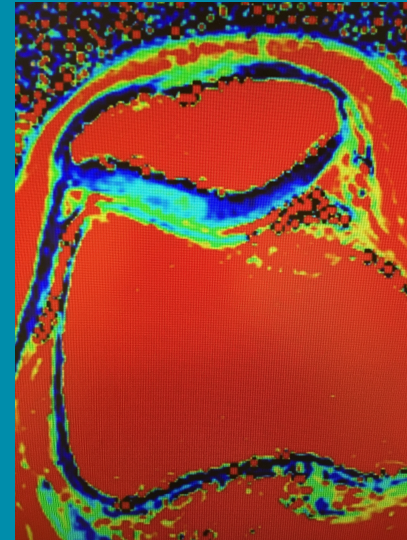


Lateral Patella Pressure in Flexion



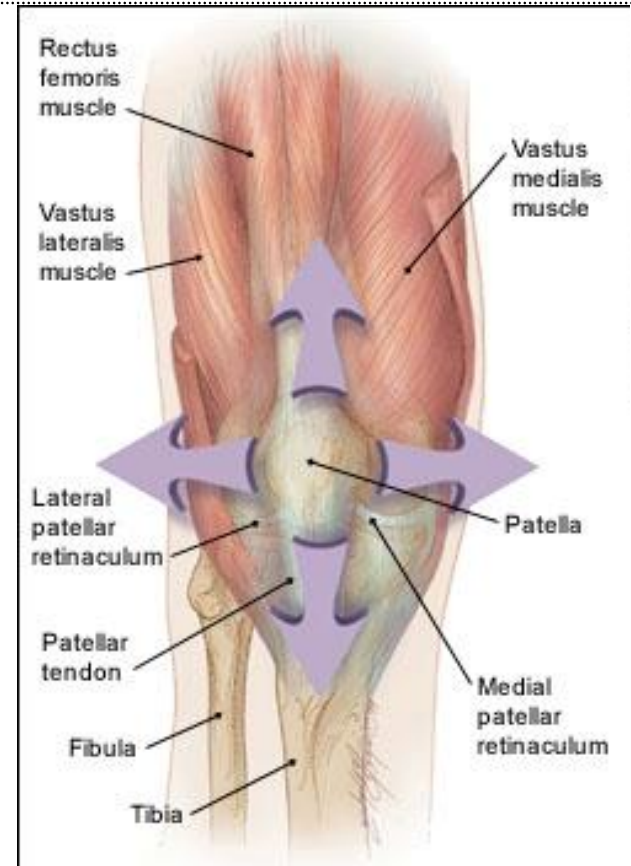
Michael Saper, DO, ATC, CSCS

Assistant Professor, Orthopedics and Sports Medicine

Updated July 4, 2019

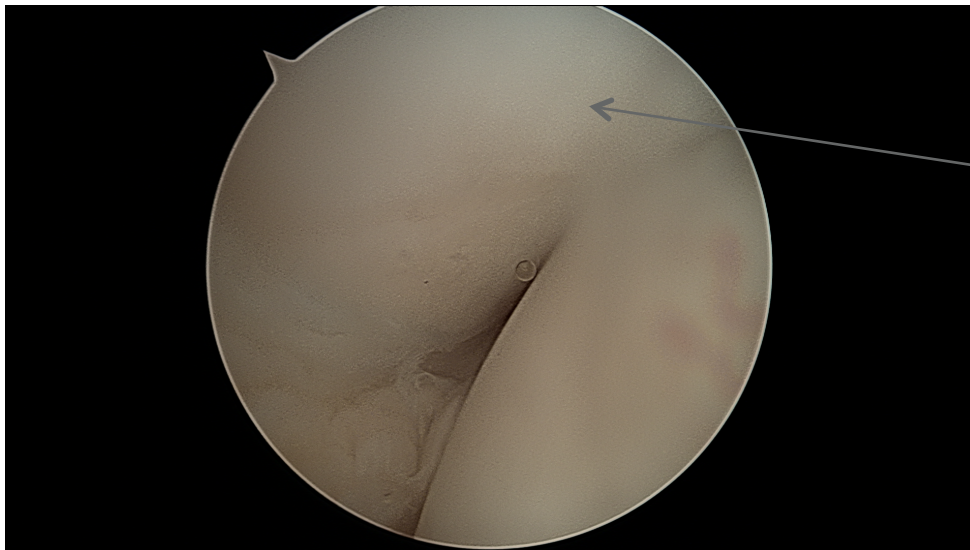
Anatomy

- Patella = “knee cap”
- Trochlea = “groove”
- Patella should stay within the center of the trochlea throughout knee motion



