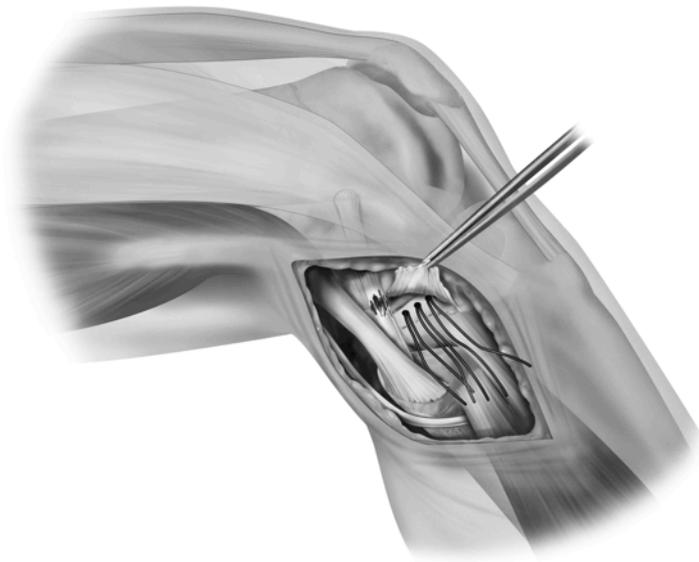
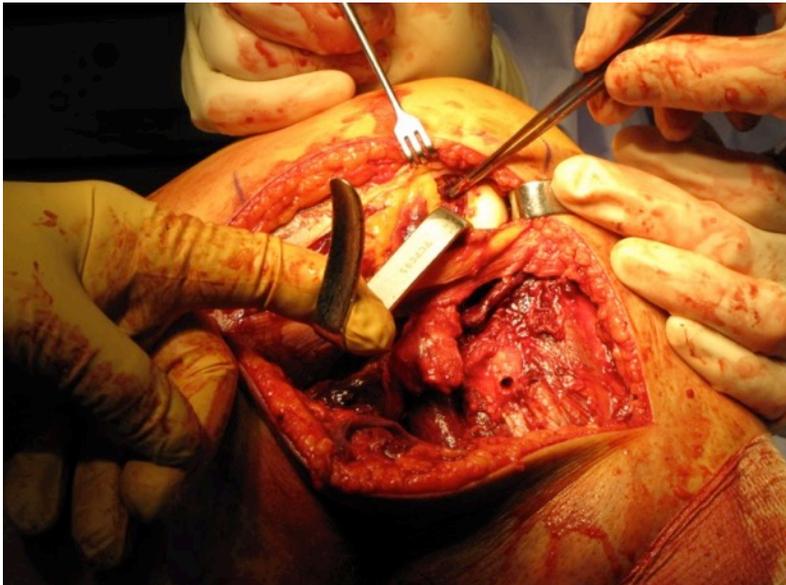


Multiligament injuries

Acute lateral repair

- **Martin Lind**
- **Aarhus University Hospital,**
- **Denmark**



Overview

- **Principles of approach to lateral injuries**
- **Absolute indications for acute lateral repairs**
 - Fibular head fractures
 - LCL/biceps tendon sleeve avulsion
 - Iliotibial tract avulsion
 - Popliteus tendon avulsion
- **Augmented lateral repair/reconstruction**
- **Courtesy of Robert LaPrade for some of the illustrations**

Treatment timing of multiligament injuries

- **Options**
- **Acute collateral and cruciate surgery**
- **Acute collateral and delayed cruciate surgery**
- **Delayed both collateral and cruciate reconstructions**

Timing of acute surgery

- Initial 2 weeks
- Prior to tissue retraction / necrosis
- Restore ROM if possible

