Knee

Bursitis

Prepatella/suprapatella (housemaid's knee) & infrapatella (clergyman's knee) bursitis, management as for olecranon bursitis in Upper Limb Soft Tissue Conditions

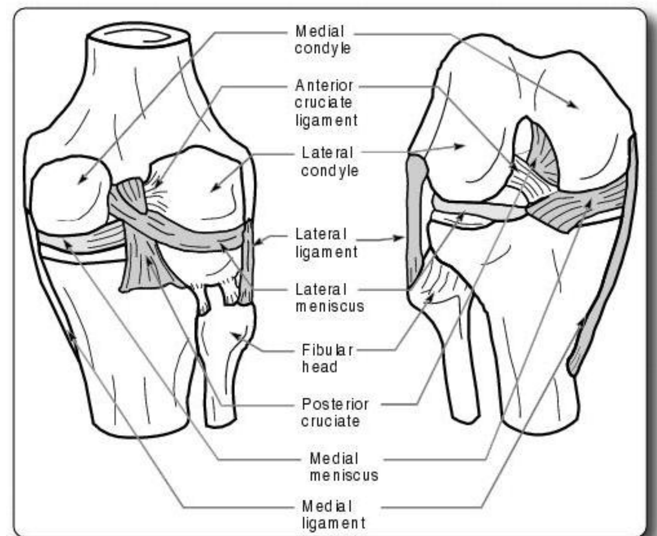
Baker's Cyst

Path: Popliteal swelling from synovial fluid distending the gastrocnemio-semimembranosus bursa, and not a true cyst.
Features: Often symptomless esp in young, may cause pain, knee effusion and may be associated with OA, RA, JCA, gout, SLE & others. Foucher's sign (swelling tense on knee extension & soft on flexion.) on exam. If ruptures mimics a DVT. Both may co-exist.
Inv: USS to diagnose and rule out DVT
Mx: Spontaneous resolution (by 1-2yrs) not uncommon, esp if young. RICE & NSAIDs for mild symptoms. Aspiration, arthroscopy, open excision all have significant recurrence rates.

Ligament & Meniscal Injury

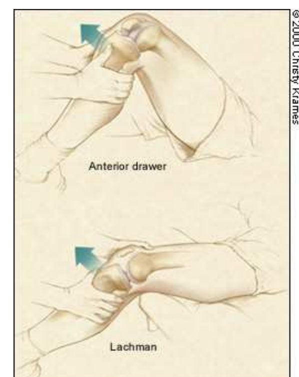
Anatomy & Mechanism:

- Medial ligament (med femoral condyle→prox tibia & medial meniscus): Injury by abd+flex, int rot.
- Lateral ligament: (lat femoral condyle→fib head): Injury by add+flex, ext rot.
- Anterior cruciate: (lat condyle→ant part of tibial spine, limits ant movement): rot.
- Posterior cruciate: (med condyle→post part of tibial spine, limits post movement): blow to/fall on flexed knee.
- Meniscal: (C-shaped fibrocartilage attached to tibial spine): ±Lig injury. Med more often.



Exam: Effusion non-specific & common. Haemarthrosis (Adults: ACL>>med/lat lig>#>PCL. But in adolescents: #s>meniscal tears>>ACL). True locking classical for meniscal tear.
Tests:

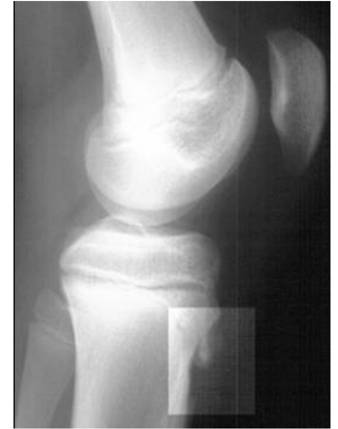
- **Med/lat stability:** Stressing at 30°. If pain but not lax→strain. If lax rpt in full ext – if still unstable→sev multi-lig injury.
- **ACL rupture:** Lachman: (95% sens, knee flexed ~30°, distal femur fixed & proximal tibia lifted ant - intact ACL should stop mvmnt with "firm endpoint"). Pivot shift (75% flex knee & int rot tibia while holding heel, then fib head pulled up & subluxed tibial condyle relocates with a palpable jerk). Ant drawer test (60%).
- **PCL rupture:** Posterior drawer, Godfrey's sign (affected tibia sags when supine pat's legs passively lifted to 90° flexion at hip & knee.)
- **Meniscal:** Bragard's (point tenderness along jt line), McMurrays/Grind not sens or spec.



