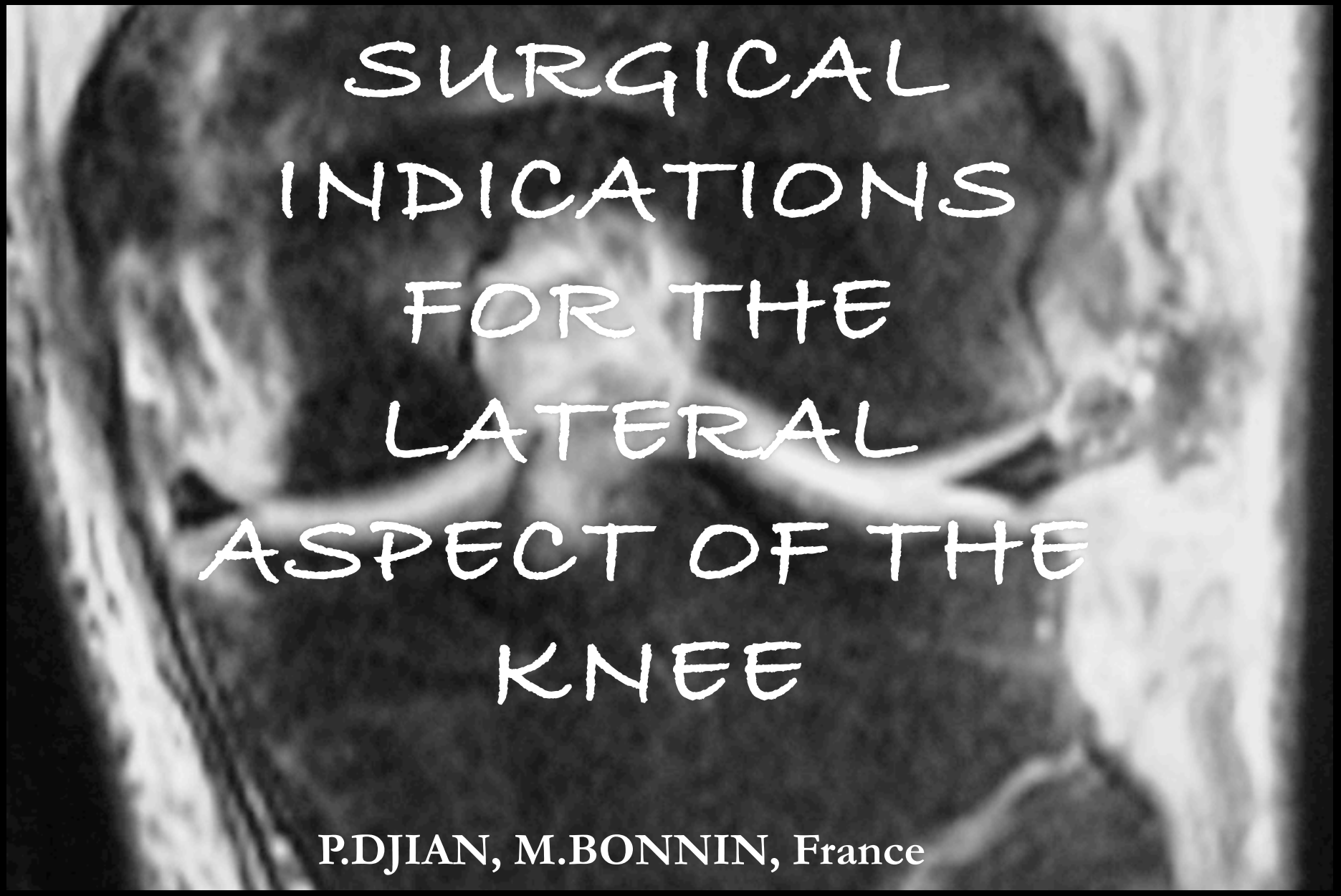


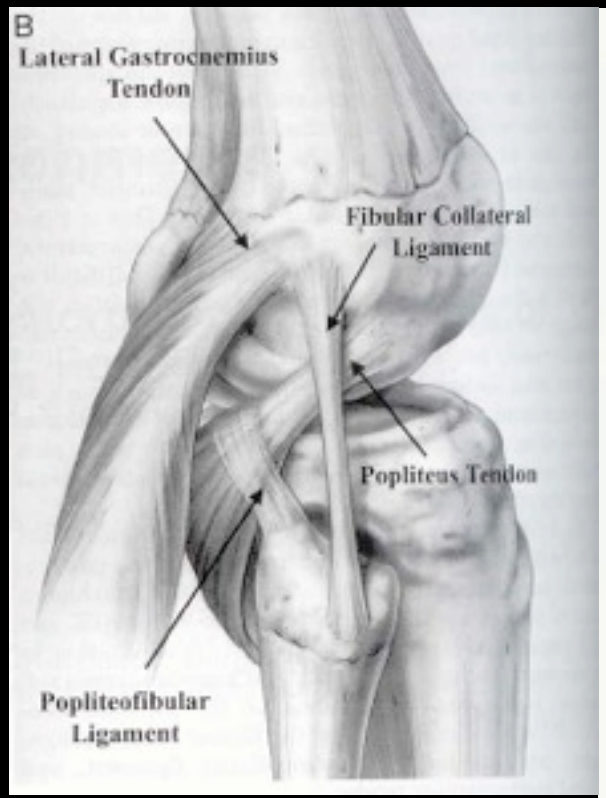
SURGICAL INDICATIONS FOR THE LATERAL ASPECT OF THE KNEE

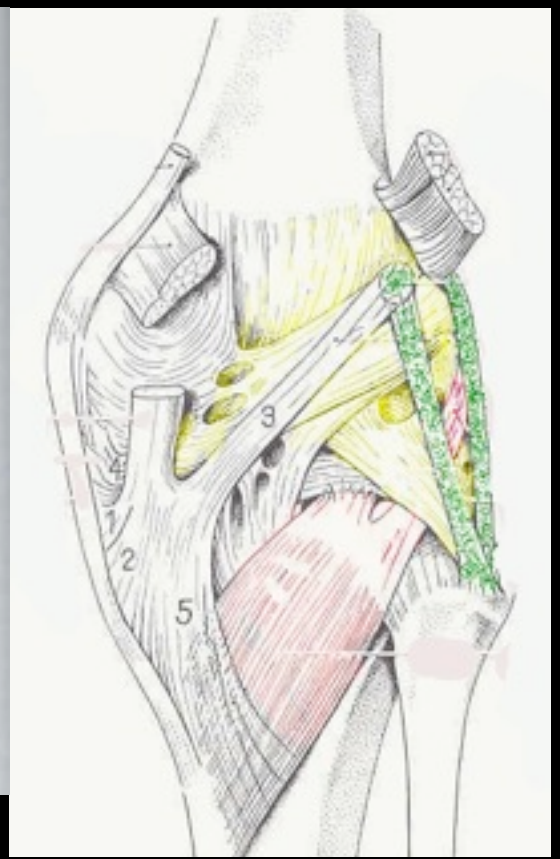
P.DJIAN, M.BONNIN, France

ACL + peripheral tears

ACL + Postero lateral

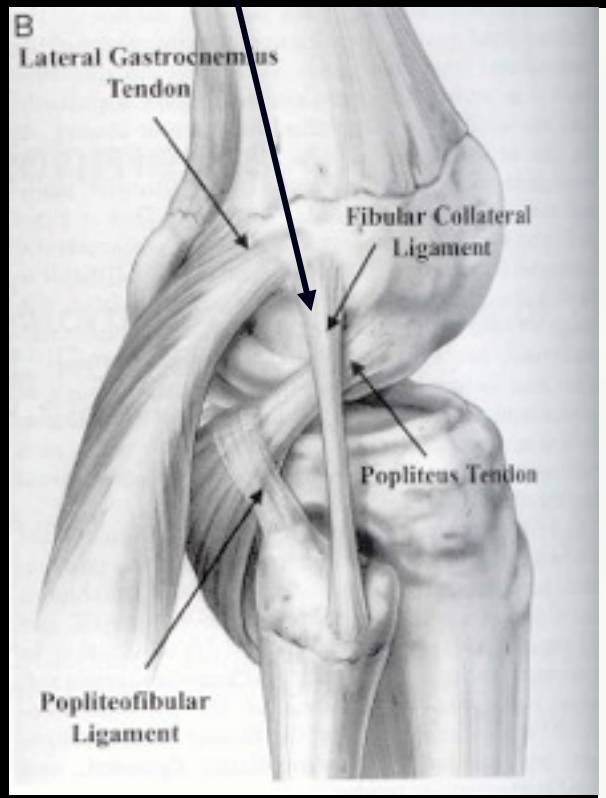
ACL + Postero lateral tears

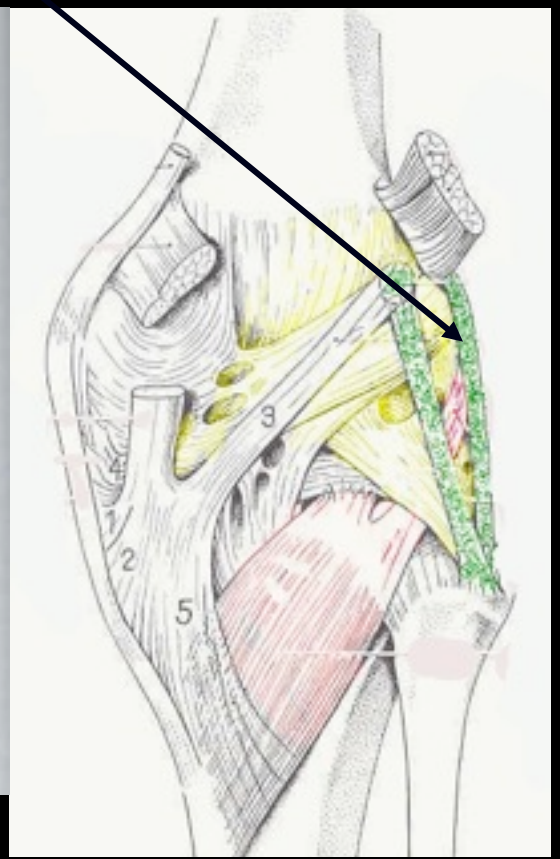




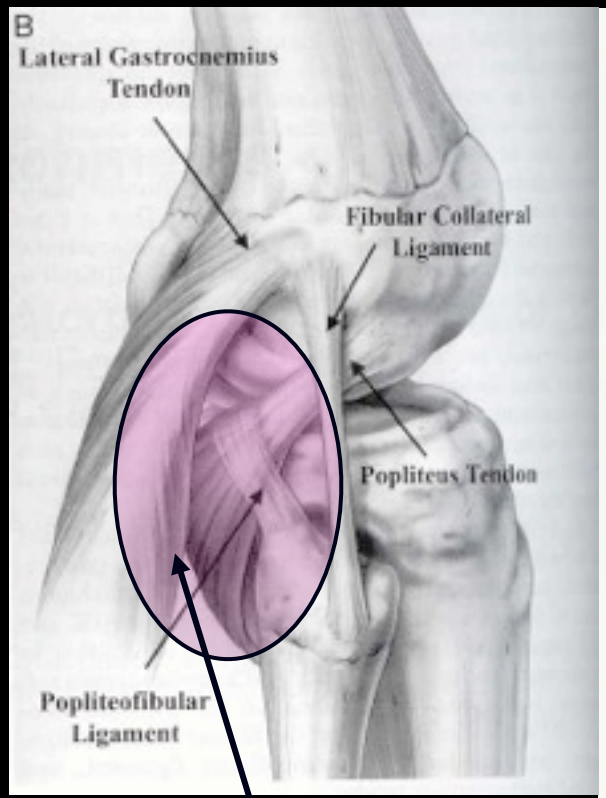
ACL + Postero lateral tears

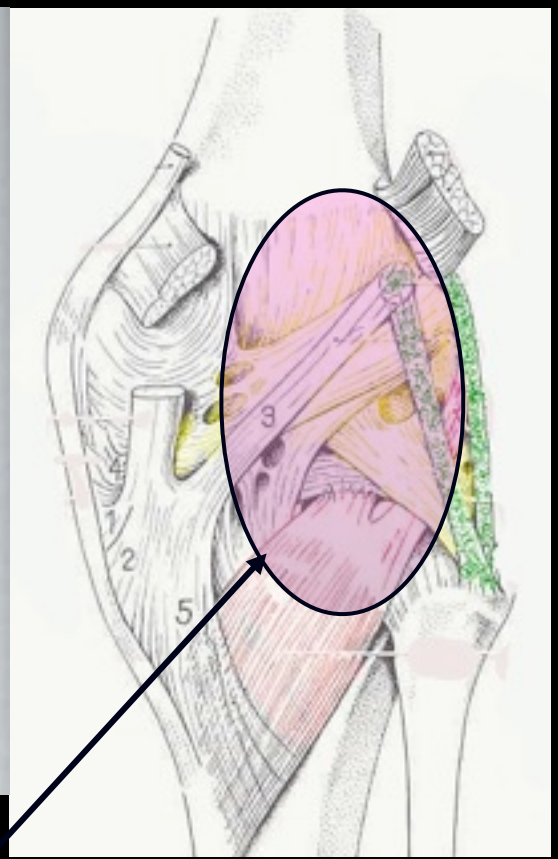
LATERAL COLLATERAL Ligt





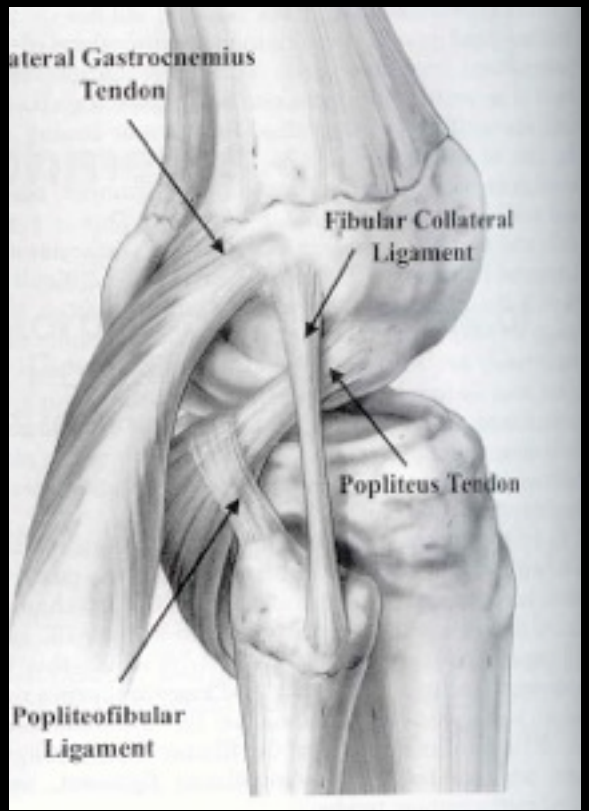
ACL + Postero lateral tears

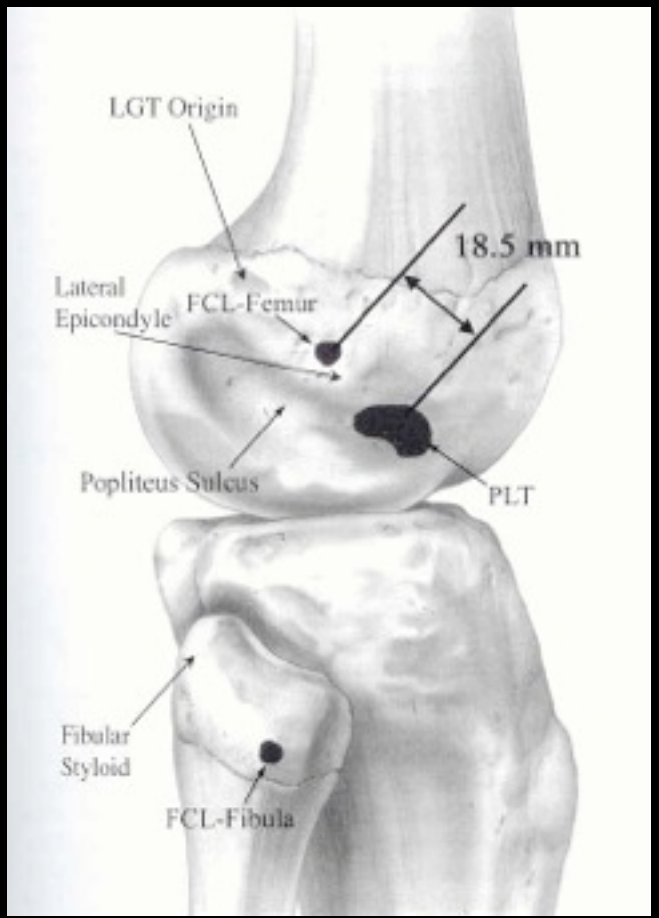




POSTERO LATERAL CORNER

ACL + Postero lateral tears



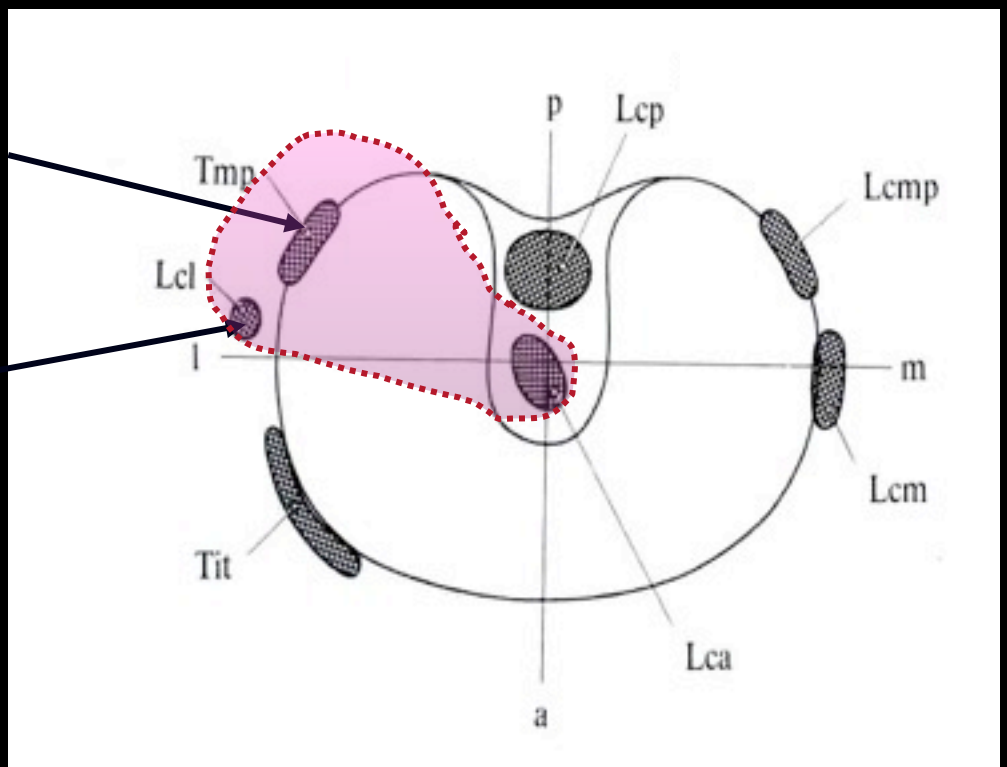


Postero lateral tears: anatomy

LCL ➧ Lateral laxity (coronal plane)
Posterolateral corner ➧ Rotatory laxity (axial plane)

