

JUMPER'S KNEE

Typically anterior knee pain at the inferior pole of the patella in 65% and tibial tuberosity 10% and superior pole of patella 25%

Overuse tendinoses of ligamentum patella

Common in basket or volley ball, Athletes

Site of tenderness and thickness of ligamentum patella near the inferior patellar pole

Blazina's classification

I: Pain only after sports

II: Pain at the beginning and disappears with warm up and reappears after fatigue

III: Constant pain at rest and with activity

IV: Complete rupture

X ray

Periosteal reaction of the anterior patellar surface (tooth sign)

Calcification of tendon

Ultrasound and MRI are useful in diagnosis

Pathology: Thickened tendon; Hyper echo [scar] and Hypo [edema]

Irregularities of the tendinous envelope

Conservative Treatment

Eccentric quadriceps exercise; stretching

Surgical

Short longitudinal incision

Tendon is split longitudinally: 3 or 4 incision

Remove degenerate tendon

Drill apex of the patella

RJ bandage and PWB and FWB in 6 wks.



SYNOVIAL PLICAE

3 types: Suprapatellar

Mediopatellar

Infrapatellar

Formation of joint space was first observed at 8 wks

These coalesce to form large single cavity by 10 wks

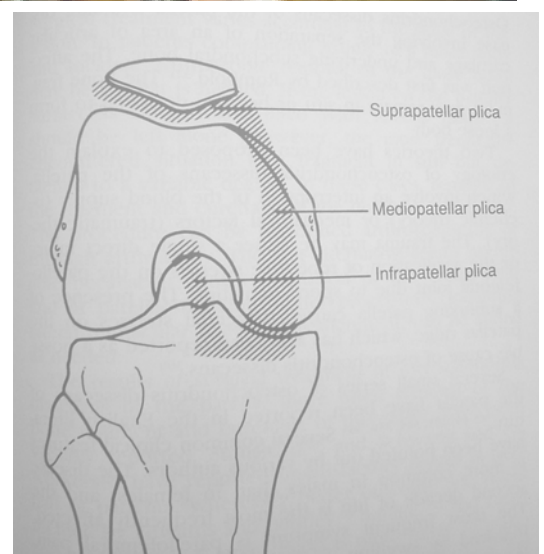
10% may have broad mediopatellar plica covering medial condyle and in 30% broad suprapatellar plicae

Vestiges of a membranous knee joint partition present

Most are asymptomatic

Can cause anterior knee pain due to chronic or transie

Treatment



Arthroscopic division or debridement

Osteochondrosis

SINDING-LARSEN-JOHANSSON DISEASE

Occurs in the same age group

The point tenderness and pathology are located at the lower pole of the patella.

The lateral radiograph of the patella may be normal or show some speckled calcification in the patellar tendon adjacent to the lower pole.

Treatment is as for Osgood-Schlatter disease.

Usually the area of speckled calcification heals, leaving the familiar elongated lower pole of the patella which is so often seen in footballers

OSGOOD SCHLATTER'S SYNDROME

An Osgood-Schlatter's lesion involves pain and swelling in the small bump of bone at tibial tuberosity.

It occurs in children and adolescents.[10-15 years] The problem used to happen mostly in boys

The problem affects the area where bone growth occurs.

Too much stress on the growing bone causes the pain and swelling.

The pain often worsens with activity and eases with rest. Fortunately, the condition is not serious. It is usually only temporary.

The patellar tendon connects the large quadriceps muscle on the front of the thigh to the tibial tuberosity. As the quadriceps muscle works, it pulls on the patellar tendon and extends (straightens) the knee joint.

Osgood-Schlatter lesions fit in a category of bone development disorders known as osteochondroses.

Schlatter lesion also have a small chance of problems at the top of the patellar tendon, where it attaches to the bottom tip of the kneecap. This condition is known as Sinding-Larsen-Johansson disorder.

The main cause of Osgood-Schlatter lesions is too much tension in the patellar tendon. The tension can come from overuse from sports activity and from growth spurts. Usually both happen together. Both put extra stress on the tibial tuberosity.

During growth spurts, the tendon may not be able to keep up with the growth of the lower leg. The tendon becomes too short. It constantly pulls at the tibial tuberosity. Tension from sports activity comes from overuse.

Clinical

The tibial tuberosity will probably be enlarged and painful.

It hurts when bumped. It also hurts when pressure is put on it, such as when kneeling.

Activities like running, jumping, climbing, and kicking may hurt because of the tension of the patellar tendon pulling on the tibial tuberosity.

Symptoms generally go away gradually over a period of one to two years.

A knee X-ray may show a raised area of irregular bone in the tibial tuberosity.

Most often it will show swelling in the soft tissues in front of the tibial tuberosity.

In more severe cases, the X-ray may show small bony fragments that are separated from the rest of the tibial tuberosity.

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Treatment Nonsurgical Treatment

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It takes one to two years for the bone growth plates of the tibial tuberosity to grow together and form one solid bone.

When this occurs, symptoms usually go away completely.

In some cases, the patient may need to stop sport activities for a short period. This gets the pain and inflammation under control.

Anti-inflammatory medicine to help reduce swelling.

Physical therapists might use ice, heat, or ultrasound to control inflammation and pain.

A variety of pads, straps, and sleeves are available



Surgery

Surgery is not considered unless bone growth is complete.

When surgery is needed, the usual operation involves removing the raised area of the tibial tuberosity, the bursa, and irritated tissue nearby.

