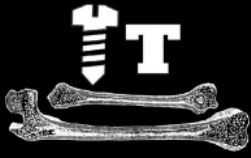


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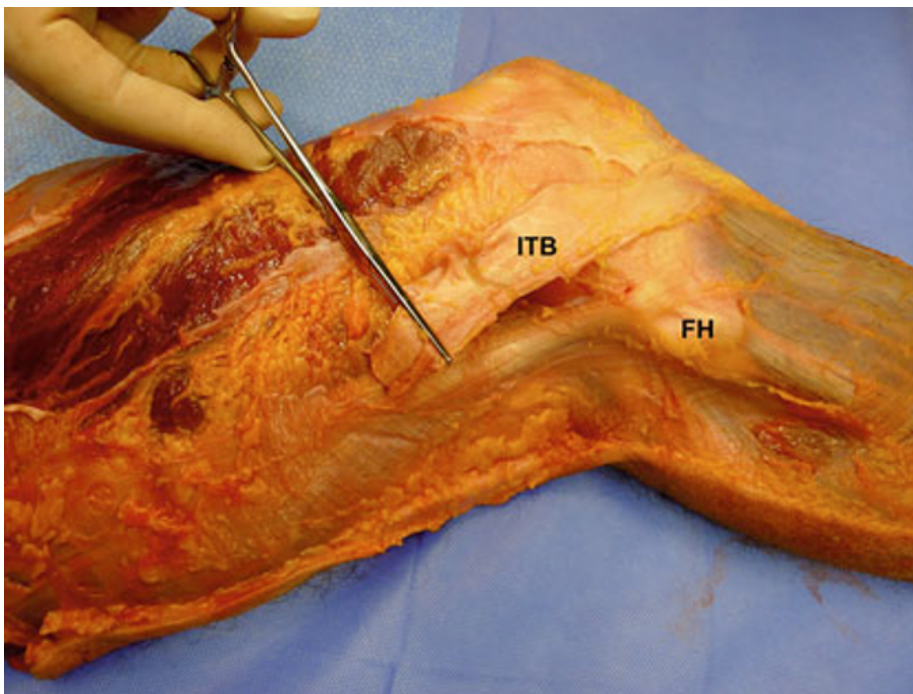
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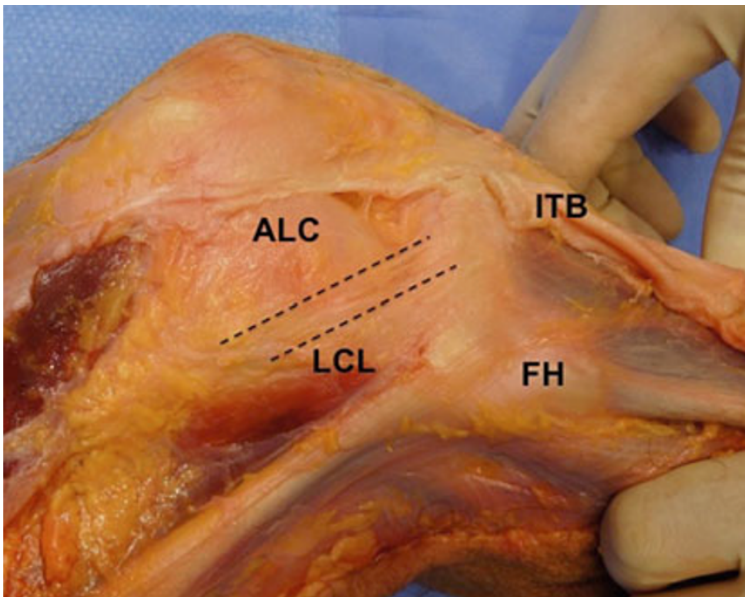
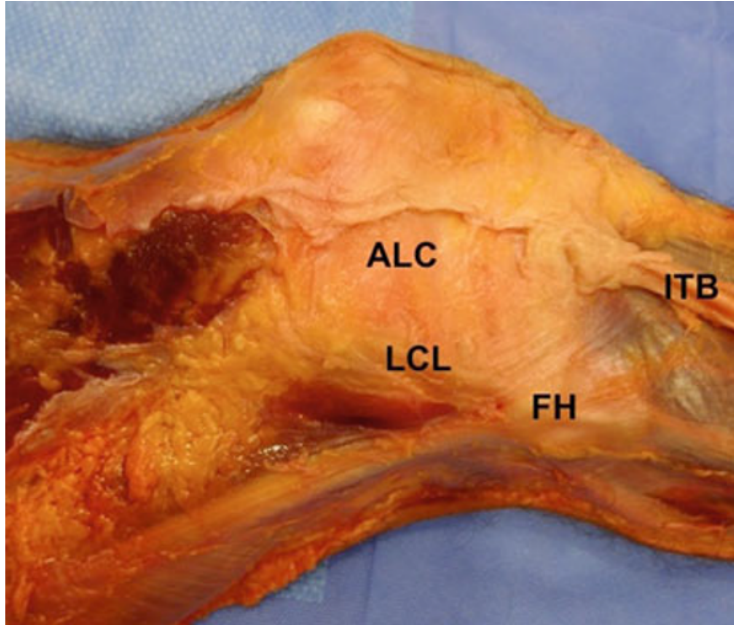