Lateral Pressure in Flexion

- Patella is not centered....rides over lateral femur as the knee bends
- Contact pressure over the lateral patella is increased
- Leads to deterioration of the cartilage and overload of the subchondral bone → Pain!
- Natural history = progression to arthritis



Lateral patella under pressure
over the lateral femoral condyle

History and Symptoms

- Pain for years
- Anterior knee pain out of proportion to exam
- Pain with prolonged knee flexion, stairs
- Usually no mechanical symptoms
- Can also have patella instability
- Medication, PT, bracing not helpful

Key Physical Exam Finding = Positive Centering Test

*Patella is pushed medially providing pain relief



Plain Radiographic Evaluation

DIAGNOSTIC IMAGING

Plain radiographic evaluation of the patellofemoral joint: technique and image interpretation

Michael G. Saper, DO^a, Landon Fine, DO^a and David A. Shneider, MD^{ab}

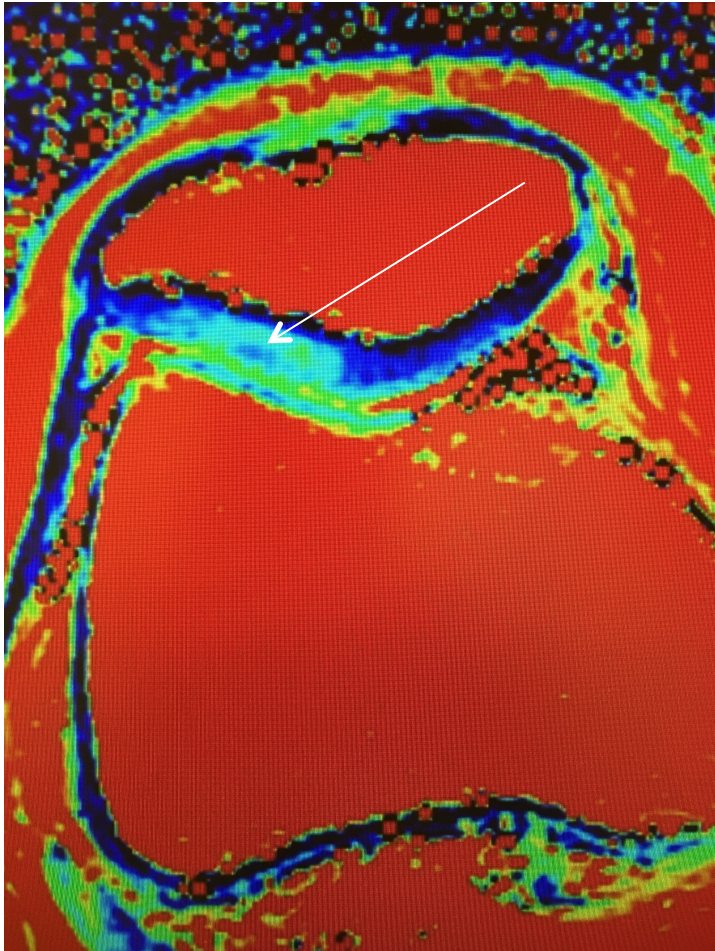
^aDepartment of Orthopaedic Surgery, McLaren Greater Lansing, Lansing, MI