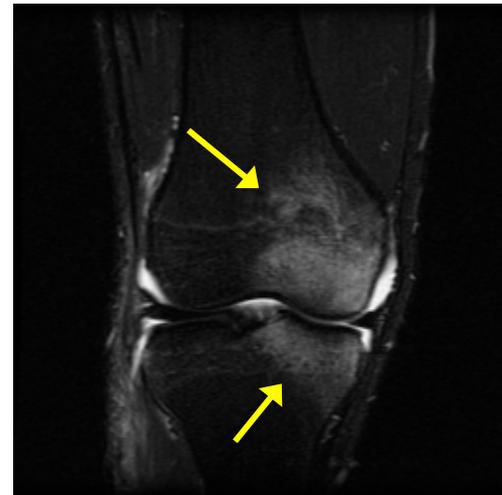
Diagnosis

Use acute MRI

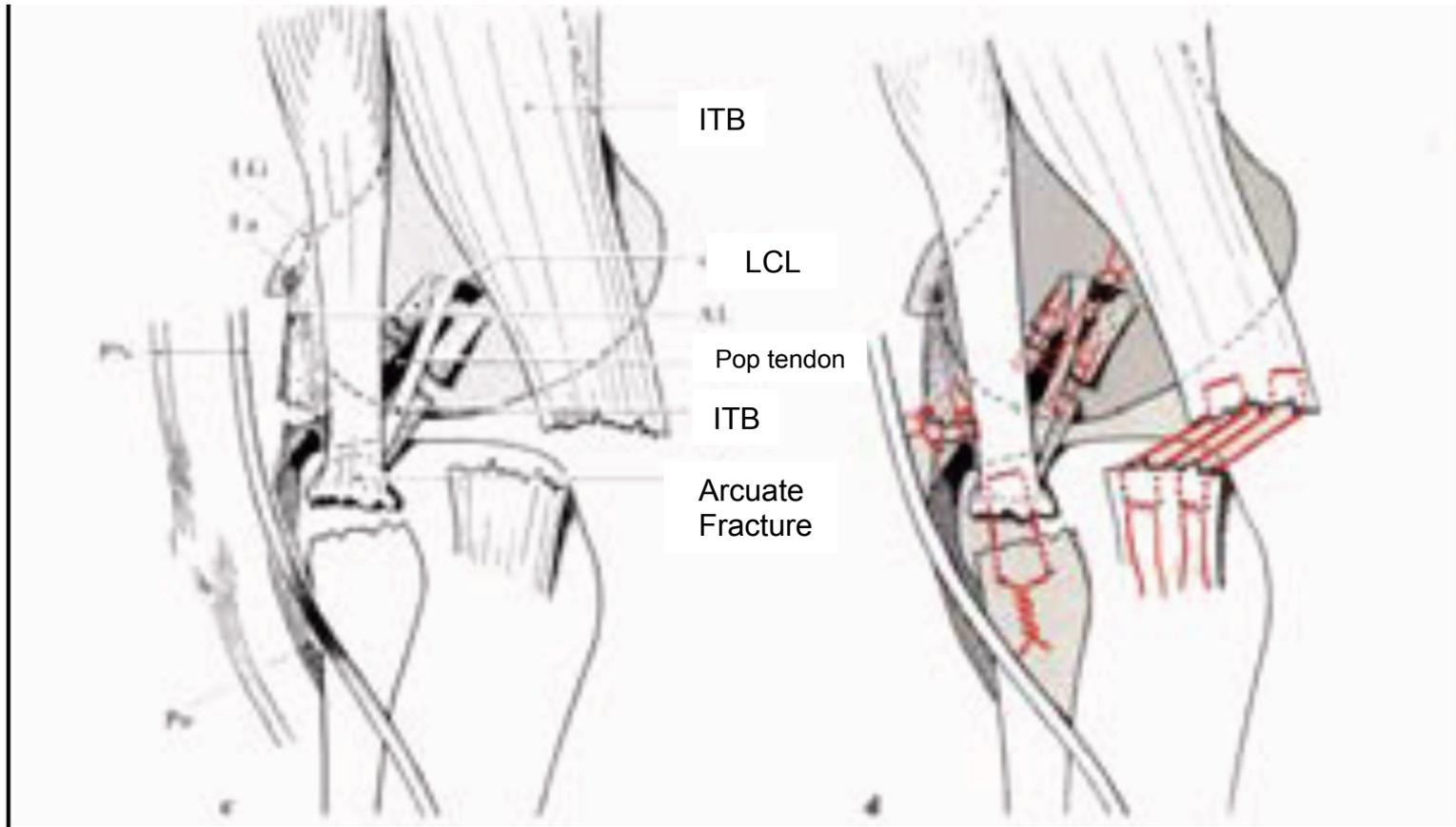
- ACL tear, ↑ lateral compartment subluxation
- FCL torn / PLT torn
- Bone bruises MFC / MTP