PL corner

LCL



W Muller: Das Knie Springer Verlag 1982

Postero lateral tears : Diagnosis

Testing
Recurvatum test
Reverse pivot shift
Hyper Mobility in ER
Palpation of LCL
Laxity in varus (Clin)
Lateral Lift off (RX)

Hughston JBJS 1985, Noyes AJSM 2000, Bousquet, W Muller

Postero lateral tears : Diagnosis

Testing	LCL
Recurvatum test	-
Reverse pivot shift	±
Hyper Mobility in ER	-
Palpation of LCL	+
Laxity in varus (Clin)	+
Lateral Lift off (RX)	+

Hughston JBJS 1985, Noyes AJSM 2000, Bousquet, W Muller

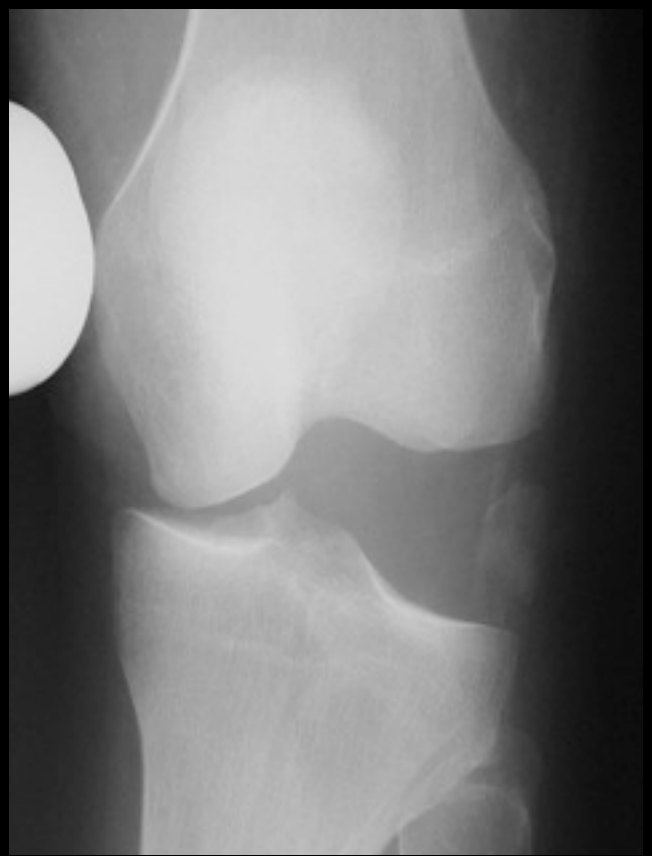
Postero lateral tears : Diagnosis

Testing	LCL	PLC
Recurvatum test	-	+
Reverse pivot shift	±	+
Hyper Mobility in ER	-	+
Palpation of LCL	+	-
Laxity in varus (Clin)	+	-
Lateral Lift off (RX)	+	-

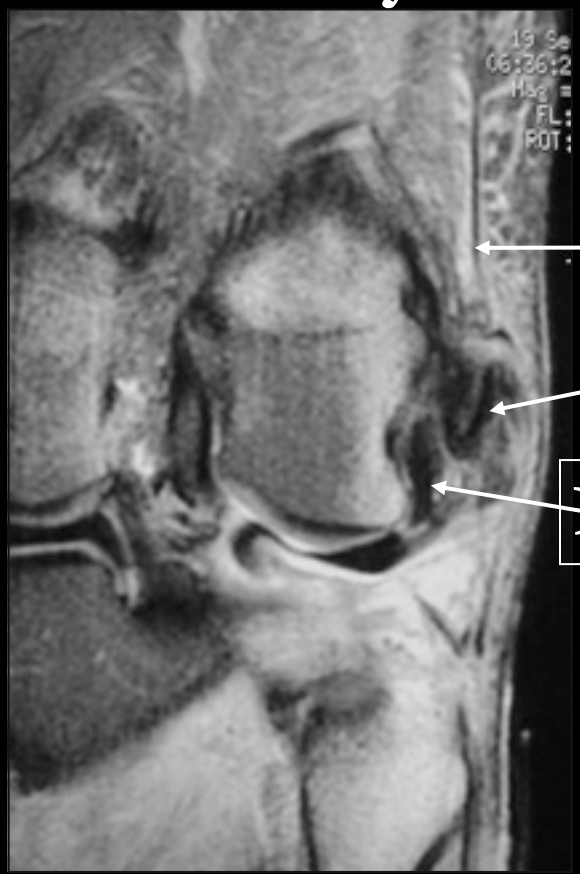
Hughston JBJS 1985, Noyes AJSM 2000, Bousquet, W Muller

