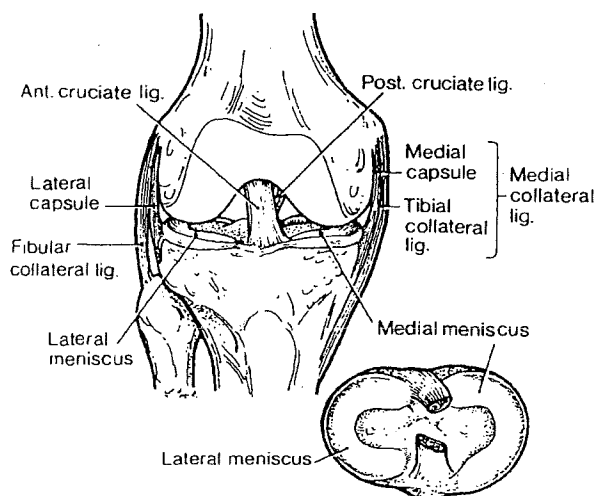


THERAPEUTIC APPROCHES TO THE KNEE

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I. ANATOMY



Structures:

- Bone – Femur
Tibia
Patella
- Articular Cartilage (hyaline cartilage)
- Meniscus (fibrocartilage)
- Ligaments
ACL
PCL
MCL
LCL
- Synovium

Compartments:

- Patellofemoral
- Medial
- Lateral

II. HISTORY

A. INJURY: "What, Where, When, How"

1) Mechanism of Injury

Contact

Hyperextension – ACL

Valgus force (clipping) – MCL

Varus force – LCL

Fall on flexed knee – PCL, patella Fx

Dashboard injury – PCL, patella Fx

Non-Contact –

Deceleration/valgus, ER – ACL

Pushing off w/ER – patella subluxation

Hyperextension/varus – LCL

Twist, squat, running – meniscus

2) Associated Symptoms – "pop" – ACL

Immediate swelling – hemarthrosis – ACL

Feeling of instability – ACL

B. NO INJURY (Onset of Symptoms) – OA, DJD, degenerative meniscus tears, CMP, patella tendinitis, etc

C. CURRENT STATUS – symptoms

- 1) Patella – click, snap, grind, pain on stairs, "movie sign"
- 2) Meniscus – locking, popping, swelling ±
- 3) ACL – instability (giving way) upon pivoting
- 4) DJD – aching, stiffness, pain

III. PHYSICAL EXAMINATION

Check hip motion – “log rolling”. Referred pain?

Alignment – neutral, valgus, varus

Effusion – look for fluid wave. Synovitis. Localized swelling.

Atrophy – distal thigh circumference

Extension

Flexion

Patellofemoral crepitus

Quadriceps angle – (ASIS – patella – tibial tubercle) 15°

Lachman – anterior drawer at 25° flexion

Pivot shift – simulates pivoting motion. Control the tibia and allow gravity to subluxate femur posteriorly (i.e. tibia anteriorly); load the joint and flex/extend. Subluxation and reduction occurs at about 25° flexion.

Valgus laxity at 30° flexion

Varus laxity at 30° flexion

Posterior drawer test

Tenderness

Popliteal Cyst

IV. RADIOGRAPHY

Routine views – AP & lateral

Tunnel view – AP in flexion (shows OCD)

Tangential view of patella - 20° flexion

Weight bearing PA view in slight flexion – showing joint space narrowing

? Bone scan

V. MRI

VI. ARTHROCENTESIS

VII. ARTHROSCOPY

DIFFERENTIAL DIAGNOSIS

ANTERIOR KNEE PAIN

Osgood-Schlatter's disease
Patella tendinitis ("jumper's knee")
Patella articular cartilage (CMP)
Patella instability
Bipartite patella
(Synovial plica)
Pre-patella bursitis
Referred pain – hip/femur

MEDIAL/ANTERIOR PAIN

Osteochondritis dissecans
Medial meniscus tear
 Traumatic – ACL 90% in young patients
 Degenerative – over 40 years old
Osteoarthritis/DJD
Semimembranosus tendinitis
Pes anserinus bursitis
Osteonecrosis
Stress FX proximal tibia
Degenerative joint disease
Popliteal cyst (Baker's cyst)
Neuroma – geniculate branch saphenous nerve

LATERAL PAIN

Lateral meniscus tear
 - Cystic
 - Discoid
 - Torn ACL
Runner's knee – iliotibial friction band (popliteus tendinitis)
Osteoarthritis/DJD
Proximal tibiofibular joint

POSTERIOR KNEE PAIN

Popliteal cyst (? Ruptured)

Deep vein thrombosis

Popliteal artery aneurysm

Hamstring strain (?)

Referred pain

- meniscus
- chondromalacia patella

INSTABILITY

Anterior cruciate ligament (ACL)

Posterior cruciate ligament (PCL)

Medial collateral ligament (MCL)

Lateral collateral ligament (LC)

INFLAMMATORY DISEASES

Gout

Pseudogout – CPPD

Rheumatoid arthritis

Lyme disease

Pigmented villonodular synovitis

Infection (GC, etc)

MISCELLANEOUS

Reflex sympathetic dystrophy