Location of Bone Bruises and Other Osseous Injuries Associated With Acute Grade III Isolated and Combined Posterolateral Knee Injuries

Andrew G. Geeslin,* BS, and Robert F. LaPrade,** MD, PhD
Investigation performed at the University of Minnesota, Department of Orthopaedic Surgery, Minneapolis, Minnesota

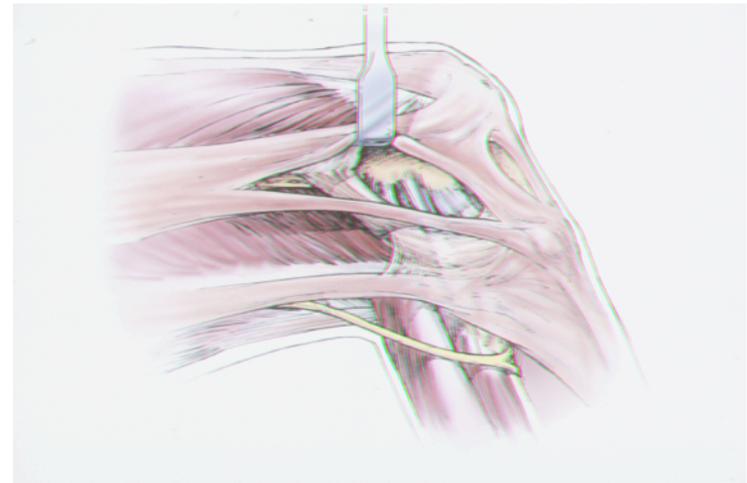


Structures for acute repair



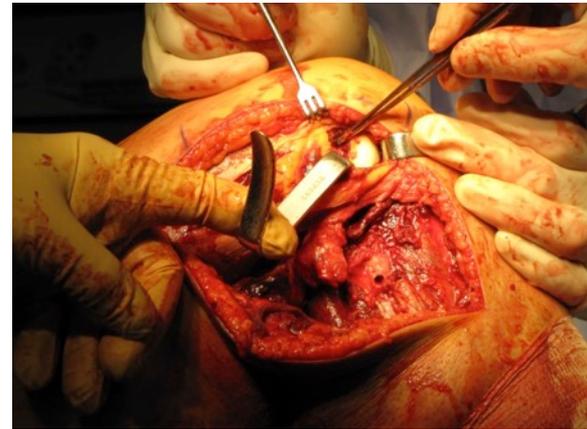
Surgical approach

- Location of incision
- Fascial planes
- Identify injuries first



Identify all posterolateral corner lesions

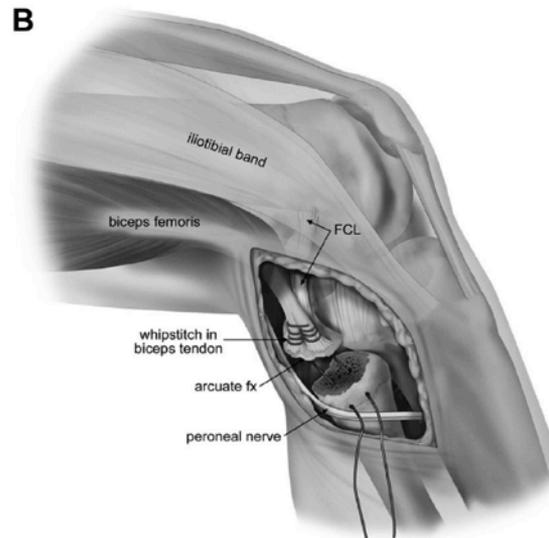
- **Fibular collateral ligament (FCL)**
- **Popliteus tendon**
- **Popliteofibular ligament**
- **Biceps tendon**
- **Lateral capsule**