Postero lateral tears: Diagnosis

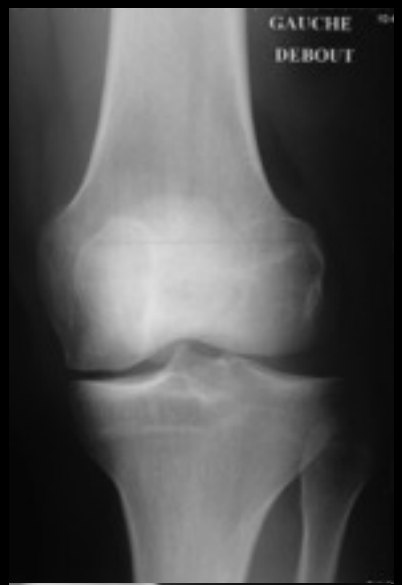
Dynamic XR

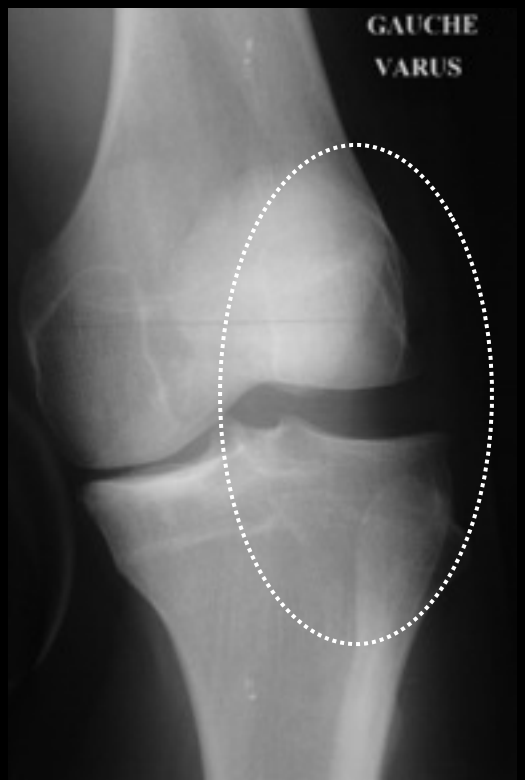


MRI: anatomic analysis



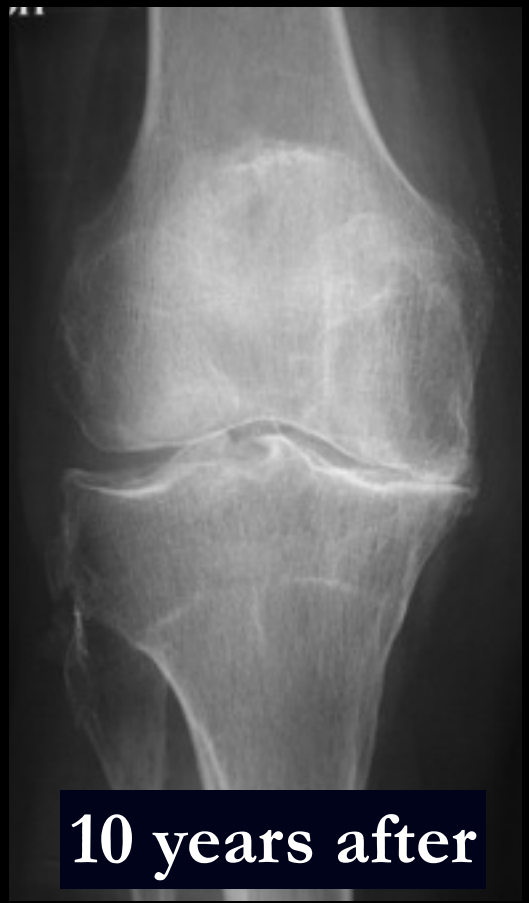
ACL + Lateral & postero lateral associated tears

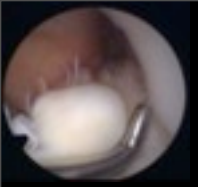




Postero lateral tears: Diagnosis

Postero lateral tears: Diagnosis

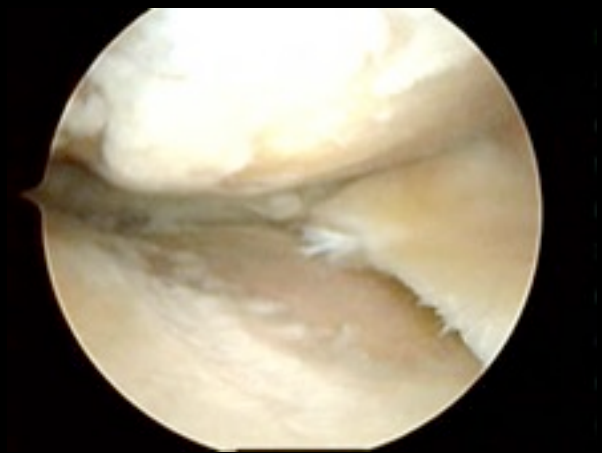




ACL & Varus knee

3 situations

- **Varus due to medial cartilage**
- **Varus due to LCL tear**
- **Varus due to constitutional alignment**



ACL + Postero lateral tears?

Under-estimated

10 à 15% of ACL ruptures

Neglected posterolateral lesions

Gersoff Clin Sport Med 1988

ACL + Posterolateral tears

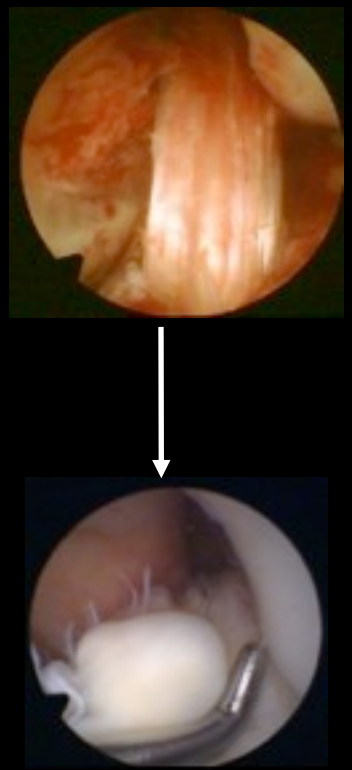
Residual lateral laxity

↓

Increased forces on the graft

↓

Re-Rupture of the ACL Graft

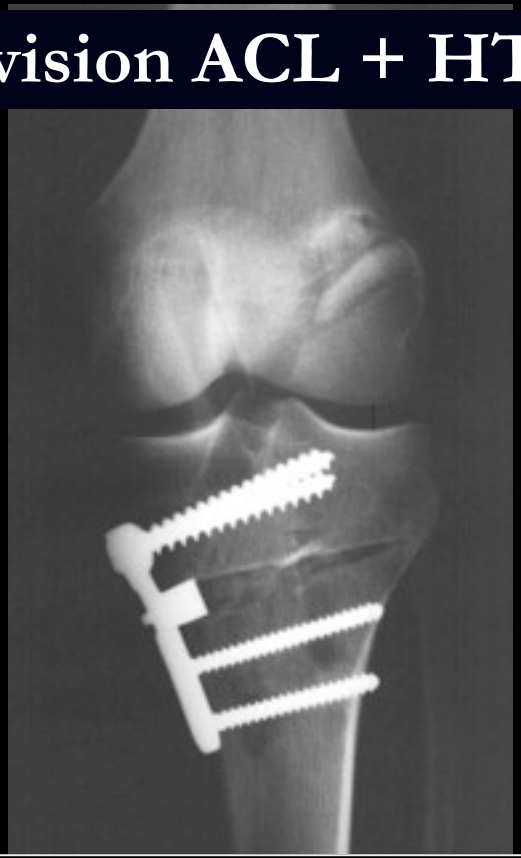


- 15% Schepsis (AANA 1995)
- 24% Noyes (AJSM 1996)

Hughston CORR 1980, JBJS 1985, Kannus AJSM 1987, Noyes AJSM 1995, Rubman C Orthop 1999, LaPrade AJSM 1999

Failure of isolated ACL reconstruction

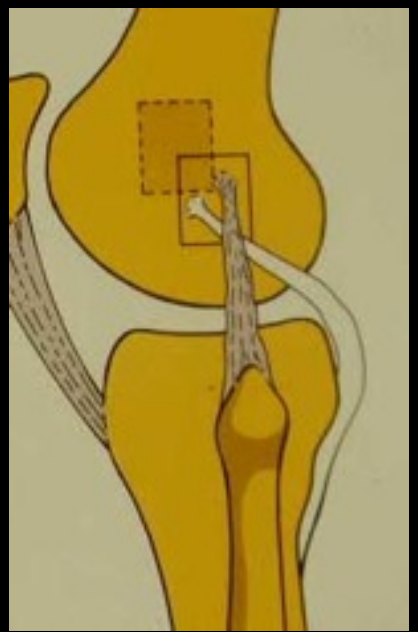
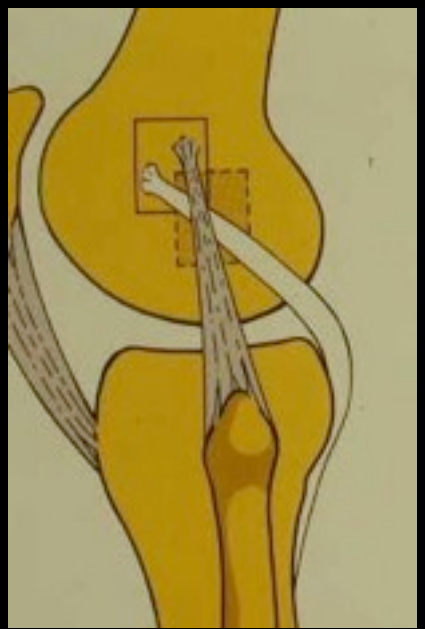
Neglected lateral laxity



Revision: ACL graft+ HTO

Lateral reconstruction: old techniques

- Translation of bone block with LCL & Popliteus
- Anterior and proximal translation


Hughston JBJS 1985

Trillat 1978 in Schultz Springer Verlag

- **Healing sometimes difficult**
- **Not if damages at mid-substance**

Lateral reconstruction: biceps tenodesis

Clancy
In Chapman, Lippincott, 1988

But decrease External rotation++

Lateral reconstruction: biceps tenodesis

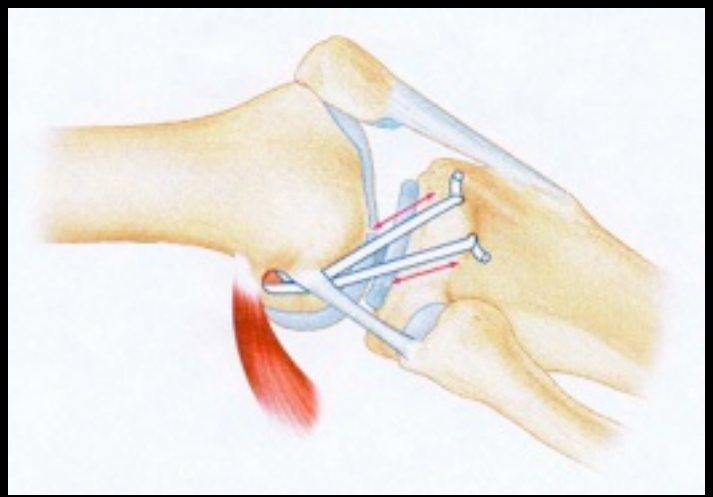
Clancy

In Chapman, Lippincott, 1988

Henry Dejour

But decrease External rotation++

Ilio Tibial Band Transfert ?

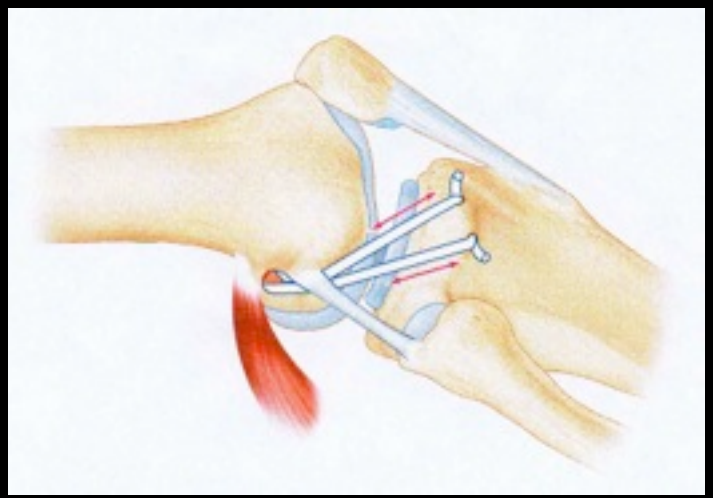


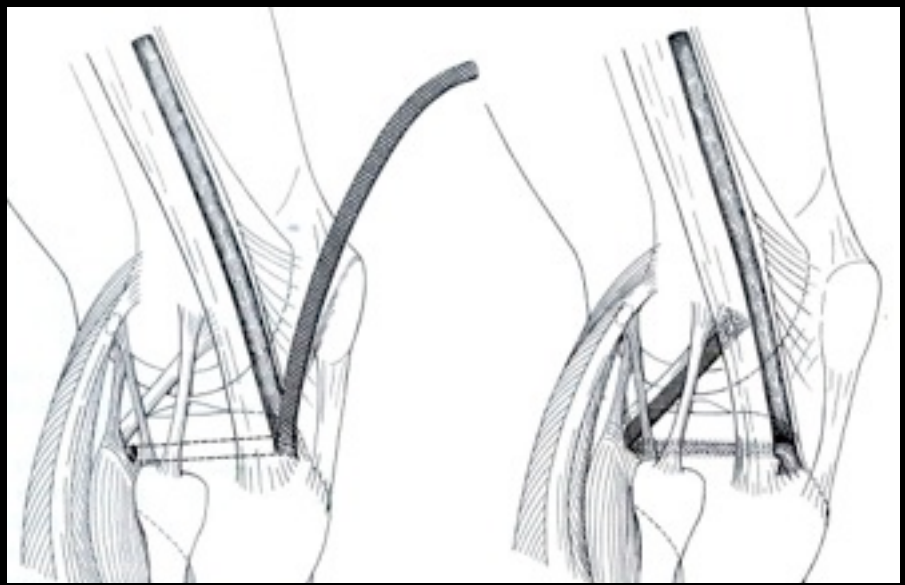
Antero lateral reconstructions
=
plasties « anti-ressaut »

≠ Plasties du LCL or PLC

Loosee, MacIntosh, Lemaire…

Ilio Tibial Band Transfert ?





