4) Gamekeeper's Thumb – Dr. Jwamer

Gamekeeper’s Thumb

- Injury to the ulnar collateral ligament (UCL) of thumb MPJ
- UCL is an important stabilizer of the thumb
- Acute & chronic
- Acute injury known as skier’s thumb occurs due to a fall on outstretched hand with thumb forced into abduction
- Often associated with an avulsion fracture of the proximal base.
- **Grade 1:** pain only felt on stressing the ligament (no laxity)
- **Grade 2:** pain and limited degree of laxity
- **Grade 3:** Marked laxity with no pain on the stressed ligament indicates possible complete rupture
- In 80% cases of a complete tear, the aponeurosis of the adductor pollicis muscle is interposed between the bones of the MCP joint and the torn ligament. When this condition (referred to as a Stener lesion) occurs
- Pain, swelling and bruising over MCP joint, acutely this is accompanied with haematoma and inflammation.
- Maximal tenderness on palpation over UCL
- Decreased range-of-movement
- Pinch grip and power are lost, thumb may deviate radially

O/E

- Test for sensation and observe for neurovascular compromise
- Local anaesthetic or ring block can assist to fully test laxity.
- Apply valgus force with the thumb in 30° of flexion. If there is more than 30° laxity or more than 15° more laxity than on the uninjured side, rupture of the UCL is likely.
- Then examine the thumb in full extension with a valgus stress to assess the accessory collateral ligament. If less than 30° valgus laxity, or 15° or less than on the uninjured side, the accessory ligament is intact.

Imaging

- Plain X-rays to rule out avulsion fractures
- Ultrasound and MRI if diagnosis is in doubt
- Ultrasound shows a sensitivity and specificity of around 80% and
- MRI has around 100% specificity and sensitivity detecting UCL injury
Treatment

- Assess for other injuries
- Analgesia, ice, splint, elevate
- X-ray to exclude fracture
- Immobilise thumb in a plaster or Paris thumb spica cast for 1 week, then patient can be changed to a thermoplastic thumb spica cast for 2-6 weeks
- Arrange for early plastic surgery review for operative Vs conservative management. Currently a very contentious issue and debate continues regarding which UCL injuries require surgical repair.
- As a rule incomplete tears are managed conservatively, while complete tears and avulsion fractures do better managed operatively

De Quervain Syndrome

- Tenosynovitis of the EPB & APL
- The most common tendinitis of the wrist in athletes
- Radial-sided wrist pain exacerbated by thumb movements, especially thumb abduction and/or extension
- Pain may radiate distally or proximally along the course of the APL and EPB tendons

O/E

- Tenderness over the first dorsal compartment
- Positive Finkelstein test
- This test is performed by flexing the thumb into the palm and passively deviating the wrist ulnarly, thus causing maximum stretch to the APL and EPB tendons

Treatment

- Splinting for acute symptomatic relief.
- Single CS injections into the first dorsal compartment sheath are successful in alleviating symptoms in 62% of patients and two injections are successful in 80% of patients.
- Complications of corticosteroid injections include depigmentation, fat necrosis, and subcutaneous atrophy.
- Corticosteroid injections in diabetic patients may be less desirable and less successful.
- 90% of patients can be expected to have satisfactory outcomes following surgical release of the first dorsal compartment for DeQuervain syndrome
- Risk of injury to superficial radial nerve

Hip Bursitis

- Bursitis most commonly is seen about the greater trochanter
- Related to
  - Overuse
  - Wider pelvis seen in women
  - A prominent trochanter
  - Or in runners who adduct beyond the midline
Treatment

- The treatment of most bursitis includes rest, stretching of the involved tendons, and NSAIDs.
- In refractory cases, corticosteroid injection
- The delivery of corticosteroid in the case of psoas bursitis, must be made with the use of radiographic guidance
- In refractory cases, surgical excision of the either the trochanteric bursa or the iliopsoas bursa

The Snapping Hip

- Audible snapping, usually with flexion and extension of the hip during exercise or with normal activities
- It is often accompanied by pain
- Types:
  - Extra-articular
    - External (by iliotibial band or gluteus maximus over greater trochanter)
    - Internal (by iliopsoas over AIIS, LT or IPE)
  - Intra-articular (by loose bodies or labral tears)

Causes

- Extra-articular associated with
- Leg length difference (usually the long side is symptomatic),
- Tightness in the iliotibial band (ITB) on the longer side
- Weakness in hip abductors and external rotators
- Poor lumbo-pelvic stability
- Abnormal foot mechanics (over-pronation)

