

Surgical Approaches for Cartilage Repair



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Disclosure

- Consultant
 - Joint Restoration Foundation
 - Arthrex

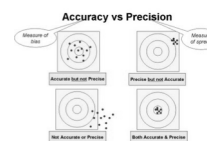


Goals of this Presentation

- Focus on non arthroscopic techniques for access to chondral lesions of the knee.
 - Basic setup, instruments, knee position
 - Intersection of lesion anatomy, repair technique and necessary exposure
- But always remember: The *Decision* is more important than the *Incision*

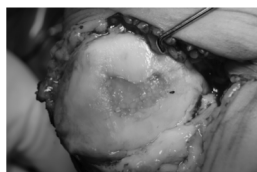
Knee: Considerations

- Sports medicine fellows may have limited opportunity to perform “open” procedures
- Cartilage repair often requires greater exposure than afforded by arthroscopy
- High premium on precision
- Arthrotomy: Is it evil?



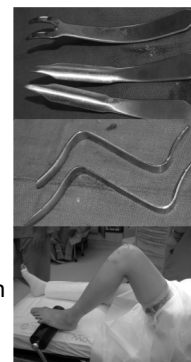
Surgical Approach and Repair Technique

- Marrow stimulation
- Cartilage grafts
- ACI/MACI
- Osteochondral Grafts
- Gravity effects
- Suturing
- Perpendicularity
- Power or hand tools



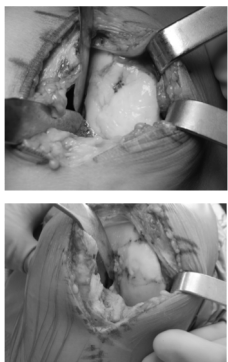
Position and Instruments

- Ideally 2 assistants
- Static leg positioner
 - vs hanging leg
- Retractors
 - Hohmans, “Z” retractors, PCL retractor, 2 prong rakes
- TKA instruments?
- Look at preop imaging and predict appropriate knee flexion angle(s) for easiest exposure



Retractor Placement

- “Z” under collateral ligament
- 1 or 2 hohmanns in notch to lever patella
- Titrate knee flexion
- “mobile window”
- Patella mobility maneuvers

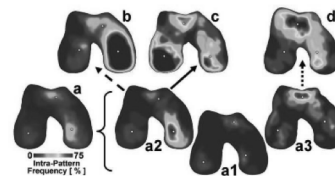
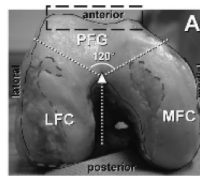


Original Article

Topographic Patterns of Cartilage Lesions in Knee Osteoarthritis

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Lesion Anatomy: Patterns

- MFC
 - Anterior condyle
 - Towards notch (OCD)
 - Medial arthrotomy
 - Knee in 70-90 degrees flexion
 - Easiest lesion to access

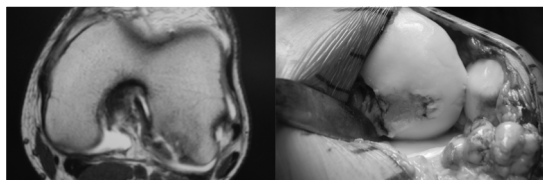


Lesion Anatomy: Patterns

- LFC
 - Posterior condyle
 - Central
 - Lateral arthrotomy
 - Knee in 90-120 degrees flexion
 - More flexion=less patella mobility
 - Patella and meniscus can obstruct exposure
 - Distal and proximal tendon
 - Anterior root meniscus release and repair



Special Case: Medial Arthrotomy + Patella Subluxation for LFC lesion



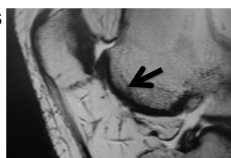
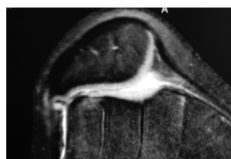
Lesion Anatomy: Patterns

- Patella
 - Complex lesions/ contours
 - Medial arthrotomy
 - Allows for ST realignment
 - Patella eversion
 - Quad release, inferior retinaculum, fat pad
 - 0-20 degrees knee flexion
 - Extra credit question: best technique for patella MFx?



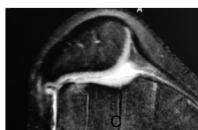
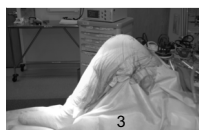
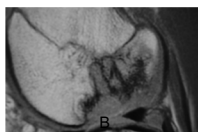
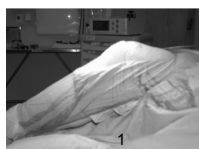
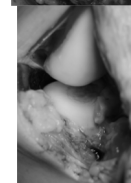
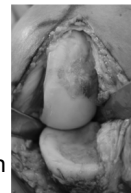
Lesion Anatomy: Patterns

- Trochlea
 - Central, medial, lateral lesions
 - Understand and recognize dysplasia
 - Knee flexion 20-60 degrees
 - Medial arthrotomy
 - Even for lateral lesions
 - Patella much happier going laterally



Lesion Anatomy: Patterns

- Tibia
- Medial plateau
 - Lesions anterior
 - Hyperflexion and tibial ext rotation
- Lateral plateau
 - Lesions central
 - Figure 4 position
 - Cannot access lesion perpendicular



Surgical Approaches: Ankle

- Approaches
 - Medial malleolar osteotomy
 - Lateral malleolar osteotomy
 - Anterior approach
 - Plafondplasty
 - External fixation + joint distraction + plantar flexion
- Common lesions are
 - Anterolateral
 - Posteromedial



You Don't Need to Build A Ship in a Bottle