Antero lateral reconstructions
=
plasties « anti-ressaut »

≠ Plasties du LCL or PLC

Loosee, MacIntosh, Lemaire…

Popliteal bypass
=
Reconstruction of PLC

≠ Plastie du LCL

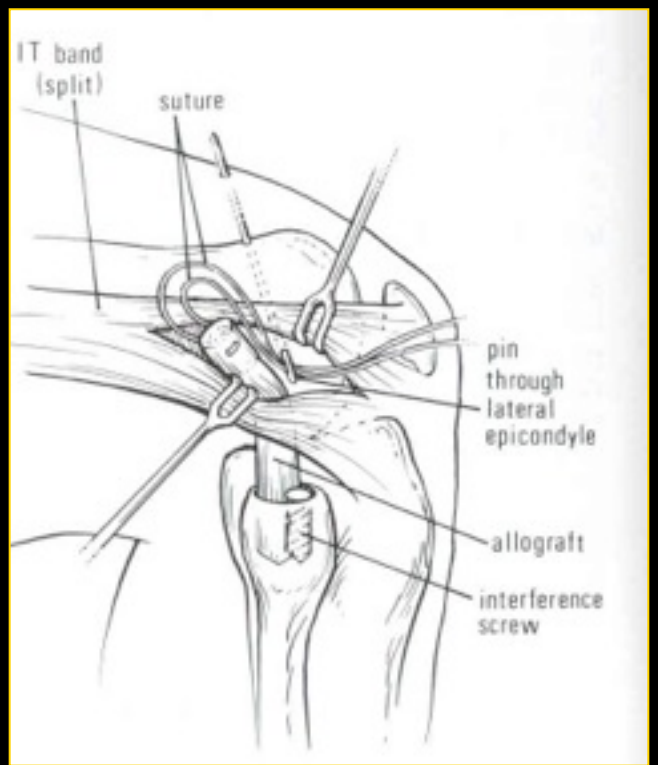
W Muller in Das Knie Springer 1982

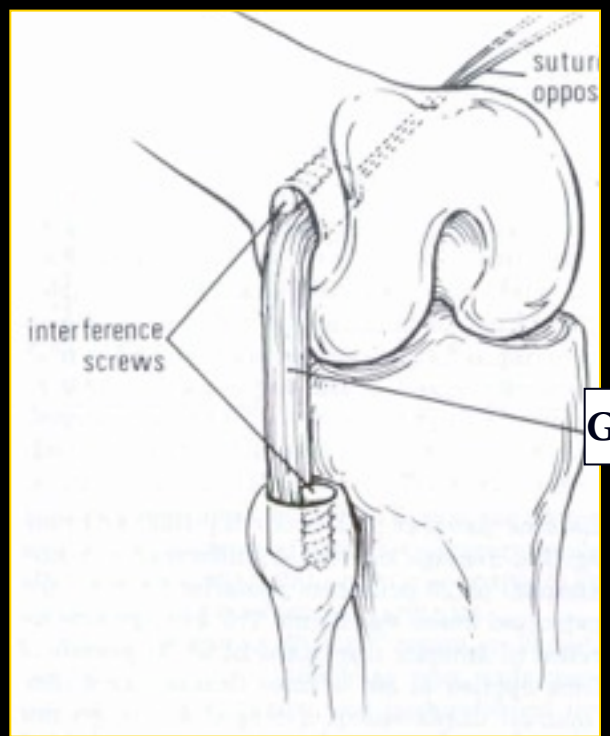
Lateral reconstruction: Patellar tendon

Ipsi / Contra / Allograft
7mm width

Noyes Am J Knee Surg 9,1996*
Tibone Am J Sports Med 1998*

**Allograft*

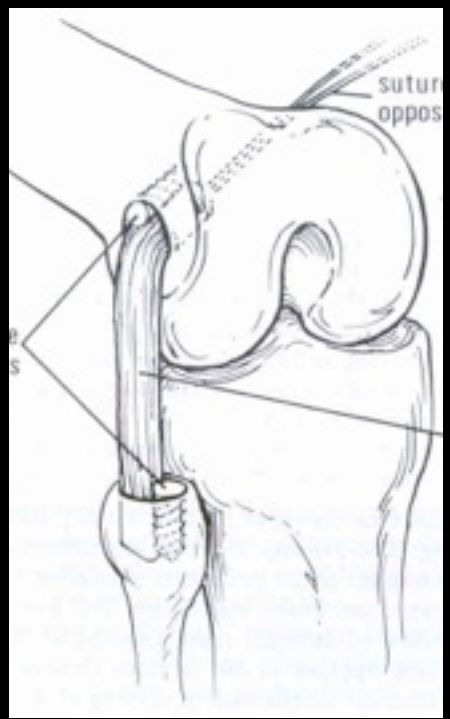


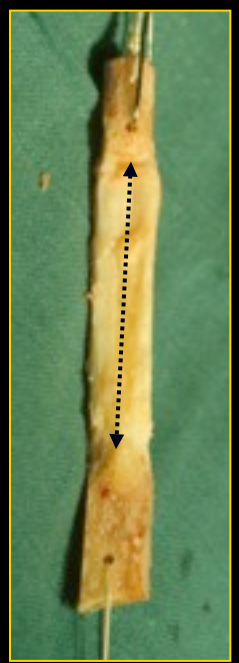


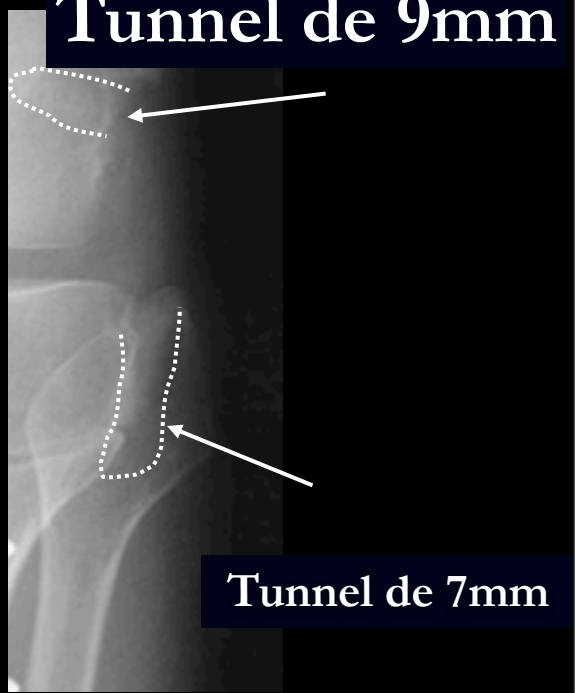
Lateral reconstruction: Patellar Tendon

Checking the lengh of PT

Noyes Am J Knee Surg 9,1996
Tibone Am J Sports Med 1998







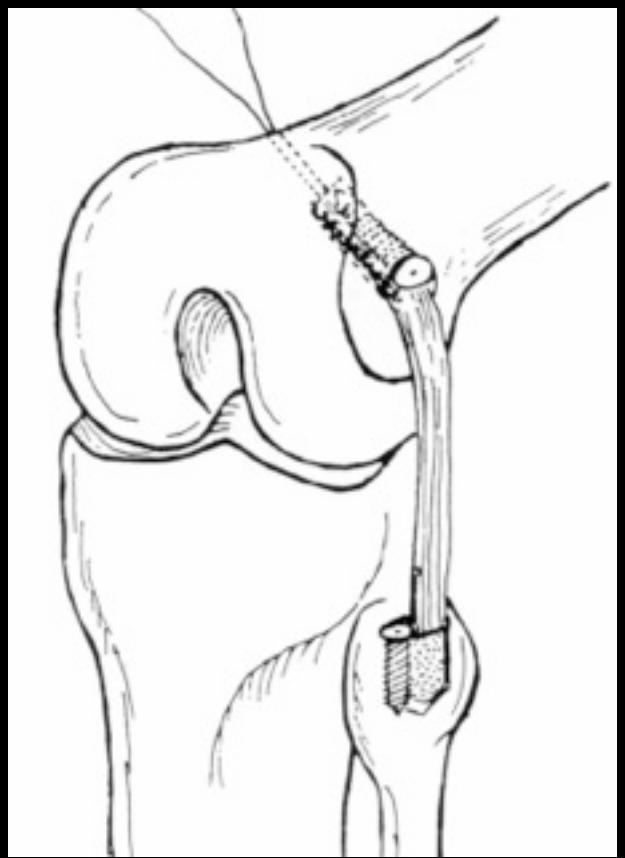
LCL : 59 mm *

PT : 44-47 mm *

* *Amis AJSM 2001*

Lateral reconstruction: Patellar Tendon

Controlateral Patellar Tendon

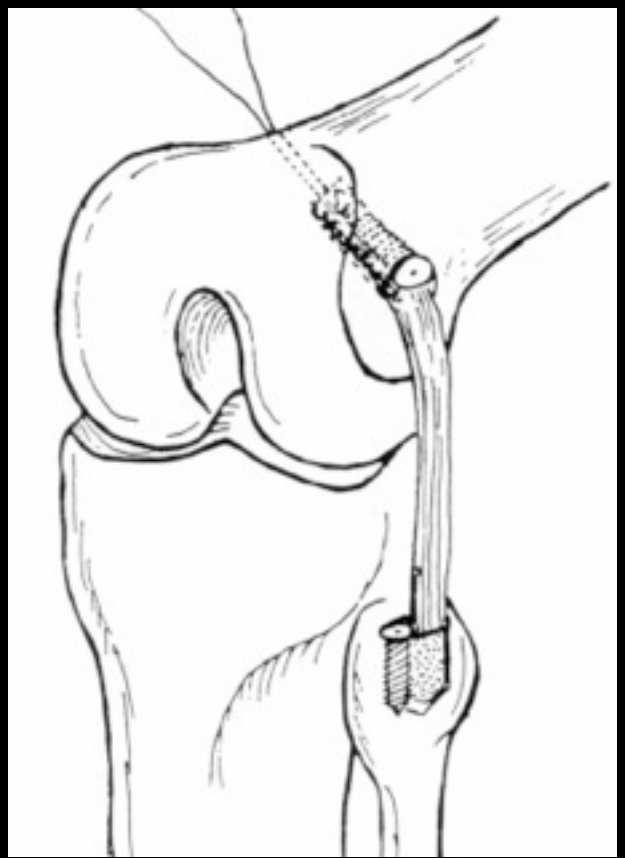


- Good quality graft
- Bone to bone fixation
- Interference screws
- Minimal approach of the fibula
- Efficient for LCL & PLcorner *(Tibone)*

- Impossible if Patella baja
- Surgery on controlateral knee

Lateral reconstruction:

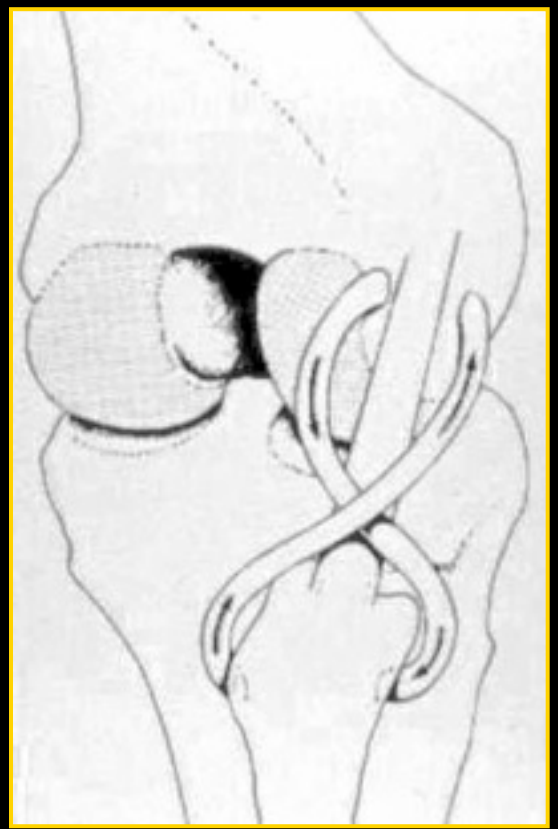
Quadricipital Tendon(Chen Arthroscopy 2001)



- No difficulties with lengh
- Good mechanical properties
- Bone to bone on fibula
- Same knee

Lateral reconstruction:

Semi ten



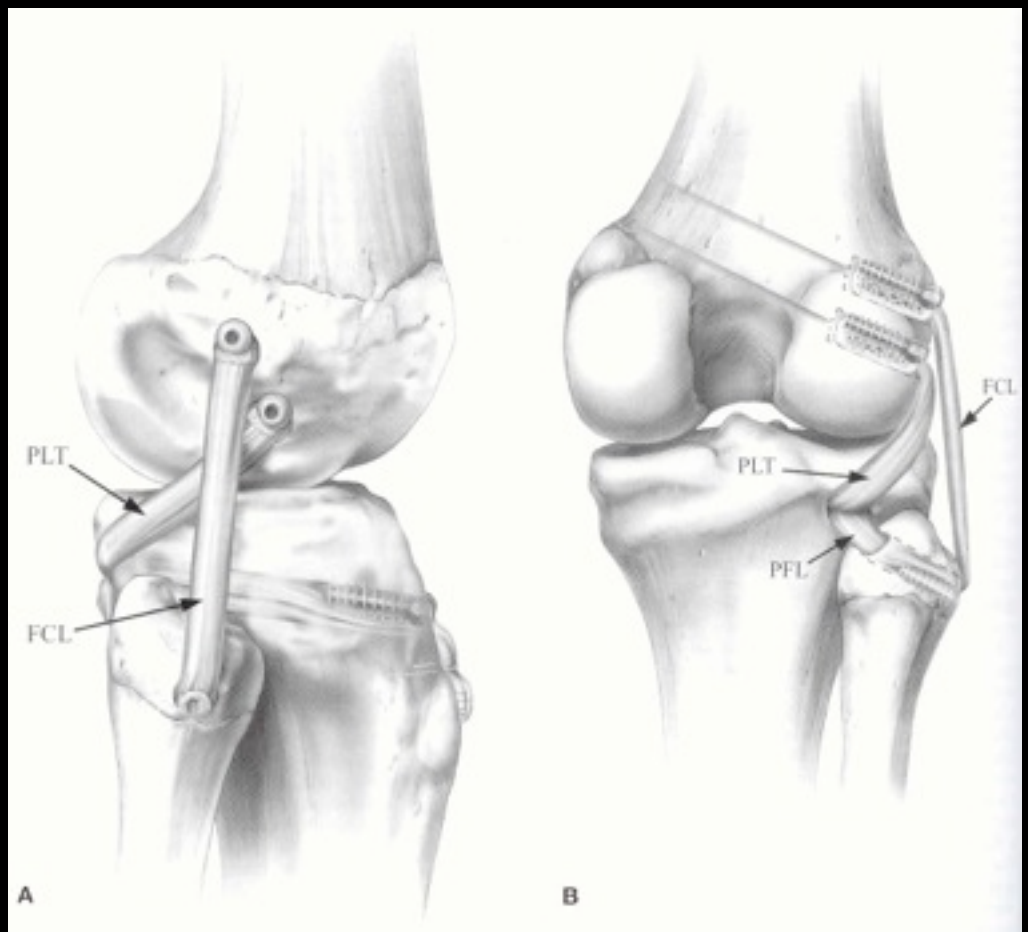
- Same knee
- No difficulties with the lengh

- No bone to bone fixation
- Tunnel on fibular head
- Tensionning more difficult
- Not isometric

Lill: Arthroscopy 2001
Larson: Op Tech in sport med 2001

Lateral reconstruction:

Complex reconstructions LaPrade AJSM 2004



Posterolateral Laxity: Place of HTO

« HTO is the best LCL reconstruction »
A. Trillat

Alignement

Lift-Off

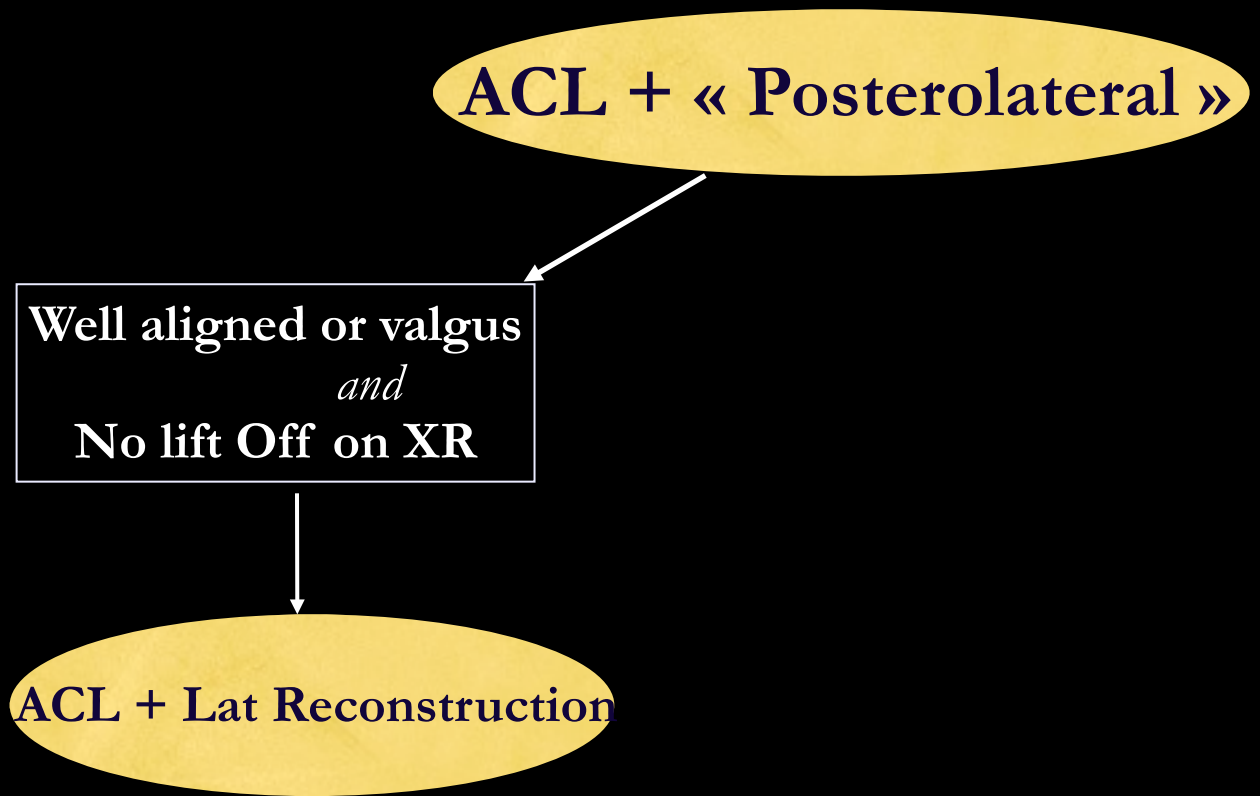
Clinical Exam

LCL ± PLC

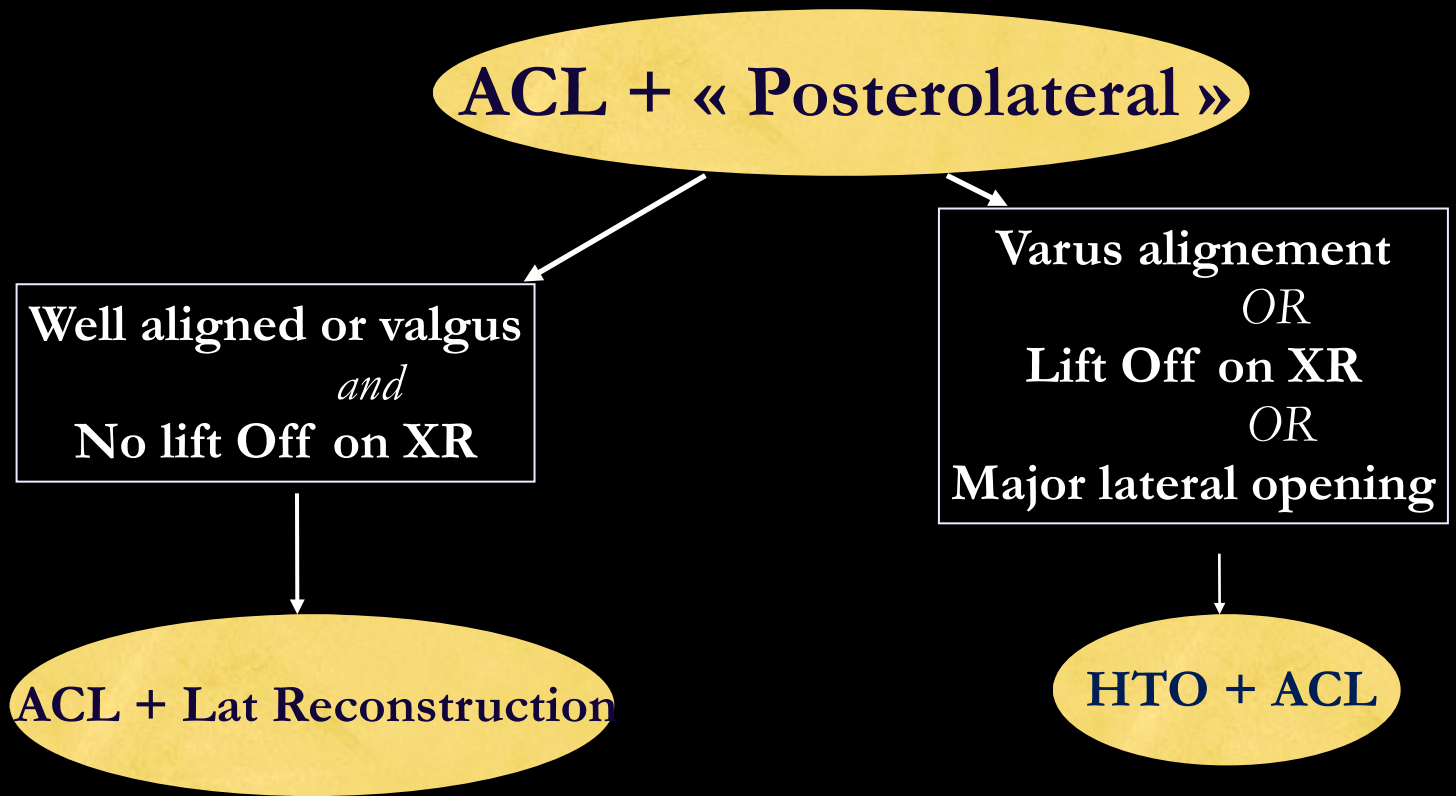
Posterolateral Laxity: Place of HTO

ACL + « Posterolateral »