Fibular head fractures (Arcuate fracture)

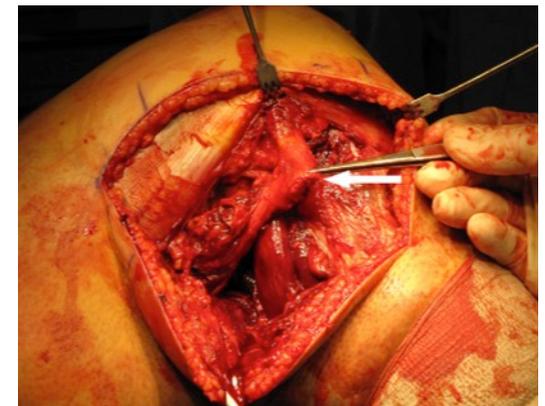
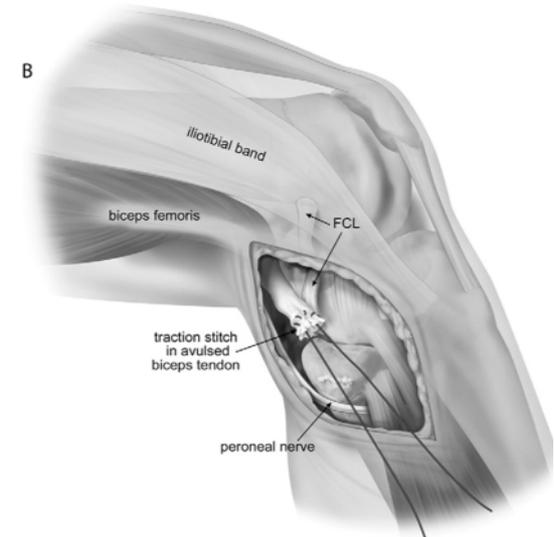
Involves:

LCL, popliteofibular lig and biceps tendon



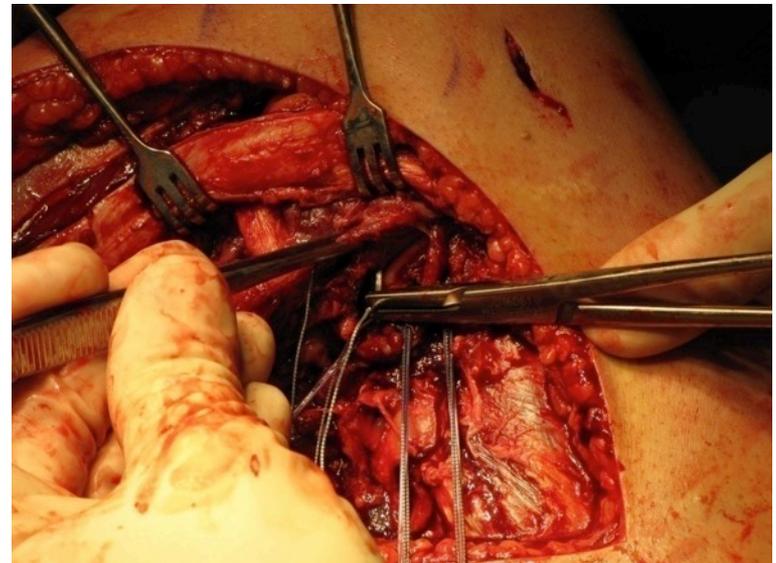
Biceps femoris tendon and LCL sleeve avulsion