# Notes on Anterolateral Ligament Reconstruction w/ Dr. Dana Piasecki

## Lateral Knee Anatomy

- Combination of intra and extra articular structures- ACL, lateral meniscus, ITB, capsule and ALL working in unison
- Joint capsule
  - Attachments between capsule osseous layer of IT band (attaching proximally from posterior Kaplan fibers on distal femur to distally on posterior aspect of Gerdy's tubercle) and ACL create inverted horseshoe sling around posterior femoral condyle- prevents anterolateral tibial subluxation
- Anterolateral capsule structure anatomy
  - No consensus in terms of ALC structures





#### Function of Anterolateral capsule structures

- Similar to menisci- secondary stabilizer of anterior translation and rotation of lateral knee compartment
- Combine injury to ACL + anterolateral structures- causes inc anterior translation in flexion + extension, + inc internal rotation at 90 flexion
- Published biomechanical studies- controversial- some state structures are important stabilizer of IR at higher flexion angles

#### Anterolateral ligament

- ALL Soft tissue attachments- controversial in literature
- Some studies describe

- Attachment between ligament and lateral meniscus
- Some state structure does not insert into rim of lateral meniscus
- Majority of fibers came close to meniscal tissue, but continued w/o interruption toward the tibia plateau
- 2013 study- ALL anatomy- a distinct structure in layer II
- ALL function-stabilizer of IR at flexion >35 degrees

#### Physical Exam:

- Lachman- most sensitive
  - Takes into account AP laxity of ACL but not residual rotary laxity
- Pivot and shift- most specific
  - In ACL deficient knee-Valgus + IR + slight flexion causes anterior translation of the lateral tibia plateau (lateral femoral condyle rests on posterior slope of plateau)
  - At 30-40 flexion- tension produced by IT band forces anteriorly subluxed lateral tibia plateau to reduce posteriorly> leading to a clunk as femoral condyle passes over apex of convex shaped lateral tibia plateau



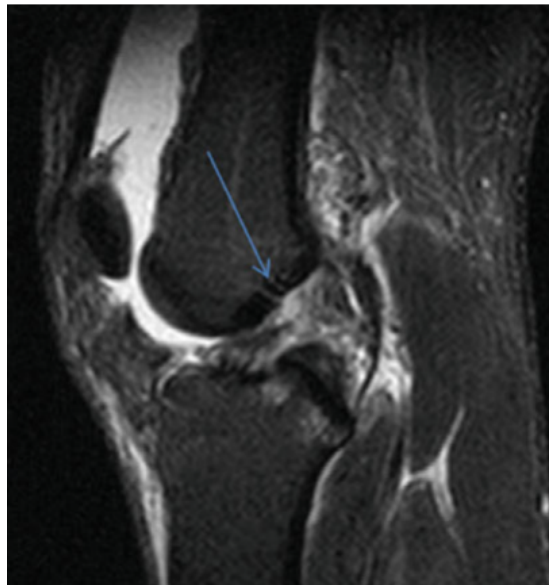
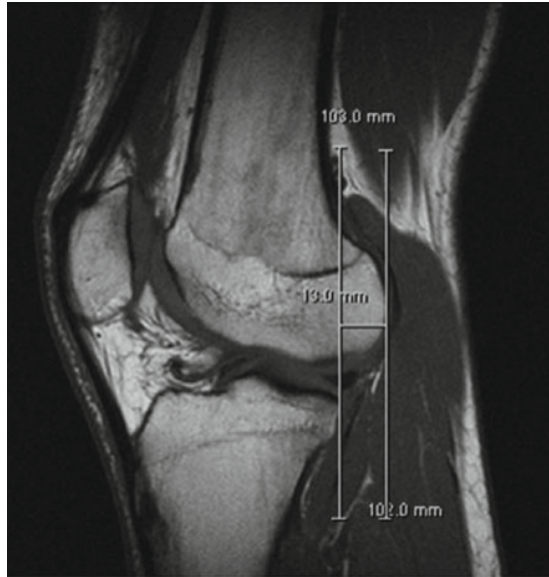
#### Imaging:

- Xray:
  - Segond
    - Constant avulsion fx pattern at anterolateral proximal tibia from forced internal rotation of the knee- in 1879 dr segond



- MRI





#### Operative Indications:

- Previous ACL recon w/ continued anterolateral rotary instability
- After deficient lateral meniscus or PLC injury ruled out

#### Biomechanical surgical considerations

- Combined intra + extra articular reconstruction may provide a more efficient normal restoration of knee kinematics after ACL injury w/ concomitant anterolateral capsular injury
- May decrease stress on the intra articular graft by more than 30%
- Majority of ACL injuries can be tx w/ ACL recon alone.

#### Surgical Technical Pearls

- ALL attachment site marked out equidistant between gerdy's and anterior margin of fibular head, 9.5mm to joint line [ 6mm Ream to 30mm]
- **\*\*Under\*\*** IT band
- Femoral attachment located at 4.7mm posterior and proximal to FCL
- Pin drilled aimed anterior and proximal to avoid acl
- SemiT allograft. Fix in 30 deg flexion

#### Post op

- Weight bear immediately, crutches
- Out of brace when can hold extension w/ no lag

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