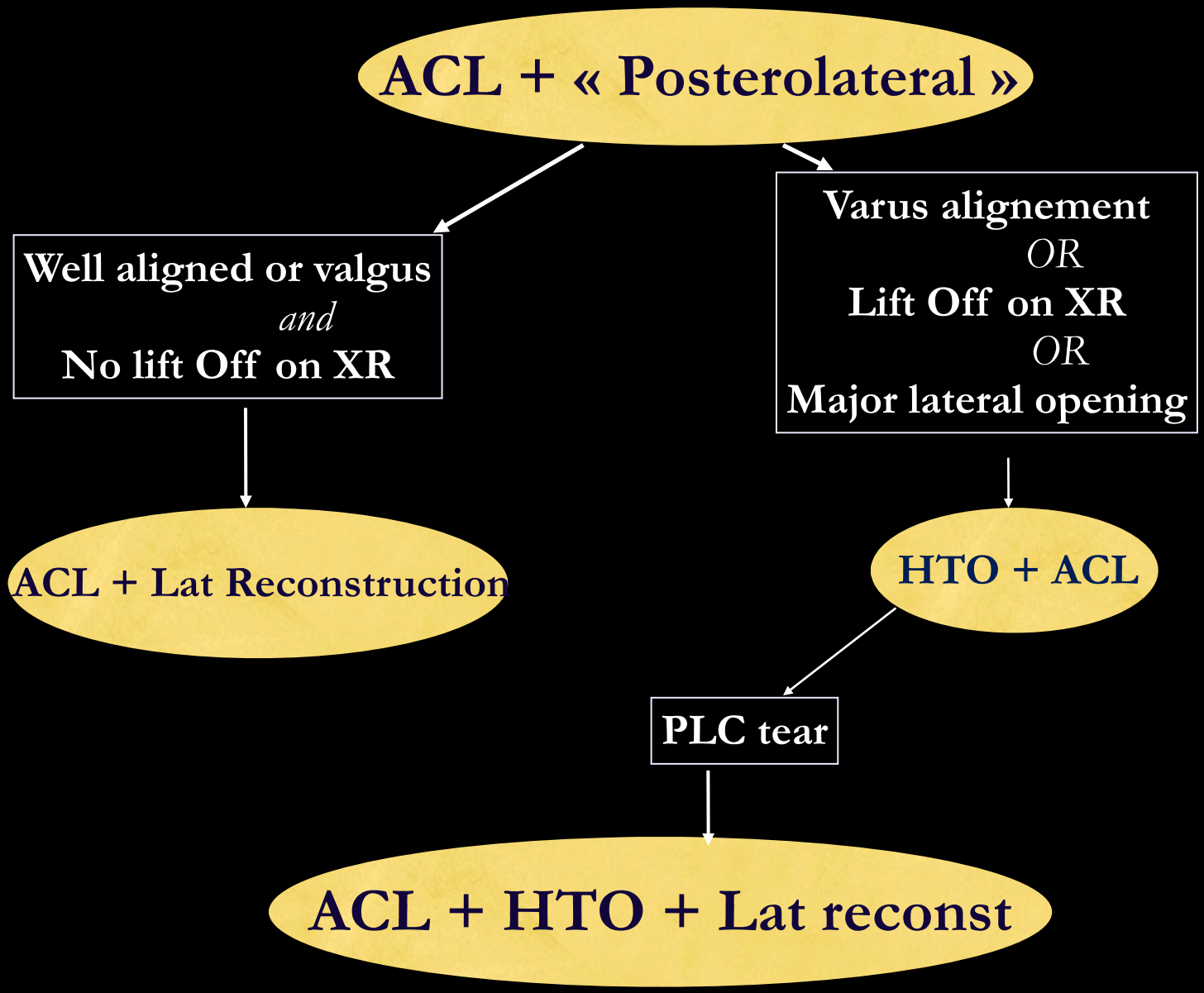
Posterolateral Laxity: Place of HTO



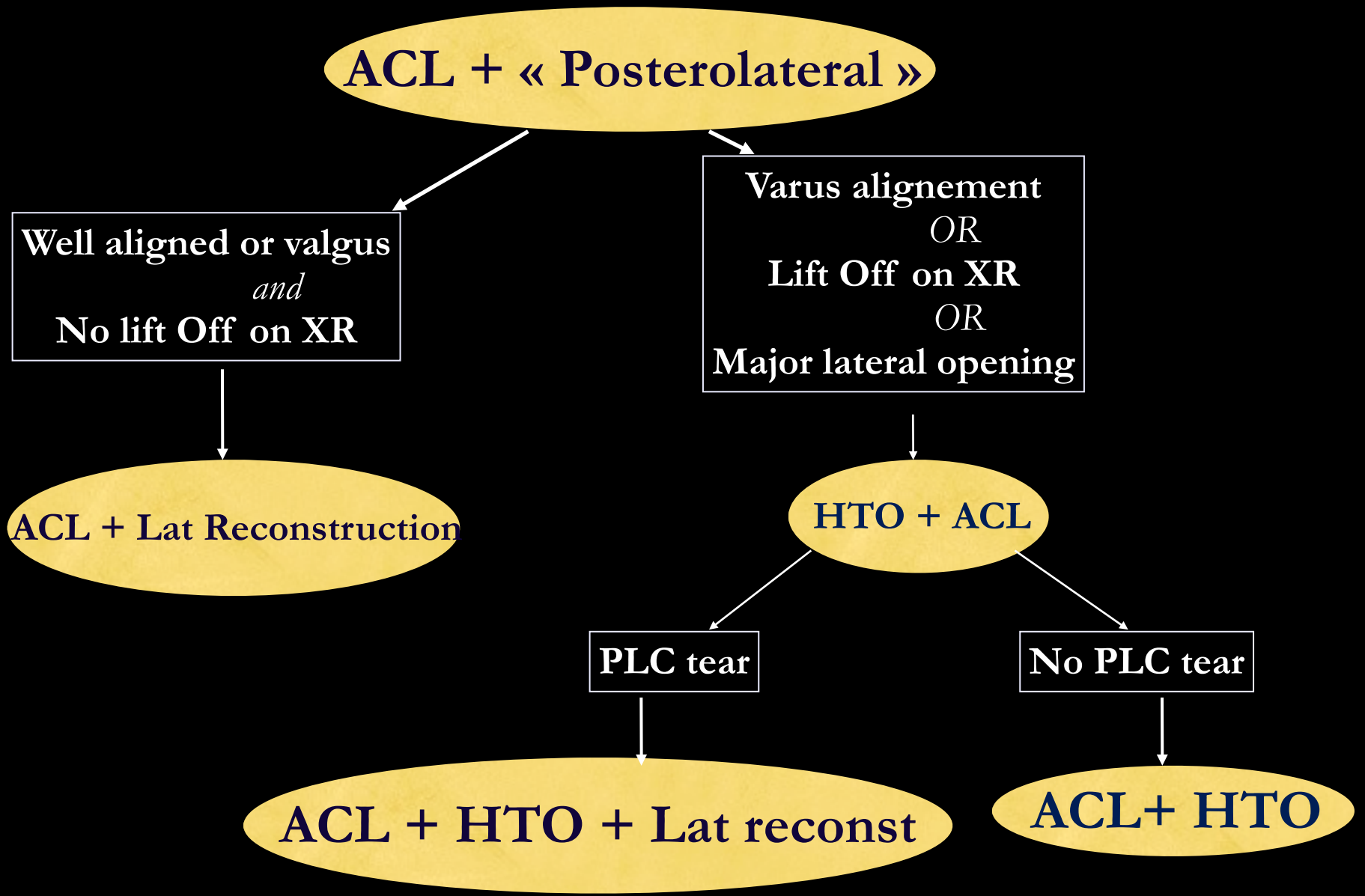
Posterolateral Laxity: Place of HTO



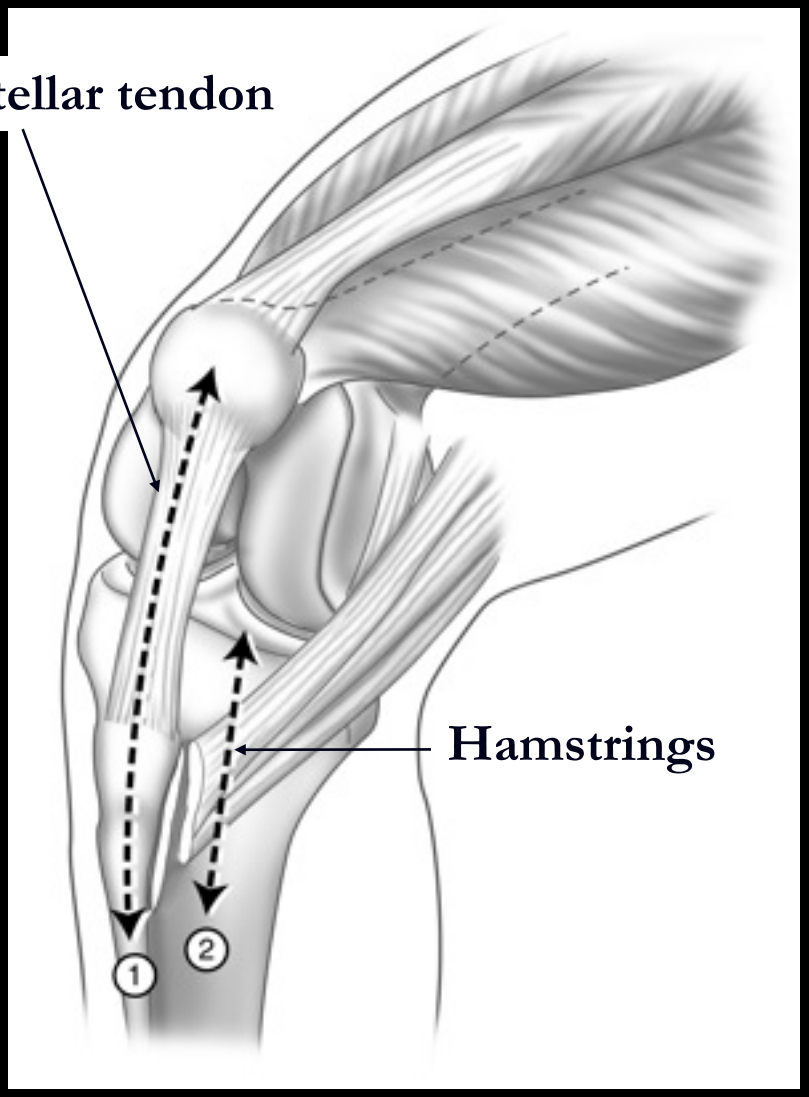
Posterolateral Laxity: Place of HTO

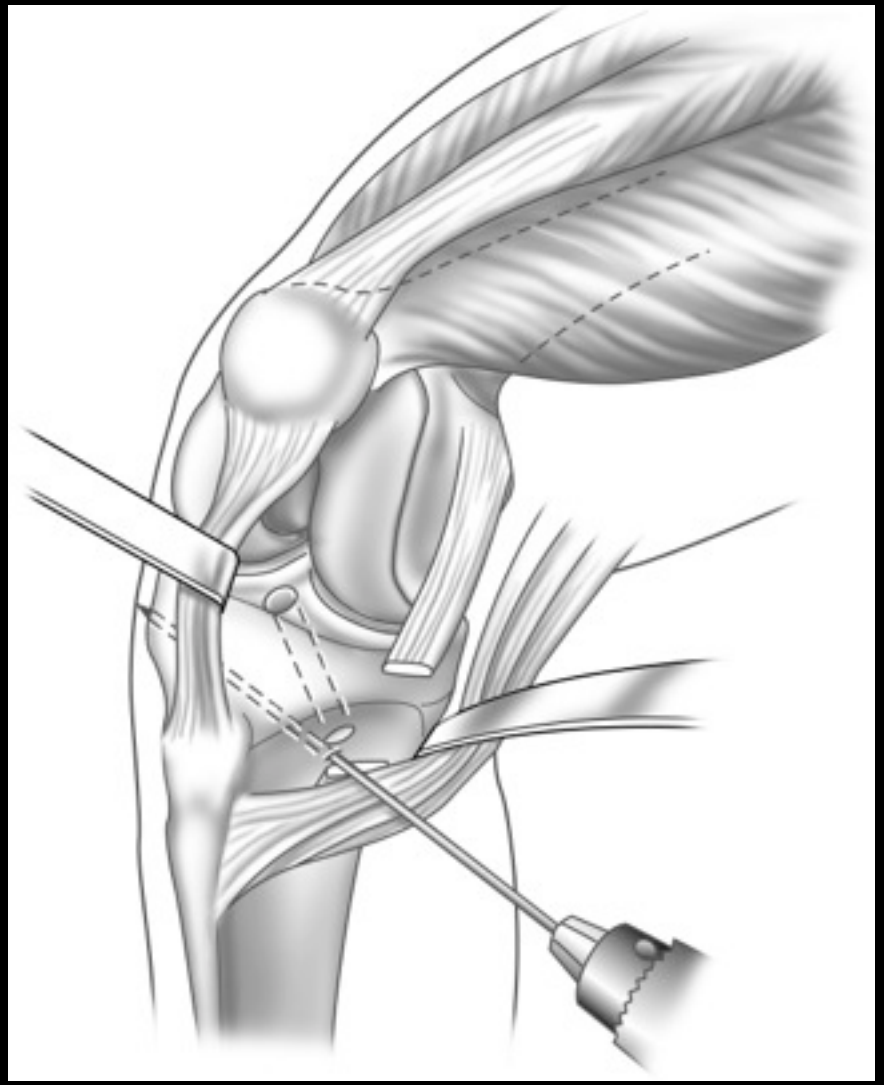


Posterolateral Laxity: Place of HTO

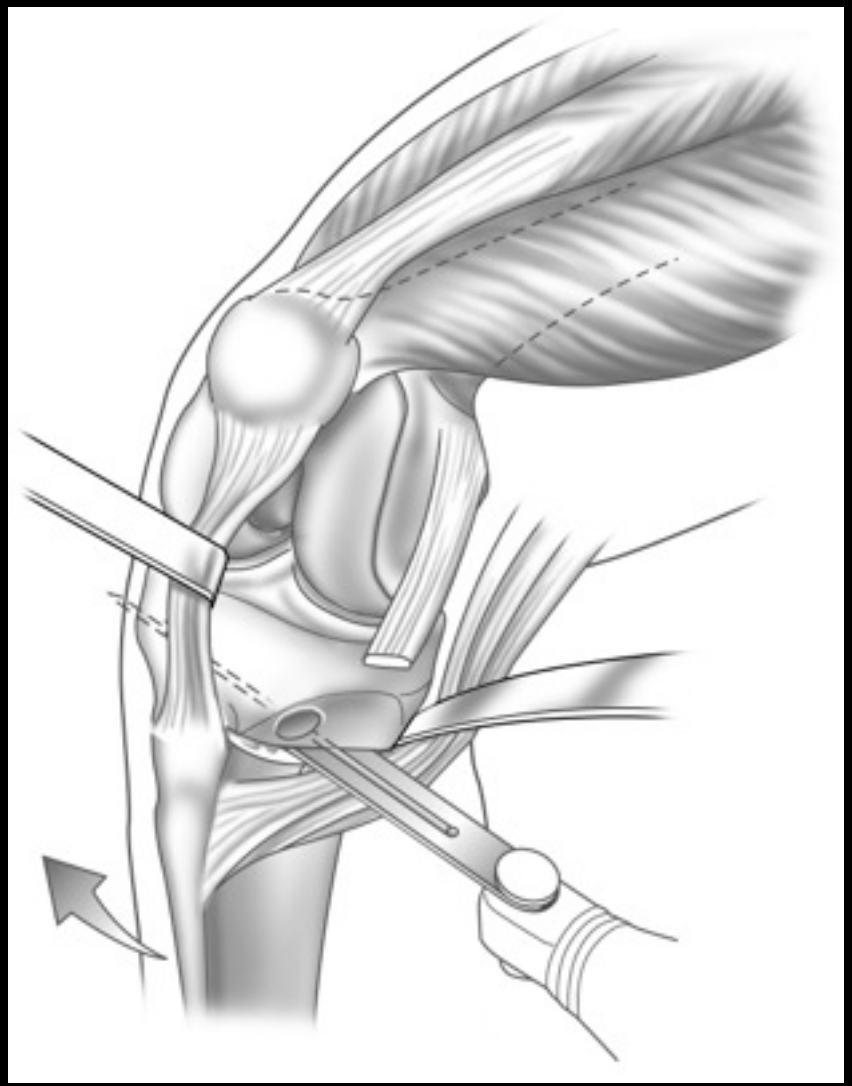


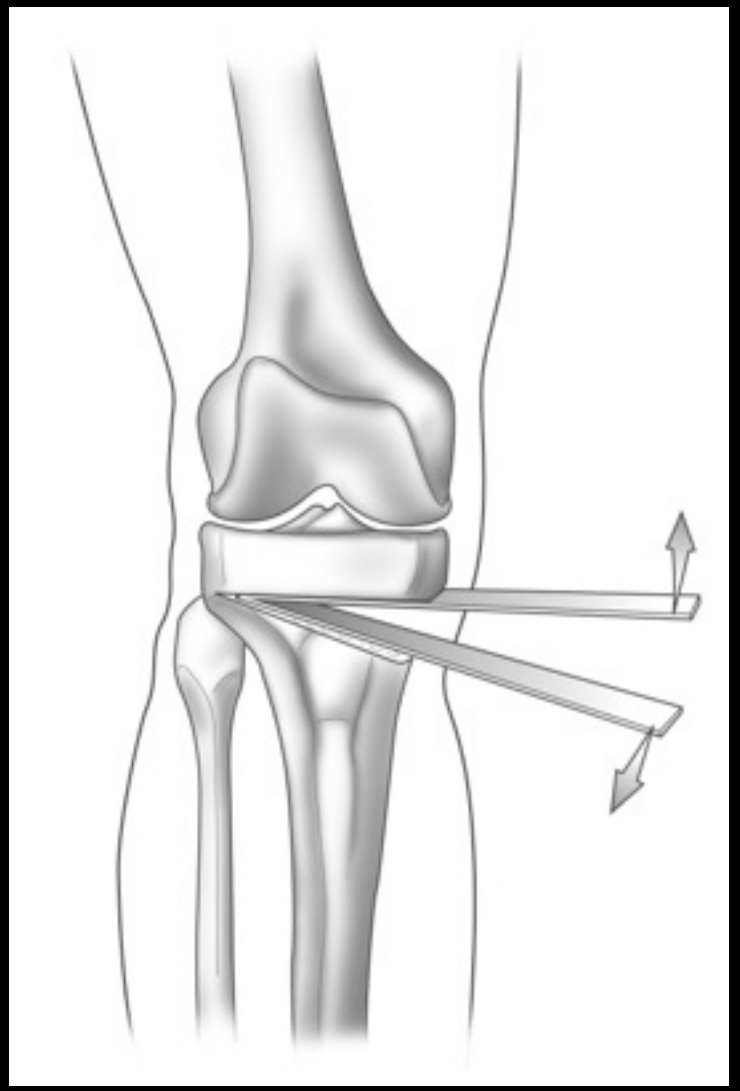
ACL + HTO: Opening wedge





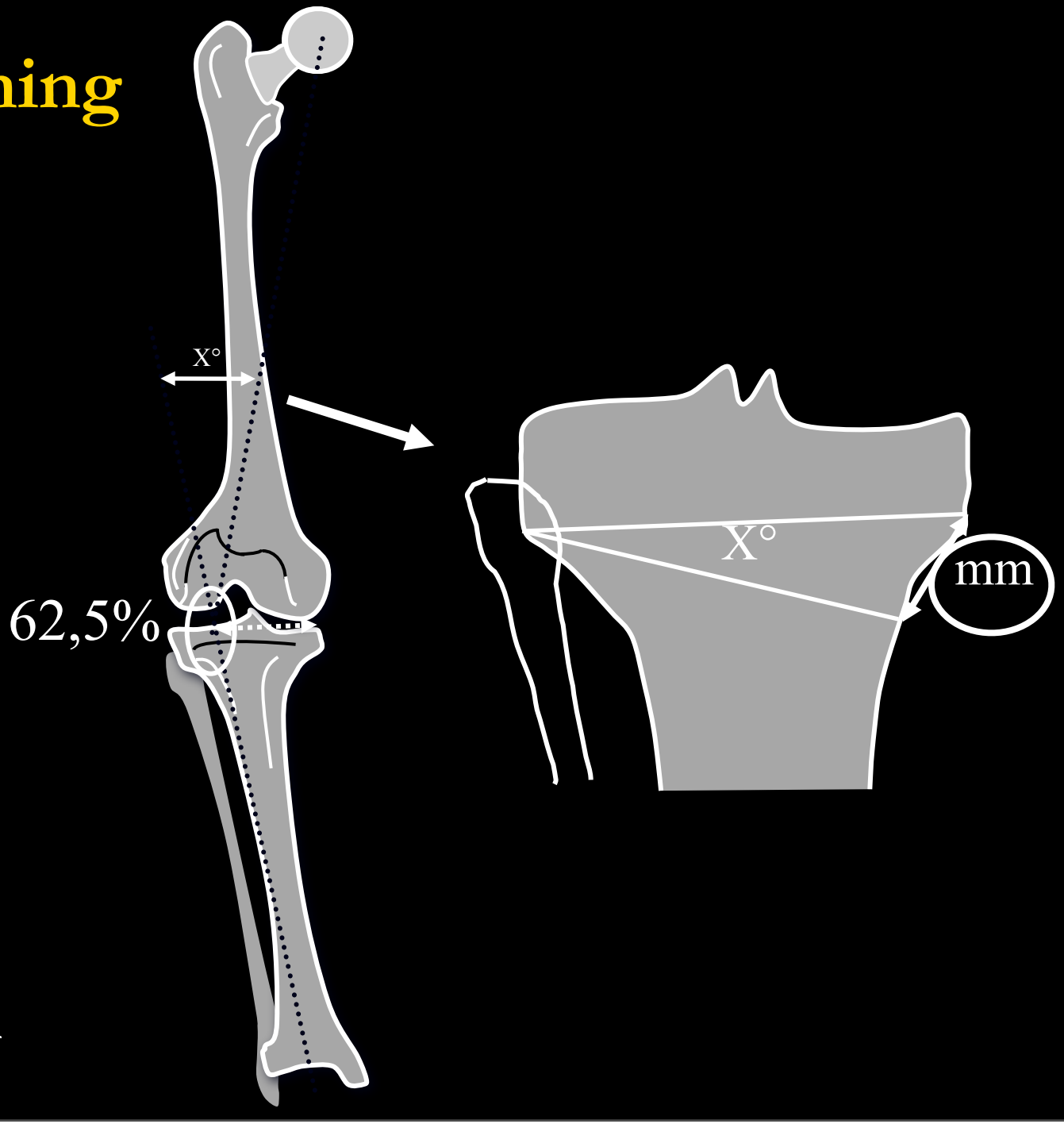
M Bonnin Springer-Verlag 2004