Class & Mx:

- **Grade 1:** (stretching, no tear, stable): conservative.
- **Grade 2**: (partial tear, mild instability): crutches 6$^+$wk. Ortho r/v.
- **Grade 3:** (rupture, unstable): Ortho r/v re ?surgery. 3-6mo rehab.
- **Isolated meniscal inj:** Arthroscopy if locked else RICE & ortho r/v

Osgood-Schlatter's Disease



Self-limiting apophysitis from repeated quadriceps tendon/patellar lig traction on the tibial tubercle causing multiple subacute avulsion fractures ±excess bone growth.
Assocs: High levels of activity during a period of rapid growth in children 10-15y. Trad M>F (boys did more sport).
Features: ~25% bilateral. Pain±visible lump at tuberosity.
Inv: XR may show fragmentation and irregular ossification
Mx: Rest, ice, NSAIDs, gentle strengthening exercises after acute period, occasionally strapping, rarely surgery

Sinding–Larsen–Johansson Syndrome is an analogous condition involving the patellar ligament and the lower margin of the patella bone, instead of the upper margin of the tibia.

Ankle

Achilles Tendon Rupture

Mech: Forceful plantarflexion or sudden dorsiflexion of foot (initiation of sprint), especially during sports e.g. squash, tennis. Common in 40-50M.
Features: Sudden snap & pain. Unable to walk or stand on toes. Tendon defect may be palpable. Weak plantar flexion by other long flexors. Thompson-Simmons squeeze test.
Mx: POP in "equinus" position if older or surgical repair if young, athletic. Rehab >6mo

Ankle Sprain (ligamentous injury)

Mech: Inversion>eversion. Often 'crack' heard. Very common. 90% involve lateral ligament complex (anterior talofibular lig [ATFL]>calcaneofib lig [CFL]>>posterior talofibular lig [PTFL]. Medial ligament rarely damaged alone)
Classification:

- **Grade 1 tear:** partial tear (norm ATFL), little swelling, GROM, wt bearing, pain on mvmt.
- **Grade 2 tear:** ATFL± CFL tears, moderate swelling, GROM, limited wt bearing, pain at rest. No AP instability with foot at.
- **Grade 3 tear:** Complete tears of ≥2 ligs, sev pain, immed swelling, AP instability at 90°.

Tests:

- **Talar tilt test:** if CFL ruptured, inversion force to heel will tilt talus.
- **Ant-post drawer test:** if AFTL & PTFL ruptured then medial (deltoid) lig acts like fulcrum for talar movement on ant drawing – dimple seen ant to lat malleolous.
- **Gungor test:** patient prone feet off bed. Press each heel steadily, if ATFL ruptured, talus moves forward & skin sucked in making Achilles tendon more pronounced.

Mx: RICE, analgesia, crutches. Grades 1 & 2: non-wt bear for 2 days. Inversion/evasion exercises/physio. Protective strapping for stenuous activity for 6mo. Grade 3: Surgery.

Foot

Plantar fasciitis

Mech: Common traction and overuse injury. It is a degenerative rather than an inflammatory process. Damage tends to occur near the narrow attachment at the heel often associated with calcaneal spurs.
RF: running/jumping sports, obesity, non-sedentary jobs, bad shoes, flat feet (pes planus) and having a high arch (pes cavus).
Features: Heel/plantar pain. Worst in first steps after prolonged inactivity, climbing, running, long period on feet. Relieves with foot elevation. Should reproduce pain by palpating hard the plantar surface over the medial calcaneal tuberosity and along the course of the plantar fascia to base of toes; or by the patient to standing on toes or by passive dorsiflexion of the toes.
Inv: Not usually necessary. Lat x-ray may show soft tissue calcifications or a calcified spur on the anterior aspect of the calcaneus.
Mx: No concensus. Rest, ice, NSAIDs, shoe inserts, stretching exercises/deep massage. Walking casts. Corticosteroid, botulinum toxin A and autologous blood injections may have short term effects. Surgery (fascia release ± spur excision) if refractory symptoms.