^bMid-Michigan Orthopaedic Institute, PLLC, Lake Lansing Rd., East Lansing, MI

Typically normal

May see concavity of lateral patella facet

MRI – T2 Mapping



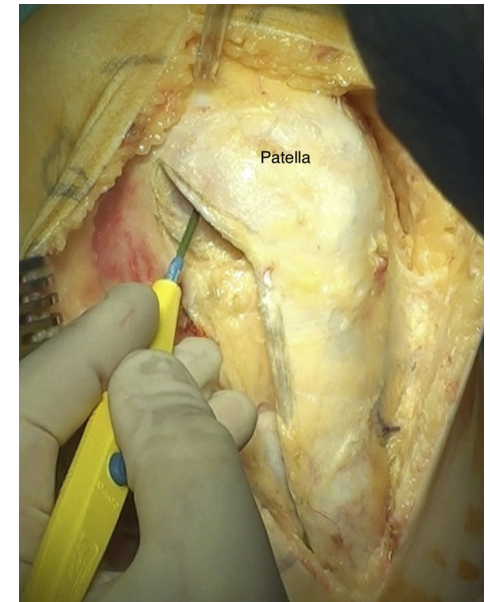
Cartilage deterioration
in lateral patella facet

Treatment Algorithm

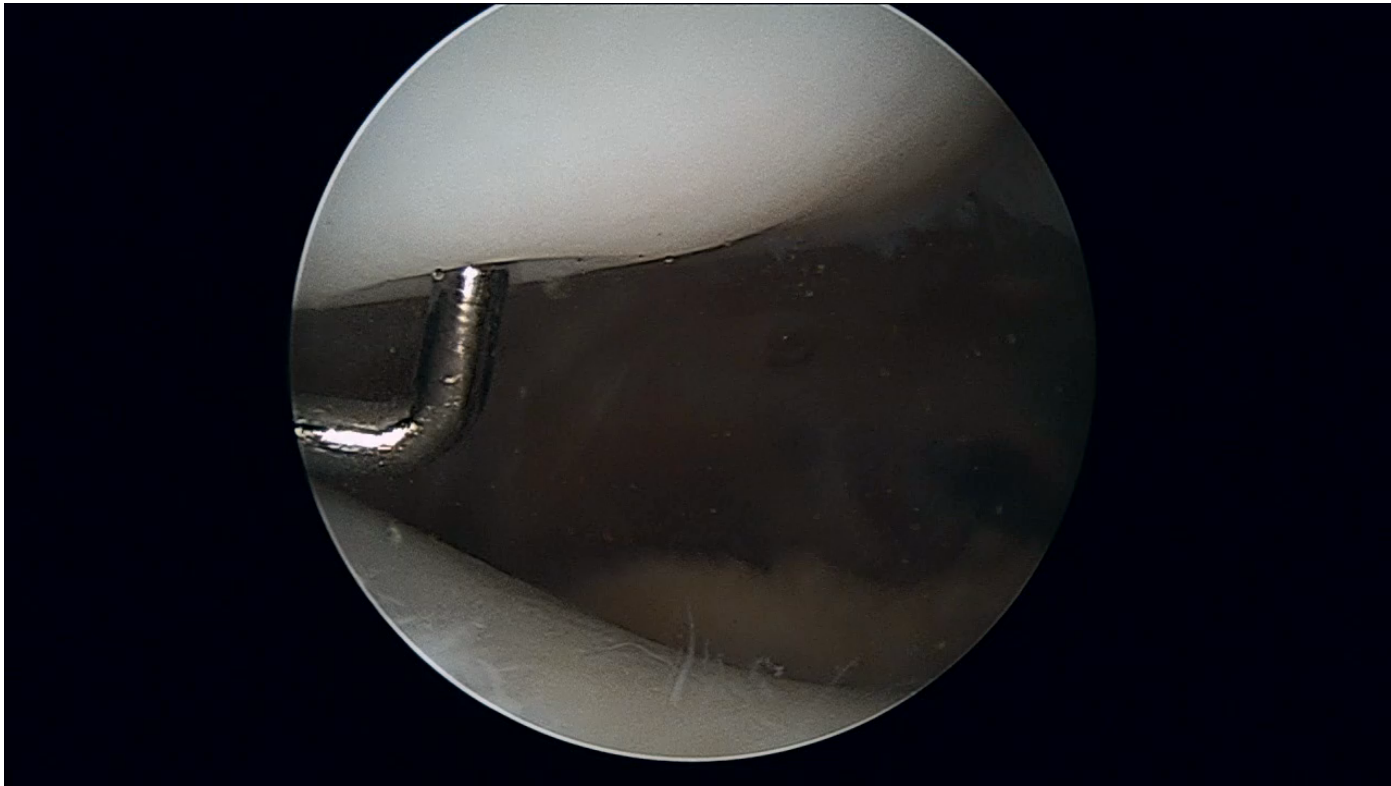
Diagnosis and Treatment of Lateral Patellar Compression Syndrome

Michael G. Saper, D.O., A.T.C., C.S.C.S., and David A. Shneider, M.D.