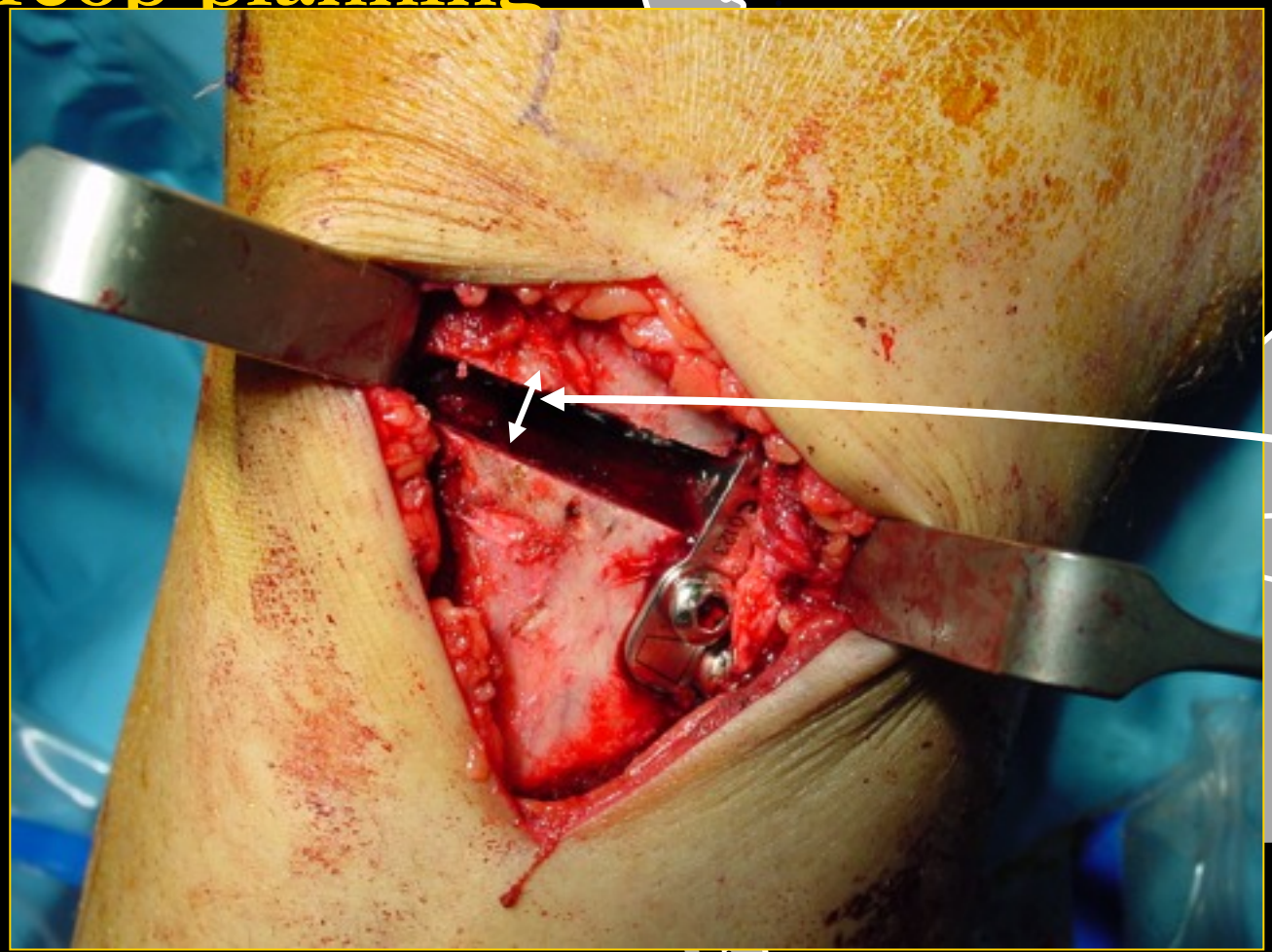
M Bonnin Springer-Verlag 2004

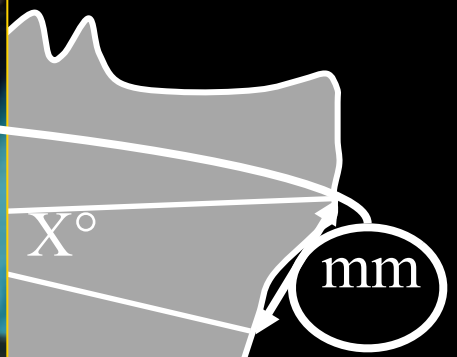
Preop planning



Dugdale CORR
1992

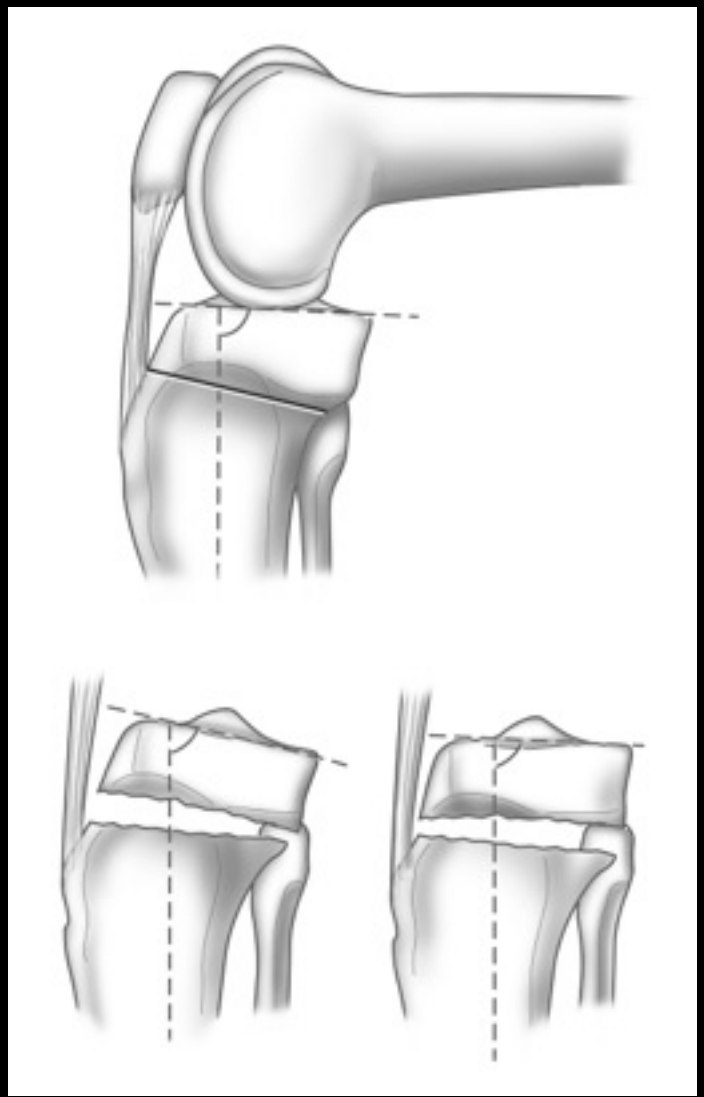
Preop planning

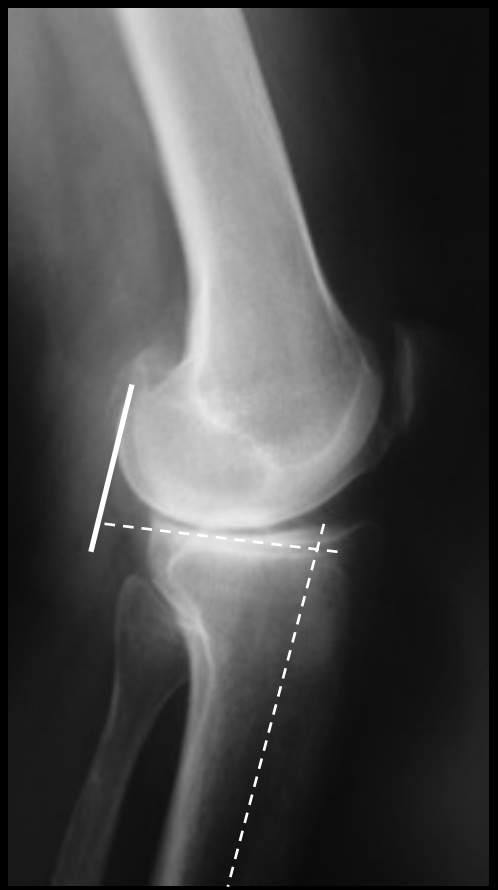


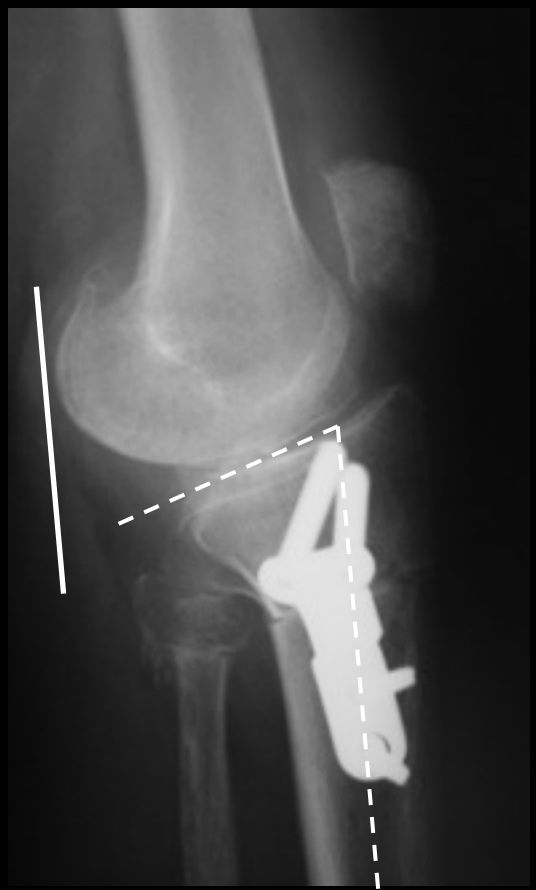


Dugdale CORR
1992

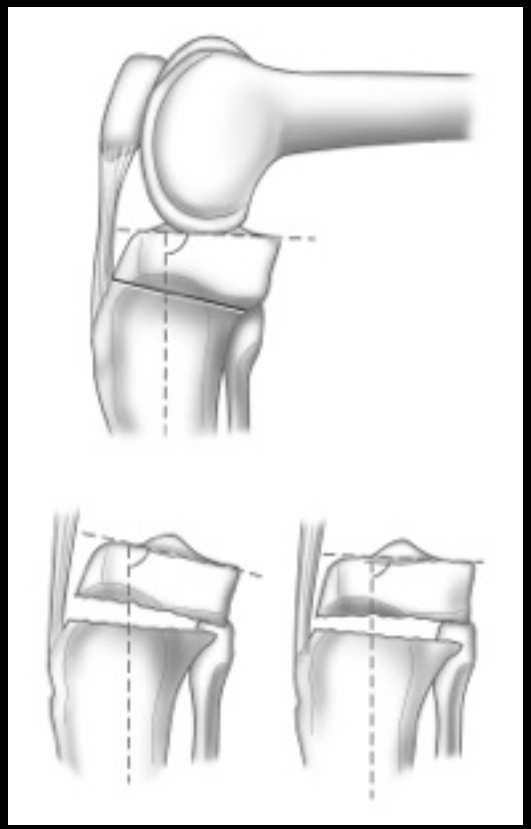
Opening wedge HTO : Tibial slope





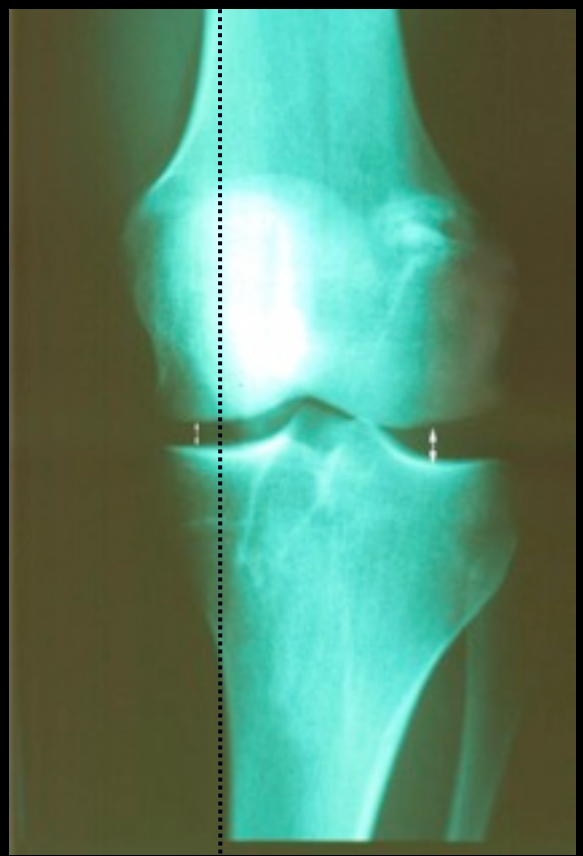


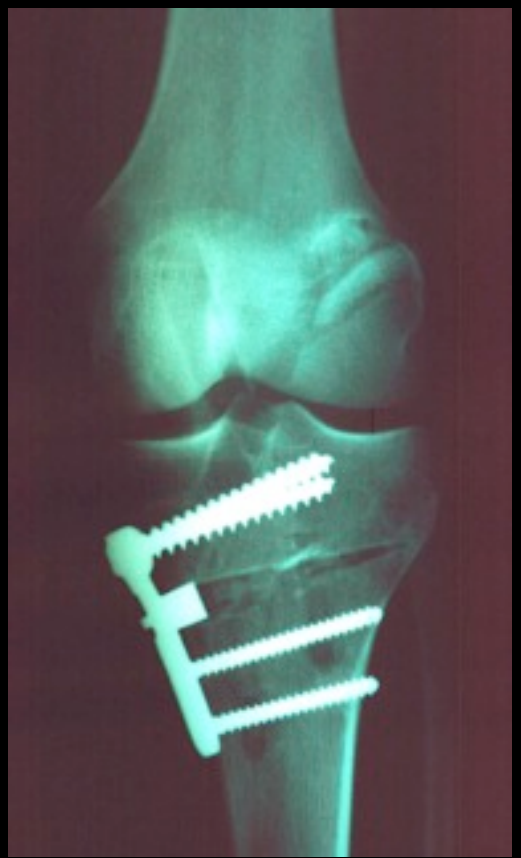
Opening wedge HTO : Tibial slope