❖ The physical examination of patients with suspected internal snapping (IP) should include examining the patient in a supine position and having him or her demonstrate the snapping with active leg motion
❖ Flexion and extension of the hip can reproduce the symptoms.
❖ In order to make the symptoms more prominent, the hip should be abducted with flexion and adducted with extension.
❖ The snapping can often be eliminated or significantly lessened by applying pressure over the iliopsoas tendon
❖ The external type is reproduced with hip flexion and extension, although the patient typically can reproduce the snap more effectively while in a standing position.
❖ Like the internal type, the snapping can be decreased, or eliminated altogether by applying manual pressure over the greater trochanter.
❖ Unlike internal snapping, which is typically painless, the external type of snapping is often accompanied by pain secondary to trochanteric bursitis

Imaging

- X-ray to identify loose bodies
- MRI
- Ultrasound
Treatment

- Identification of the underlying cause
- Correcting any contributing biomechanical abnormalities such as over-pronation
- Stretching tightened muscles, such as the iliopsoas muscle, piriformis or iliotibial band
- HI-RICE (Hydration, Ibuprofen, Rest, Ice, Compression, Elevation) regimen lasting for at least 48 to 72 hours after the onset of pain
- Corticosteroid injections to the iliopsoas bursa temporary relief usually only last weeks to months.
- Surgical treatment is rarely necessary unless intra-articular pathology is present or,
  - In patients with persistently painful iliopsoas symptoms surgical release of the contracted iliopsoas tendon has been used since 1984.
  - Iliopsoas and iliotibial band lengthening can be done arthroscopically.
  - Postop, these patients will usually undergo extensive physical therapy; regaining full strength may take up to 9–12 months.

Jumper’s Knee (Patellar Tendonitis)

- Inflammation of the patellar tendon close to the patellar attachment
- Overuse injury due to explosive jumping
- Damage occurs during landing
- **Stage I:** Pain after activity
- **Stage II:** Pain during and after activity
- **Stage III:** Same as in phase II, but with diminished performance
- **Stage IV:** Complete rupture of the tendon, acute loss of extension accompanied by a painful noisy snap

Treatment

- Conservative for Stages 1 & 2
- RICE
- NSAID
- Strengthening quadriceps helps to balance forces across the patella & take pressure off the patellar tendon.
- Also, hamstring stretching is extremely important to take pressure off the anterior structures of the knee
- Neoprene sleeves or braces can help decrease or disperse the forces on the patella
- Surgery is reserved for patients who experience debilitating pain for 6 to 12 months
- The overall goal of surgery is to remove the damaged tissue from the tendon and stimulate blood flow to promote healing.
- Patients with stage 4 disease who have suffered a complete tendon rupture also need surgery

Iliotibial Band Friction Syndrome (ITBS)

- Inflammation of the iliotibial band as it rubs against the lateral epicondyle of the femur
- It is most symptomatic when running downhill
- Predisposing factors:
  - ITB tightness
  - Musculotendinous imbalances around the knee
  - Excessive foot pronation
  - Genu varus
  - Overtraining
O/E
- Local swelling and tenderness over the iliotibial band anterior to the epicondylar origin of the lateral collateral ligament
- The tenderness can be variable in different degrees of knee flexion.

Ober Test:
- While the patient is on the lateral position, the patient is asked to abduct the hip then flex the knee flexed. Keep the knee flexed
- When asked to adduct the hip, patients with tight iliotibial band are not able to touch the examining table with the medial side of their affected extremities

Treatment
- The patient may start ice massage and stretching exercises over the lateral structures of the thigh
- Physical activities without pain are allowed.
- Running downhill or on very hard surfaces should be avoided.
- Proper stretching and warm up as well as periods of rest are encouraged.
- NSAID
- In refractory cases steroid injections around the lateral epicondylar bursae can be useful but direct injection over the tendon should be avoided.
- If there is any lower limb mal-alignment, orthotics may be prescribed

Meniscal Lisions
- The menisci have an important role in:
  1. Improving articular congruency and increasing the stability of the knee
  2. Controlling the complex rolling and gliding actions of the joint
  3. Distributing load during movement
- During standing, at least 50% of the contact stresses are taken by the menisci when the knee is loaded in extension, rising to almost 90% with the knee in flexion.
- If the menisci are removed, articular stresses are markedly increased;
- Even a partial meniscectomy of one-third of the width of the meniscus will produce a threefold increase in contact stress in that area.
- Medial meniscus is much less mobile than lateral, & it can’t as easily accommodate to abnormal stresses.
- This may be why meniscal lesions are more common on the medial side than on the lateral
- There is gradual stiffening and degeneration of the menisci with age, so splits and tears are more likely in later life
- In young people, meniscal tears are usually the result of trauma
- The meniscus consists mainly of circumferential fibres held by a few radial strands.
- It is, therefore, more likely to tear along its length than across its width
- The split is usually initiated by a rotational grinding force, which occurs when the knee is:
  - Semi-Flexed and Pivoting while Taking weight
- Most of the meniscus is avascular and spontaneous repair does not occur unless the tear is in the outer third, which is vascularized from the attached synovium and capsule
Clinical features

- Pain
- Swelling appears hours later, or next day
- With rest the initial symptoms subside, only to recur after trivial twists or strains
- Sometimes the knee gives way spontaneously and this is again followed by pain and swelling
- Locking (the sudden inability to extend the knee fully) suggests a bucket-handle tear
- The patient sometimes learns to unlock the knee by bending it fully or by twisting it from side to side.