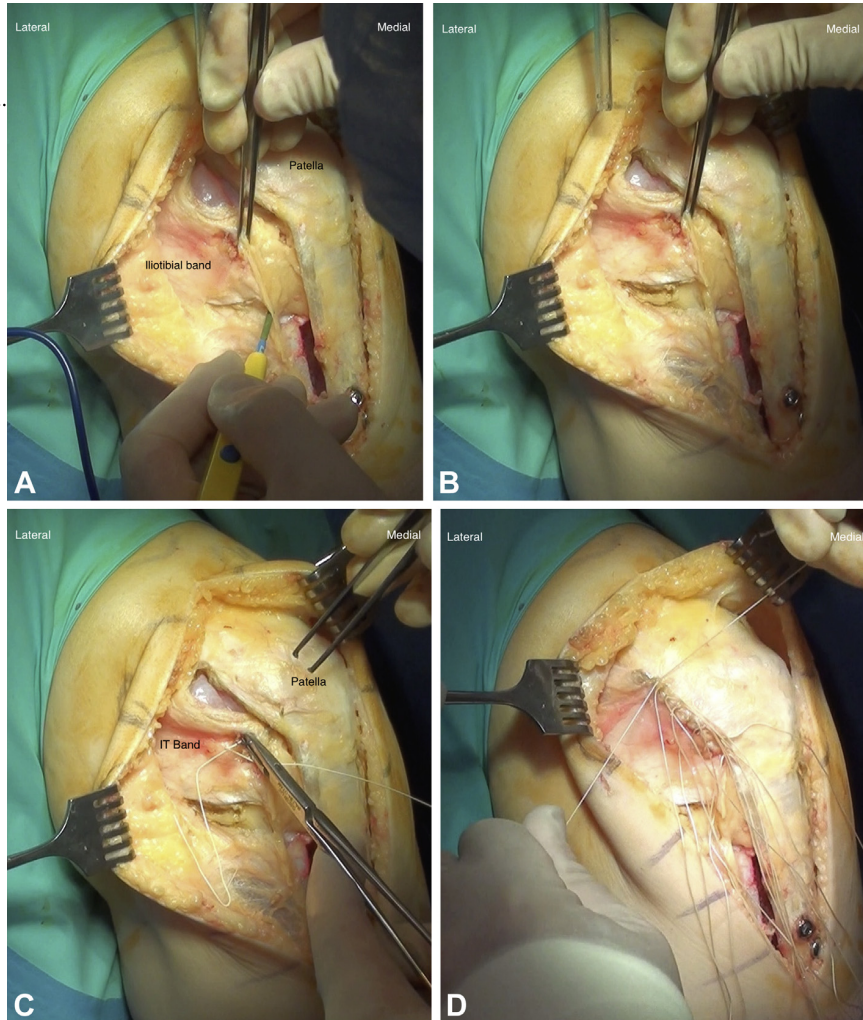
- Arthroscopic evaluation to confirm
- Address chondral/osteochondral injury
- Center patella in trochlea
 - Lateral release (open) with repair
 - ±Tibial tubercle transfer (anteromedialization)
- Address stability if needed.