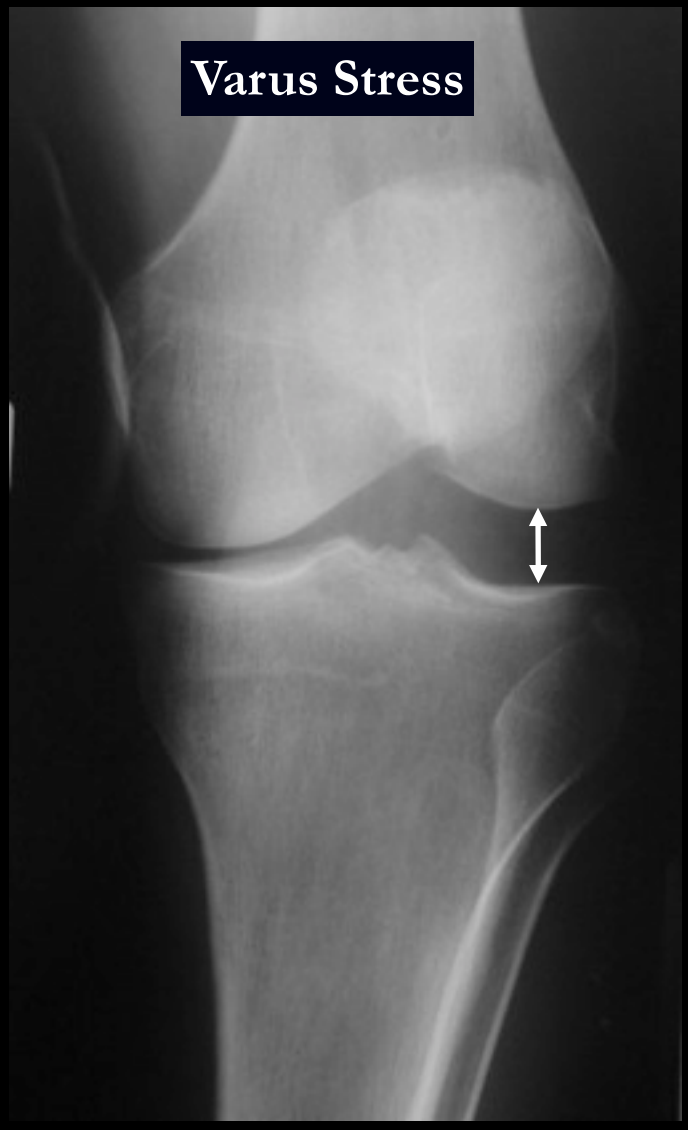
Greffe du LCA + OTV

LCA Varus Alignement Décoaptation PLC OK

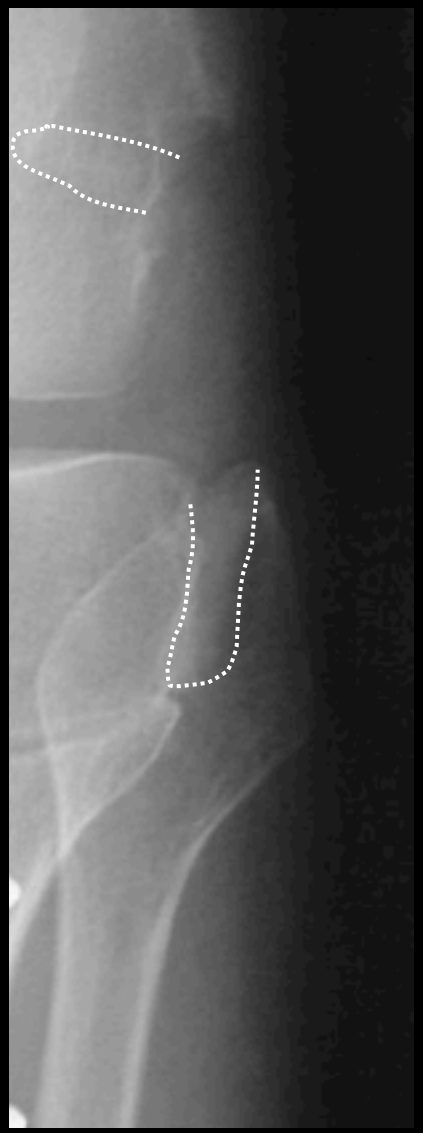




31 ans Motocross Compet: LCL+ PLC



HTO + Lateral reconstruction



Conclusion

Peripheral lesions associated with ACL ruptures:

- Under-diagnosed
- Neglected during surgery
- Explains 15% to 30% of graft failures

- Clinical examination
- MRI analysis
- Surgical treatment if significant laxity
  - Reconstruction in chronic cases
  - Repair reconstruction in Acute cases