- Traction stitch
- Must release proximally
- Reduce to fibula in full extension
- Drillholes in fibular head
- Use suture botton



Repair Lateral Capsule

- Anchors at joint line
- Suture into undersurface of lateral meniscus

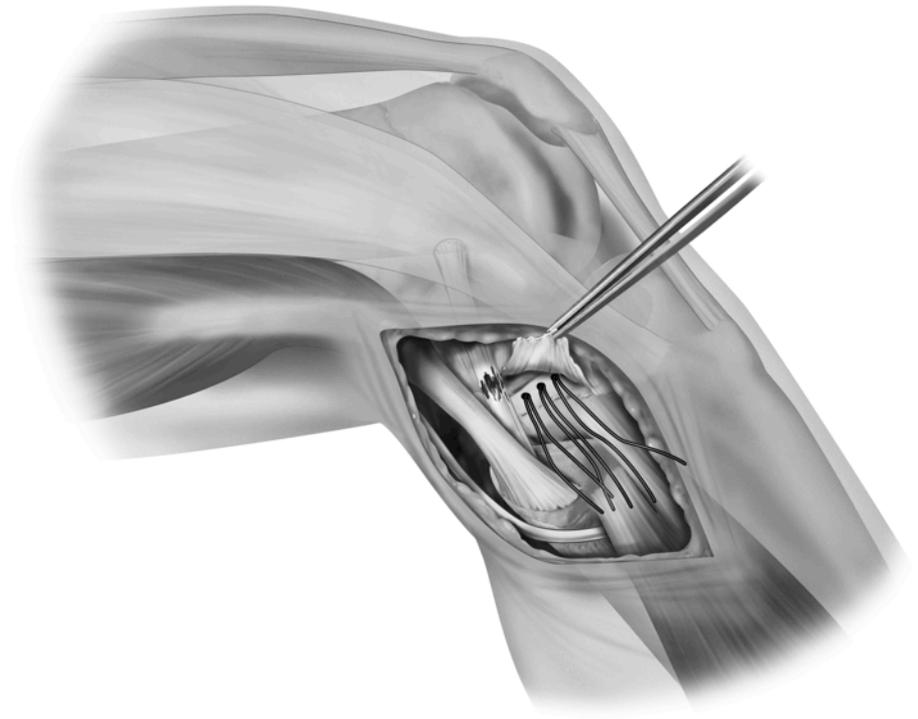


Iliotibial tract repair

Anchor fixation

For tibial
Re-attachement

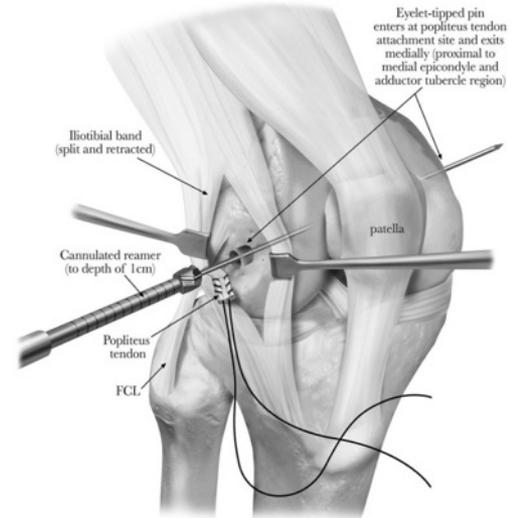
Tag Sutures



Avulsions of femur

(Jakob, 1982; LaPrade, 1997)