O/E

- The joint may be held slightly flexed
- There is often an effusion
- In longstanding cases the quadriceps will be wasted.
- Tenderness is localized to the joint line, in the vast majority of cases on the medial side
- Flexion is usually full but extension is often slightly limited

Meniscal Tests

- McMurrays’s Test
- Thessaly’s Test
- Apley’s Test

Investigations

- X-ray
- MRI

Differential diagnosis

- Partial tear of MCL
- Loose bodies
  - Insidious history
  - Presentation variable in character and intensity.
  - A loose body may be palpable and is often visible on x-ray.
- Recurrent dislocation of the patella
  - Knee giving way (the pt collapses to the ground
  - Tenderness is localized to the medial edge of the patella
  - The apprehension test is positive
- Fracture of the tibial spine
  - Follows an acute injury and may cause a block to full extension.
  - Swelling is immediate and the fluid is blood-stained.
  - X-ray may show the fracture
Treatment

Conservative treatment

- If the knee is not locked, the tear is peripheral and can therefore heal spontaneously
- After an acute episode, the joint is held straight in a plaster backslab for 3–4 weeks
- Crutches and quadriceps exercises
- MRI check if the meniscus has healed

Surgery indications

1. If the joint cannot be unlocked
2. If symptoms are recurrent
- Suturing or Excision
- At diagnostic arthroscopy tears close to the periphery, can be sutured; at least one edge of the tear should be in red zone (vascularized)
- Tears other than those in the peripheral third are dealt with by excising the torn portion
- Total meniscectomy must be avoided
  - Instability
  - Secondary osteoarthritis
- Arthroscopic meniscectomy faster rehabilitation

ACL

- The ACL is a two-bundle ligament
- The cross sectional area of the ACL is approximately 35 mm² and the average length is 25 mm.
- The tension in the two bundles varies with knee flexion;
- The anteromedial is tight in flexion
- The posterolateral tight in extension

ACL Injuries

- Pivoting on a semi-flexed weight bearing knee
- Feel a pop, followed by pain and swelling
- Unable to continue playing
- In chronic cases there is knee instability with pivoting, jumping, or lateral motions
- The patients complain that the knee gives way, and it feels like the bones are coming apart

Lachman Test

- The knee flexed at 30 degrees, and the hamstrings relaxed.
- The examiner assesses the amount of anterior translation and the presence or absence of an endpoint compared to the opposite knee
- The Lachman test can be graded as follows:
  - Grade 1+ has up to 5 mm displacement with a firm end point,
  - Grade 2+ has 5 to 10 mm displacement with no end point,
  - Grade 3+ has greater than 10 mm displacement
The dropped leg Lachman test

- In acute situation, dropped leg Lachman test is performed by letting the thigh rest on the edge of the bed
- The leg is dropped over the side with 30 degrees of knee flexion
- The hamstring muscles are relaxed in this position

Pivot Shift Test

- This test is performed by the examiner supporting the patient's leg in extension.
- One hand then applies an axial load, and valgus force as the knee is slowly flexed

Anterior Drawer Test

- It is performed with the patient's knee flexed 90 degrees and stabilized by the examiner sitting on the foot, while applying an anterior directed force to the proximal tibia
- The amount of anterior translation of the tibia under the femur is compared to the opposite leg.

Imaging

- X-ray all cases
- MRI

Treatment

- The initial treatment of all ACL injuries includes splinting, crutches, and early physiotherapy
- Definitive treatment:
  - Conservative: avoid pivoting sports then resume modified activities with a knee brace
  - Surgical: ACL reconstruction (arthroscopic or open)

PCL

- The PCL is also a two-bundle
- The two bundles vary in tension with knee flexion
- The anterolateral is tight in flexion
- The posteromedial is tight in extension
- Insertion of the PCL on tibia is slightly lateral, & 1-2 cm below the joint line

PCL Injury

- Isolated PCL tears most likely result from a direct blow to the proximal tibia, causing a posteriorly directed force.
- This occurs with the so-called dashboard knee in motor vehicle accidents, or when the proximal tibia contacts an immovable object.
- A fall on a flexed knee with the foot in plantar flexion may also induce an isolated PCL tear
- Forced flexion plus internal rotation has also been reported to cause isolated PCL tears

Clinical features

- Unstable knee
- Posterior lateral knee pain
- Posterior Sag Sign (Gravity Drawer Test)
- Positive posterior drawer test