Chondromalacia of lateral facet



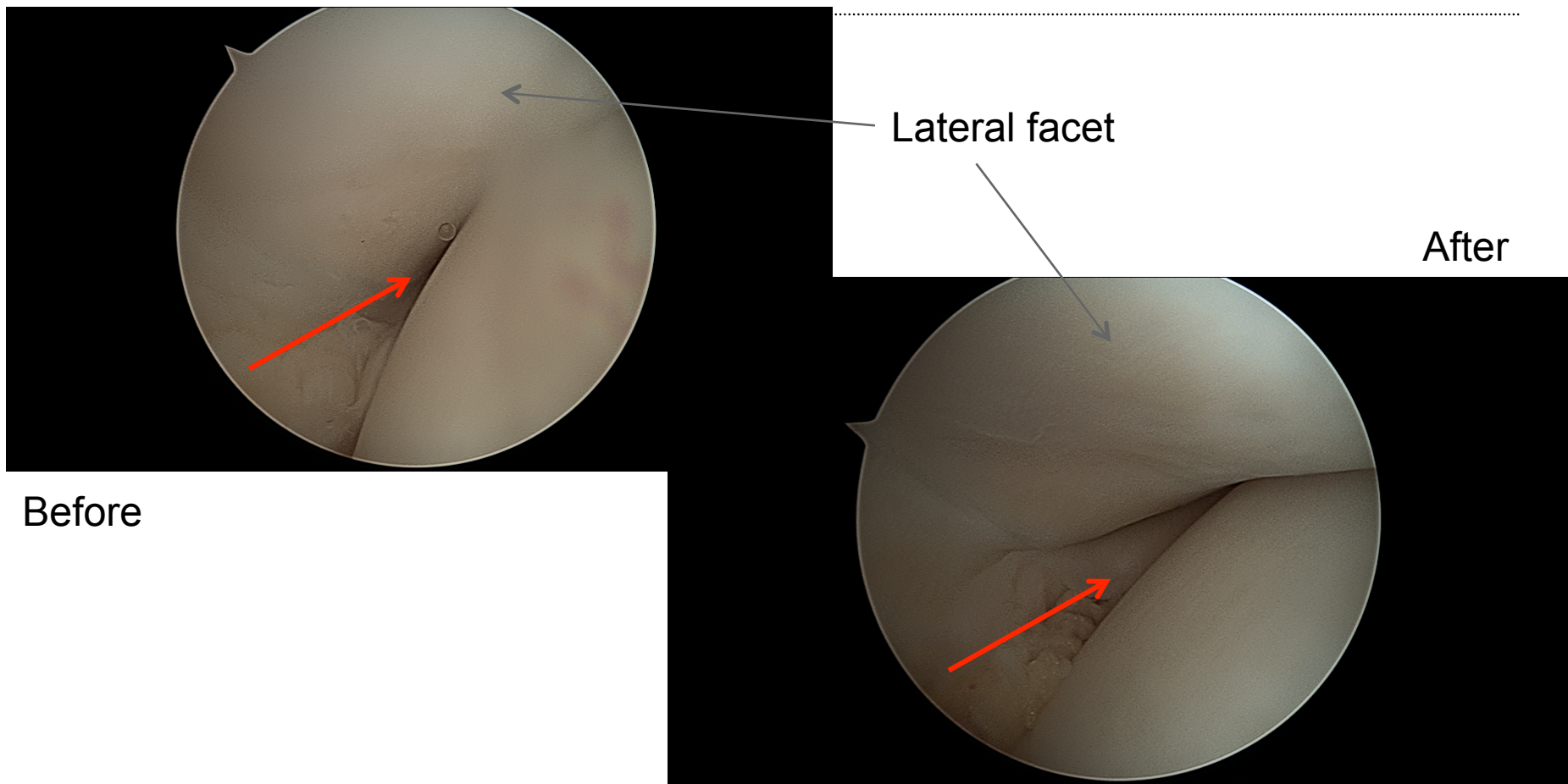
LR and Repair with IT Band Rotation Flap



Repair:

- Prevents medial subluxation
- Restores load-sharing function of lateral retinaculum
- Normalizes PF contact pressures

LR and Repair with IT Band Rotation Flap



Before

After

Complications and Considerations

-
- Anesthesia
 - Bleeding
 - Nerve Injury
 - Infection
 - Stiffness
 - Recurrence
 - Need for hardware removal (~50% if tibial tubercle transfer)

Rehabilitation and Return to Sports

- WBAT with crutches (toe-touch if tibial tubercle moved)
- Brace after surgery for 4-6 weeks until quad strength regained
- Running at 3-4 months
- Return to sport test at 4-6 months

Conclusions

- Goals = relieve pain, regain function
- Diagnosis based on history and physical exam
- T2 mapping on MRI can aid in diagnosis
- Arthroscopy confirms
- Open lateral release and repair results in good or excellent results in 97% of patients with mean f/u of 6 years