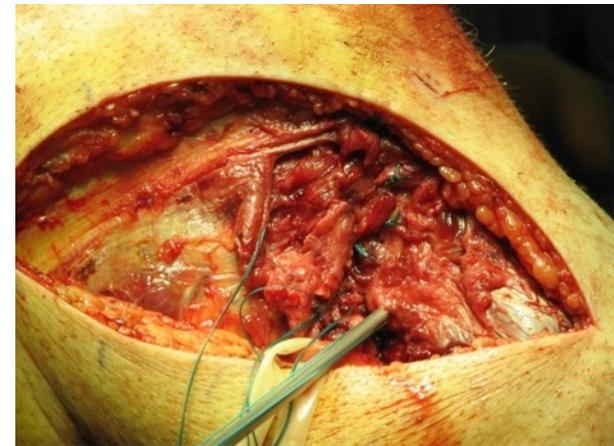
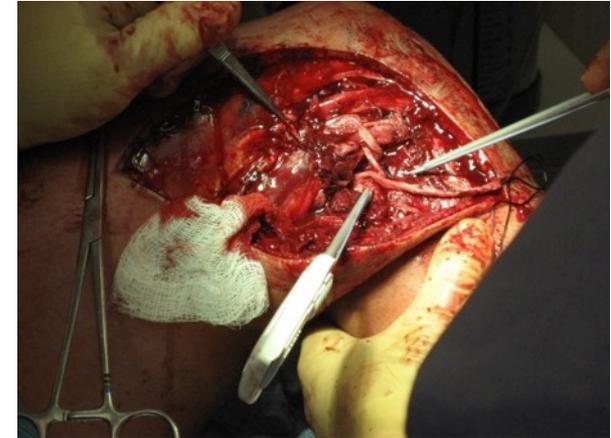
- Popliteus avulsion - recess procedure
- FCL avulsion - recess procedure
 - Transfemoral eyelet pin
 - Ream 1 cm tunnel
 - Pull sutures across femur, tie over medial button



Avulsion off fibular head / styloid

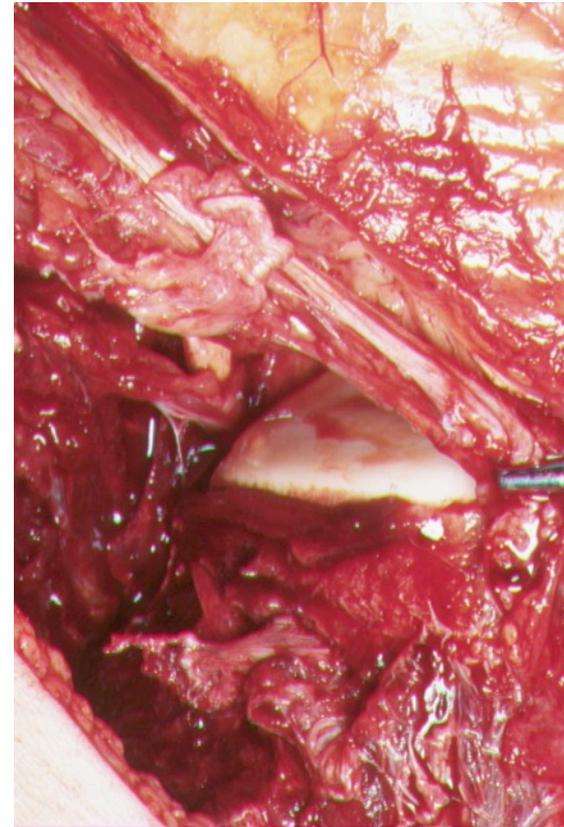
- Popliteofibular ligament
- Biceps femoris
- FCL
- suture anchor fixation
- Allow for secure repair / early ROM

