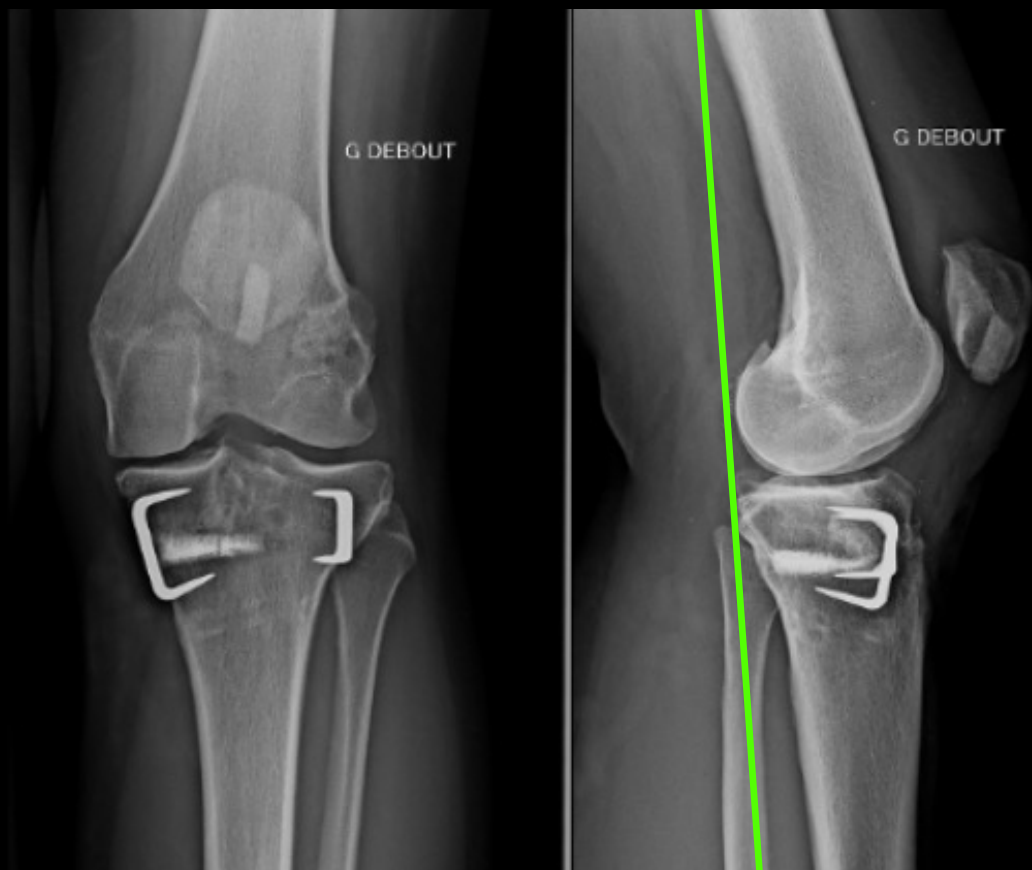




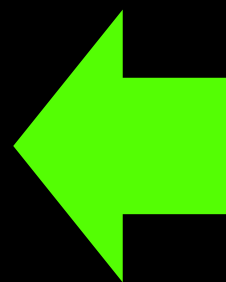
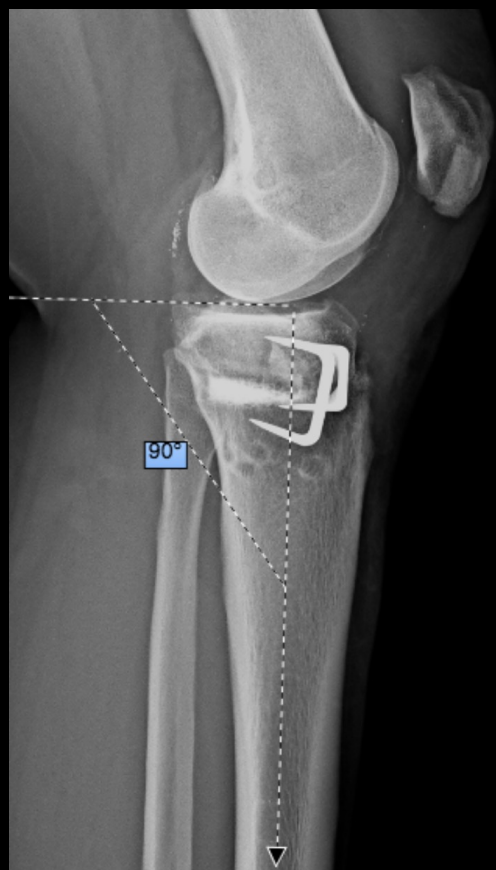
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Normalized anterior tibial translation on monopodal weightbearing xrays



# 4 years follow-up



*Va bien concernant le genou mais gênée par les mauvaises sensations procurées par la rotule et le prélèvement itératif*

**Examens :** *hydarthrose absente  
lachman arrêt dur  
pas de ressaut  
pas de laxité frontale  
mobilités 0/0/150  
pas de douleur  
rotule centrée  
extension active +*

# TAKE HOME MESSAGE

- ✓ Biplanar Osteotomy
- ✓ Control posterior tibial slope
- ✓ Slope must be normalized in all cases
- ✓ Anticipation : preop planning & PSI may help
- ✓ Allograft