*Secure in full extension



Midsubstance tears of FCL or popliteus tendon

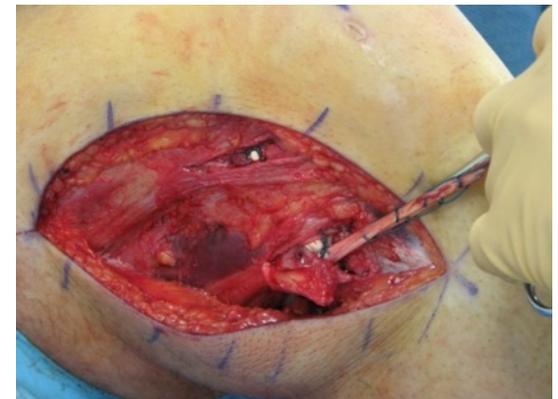
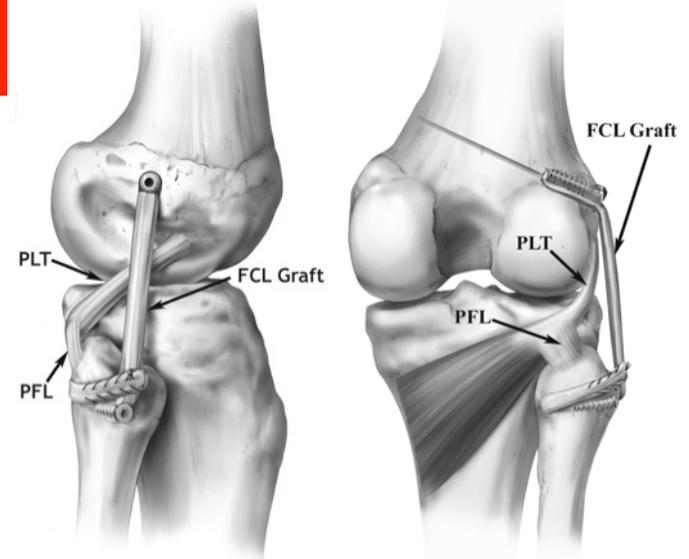
- Consider augmentation (biceps femoris, ITB, hamstrings)
- Anatomic reconstructions



FCL reconstruction

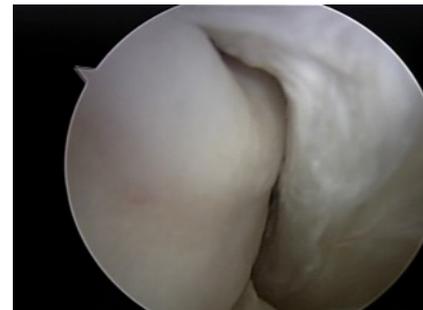
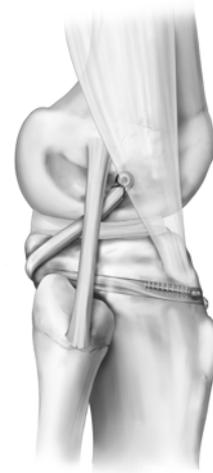
(Coobs, 2007)

- Anatomic FCLR
- Biomechanically validated
- Restores native tendon length
- Interference screw fixation

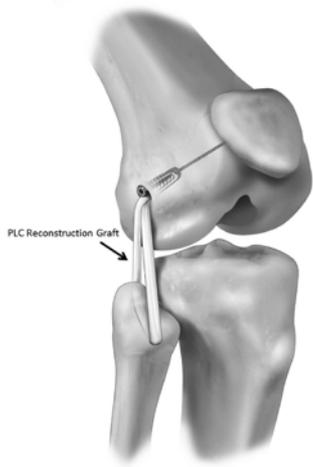


Popliteus tendon reconstructions

- **For nonrepairable PLT tear**
- **Restores ER**
- **Usually concurrent with PCLR**



Combined lateral reconstructions



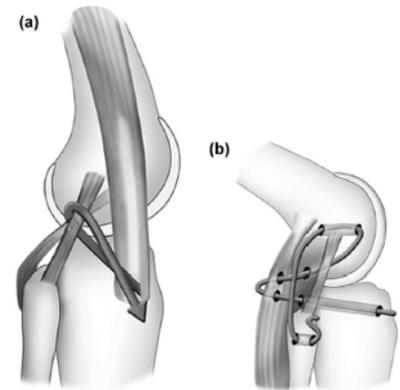
Larson sling



LaPrade technique



Danish technique



Bousquet

Algorithm

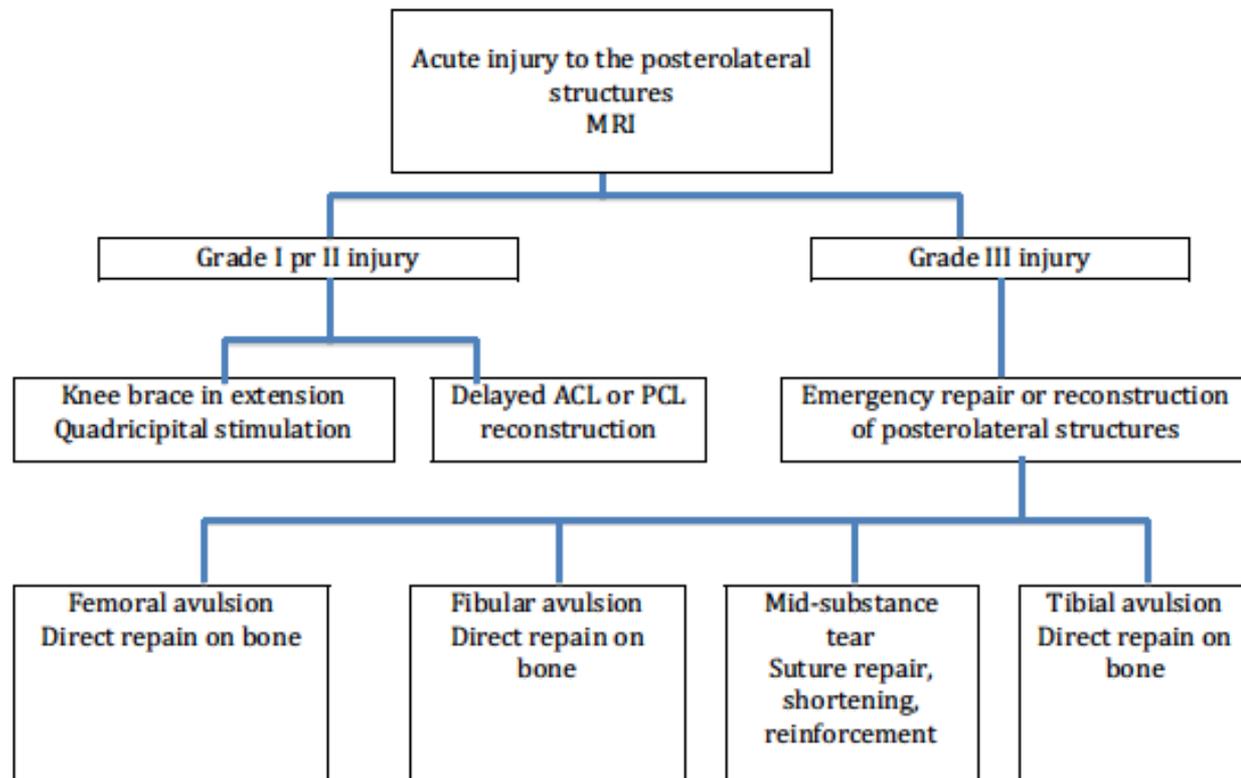


Fig. 19. Management of acute injury to the posterolateral structures.

Outcome of acute repair of posterolateral corner injury

- **Stannard (2005)**
- **35 repairs**
- **22 reconstructions**

The Posterolateral Corner of the Knee : Repair Versus Reconstruction
James P. Stannard, Stephen L. Brown, Rory C. Farris, Gerald McGwin, Jr and David A. Volgas
Am J Sports Med 2005 33: 881

37 % failures
9 % failures



- **Levy (2010)**
- **Multi-ligament patients**
- **10 repairs**
- **18 reconstructions**

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

40 % failures
6 % failures



Take home messages

- **Acute repair for tendon avulsions and arcuate fibular fractures**
- **Augment or reconstruct midsubstance FCL lesion**
- **Litterature advocate against repair only for posterolateral lesions in multiligament settings**