BAKERS CYST

A Baker's cyst, otherwise known as a popliteal cyst, is a benign swelling of the knee bursa found behind the knee joint. It is named after the surgeon who first described it, Dr. William Marrant Baker (1838-1896)

In adults, Baker's cysts usually arise from almost any form of knee arthritis and cartilage (particularly the meniscus) tear. Baker's cysts can be associated with Lyme disease, Rheumatoid arthritis. Baker's cysts in children do not point to underlying joint disease. Baker's cysts arise between the tendons of the medial head of the gastrocnemius and the semimembranosus muscles. They are posterior to the medial femoral condyle.

A Baker's cyst can rupture and produce acute pain behind the knee and in the calf and swelling of the calf muscles.[D/D DVT]

Diagnosis is by examination. They are easier to see from behind with the patient standing with knees fully extended and then most easily felt with the knee partially flexed.

Treatment

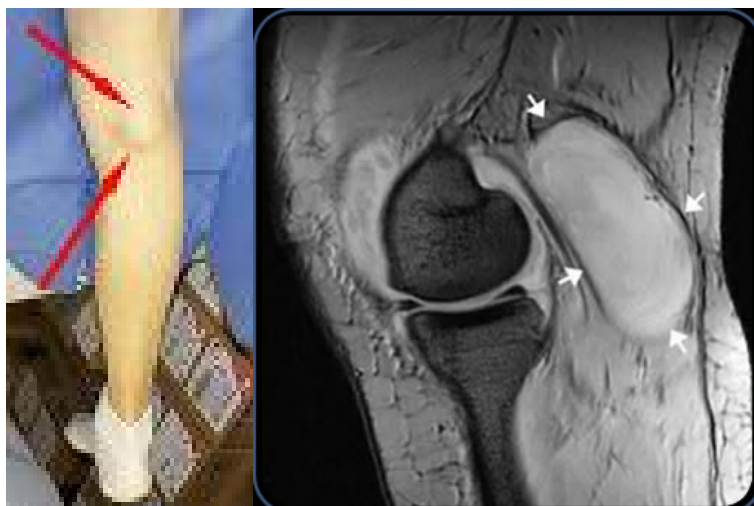
Baker's cysts usually require no treatment unless they are symptomatic.

Often rest and leg elevation are all that is needed.

If necessary, the cyst can be aspirated to reduce its size, then injected with a corticosteroid to reduce inflammation.

Surgical excision is reserved for cysts that cause a great amount of discomfort to the patient. Most of these patients need TKR for arthritis.

Recently, prolotherapy (in use at the Mayo Clinic since 2005) has shown encouraging results as an effective way to treat Baker's cysts



SEMIMEBRANOUS CYST

They present at the posteromedial knee at the popliteal crease as a painless, asymptomatic mass in children who are 4 to 8 years old

Large cysts can cause pain in the posterior knee and a flexion contracture.

On examination, the cyst is more prominent with knee extension.

Swelling is cystic in nature

MRI delineates the cyst

The typical popliteal cyst arises in the space between the medial gastrocnemius head and semimembranosus tendon.

Unlike popliteal cysts in adults, pediatric cysts only very rarely are associated with intra-articular pathology

In the vast majority of cases, the natural history of pediatric popliteal cysts is spontaneous resolution over 12 to 24 months .

Treatment involves reassurance and follow-up clinical examination if concern arises.

Cyst recurrence rates post-excision are quite high, ie, 30% to 40%



MENISCAL CYSTS

Parameniscal cysts occur relatively infrequently

They are usually associated with horizontal cleavage tears.

Usually more common on the lateral meniscus

Meniscal cysts are multilocular and are lined with synovial endothelial

Aetiology theories

1. traumatic origin
2. purely degenerative origin

Pathology

In the absence of a meniscal tear, central degeneration is the cause for the cyst.

A meniscal cyst may then develop more peripherally, leaving the body of the meniscus abnormal, but not torn.

Clinical

Intermittent swelling at the joint line is variable [Usually lateral joint line]

Pain over the area is quite common.

The size of the swelling decreases with knee flexion and increases with extension is consistent with a meniscal cyst.

Investigations

MRI is valuable for confirming the presence of a suspected meniscal cyst and identifying any concurrent meniscal tear & excluding other pathologies



Diagnostic arthroscopy determines the presence of a meniscal tear. In the presence of a meniscal tear, partial meniscectomy followed by arthroscopic cyst decompression is the treatment of choice.

If a tear is not confirmed at the time of arthroscopy, then open-cyst decompression with peripheral meniscal repair becomes the logical treatment option, thereby leaving the body of the meniscus unviolated.

In the presence of a small meniscal tear, an arthroscopic limited partial meniscectomy may be performed, and if no tract is identified, then conversion to an open cystectomy may similarly preserve the peripheral meniscal body

DISCOID MENISCUS

“snapping knee syndrome,”

Many children remain asymptomatic, and few present with a snapping knee.

The incidence: 3% to 5%

Discoid morphology occurs almost exclusively in the lateral meniscus, but medial discoid menisci have also been reported

The incidence of lateral bilateral abnormality is 20%

Etiology

1. Smillie : An arrest in embryologic development with failure of central meniscal resorption

2. Increased meniscal mobility and repetitive microtrauma to the meniscus

Hypermobility does not explain the etiology of very commonly seen stable discoid meniscus

Classification [Watanabe]

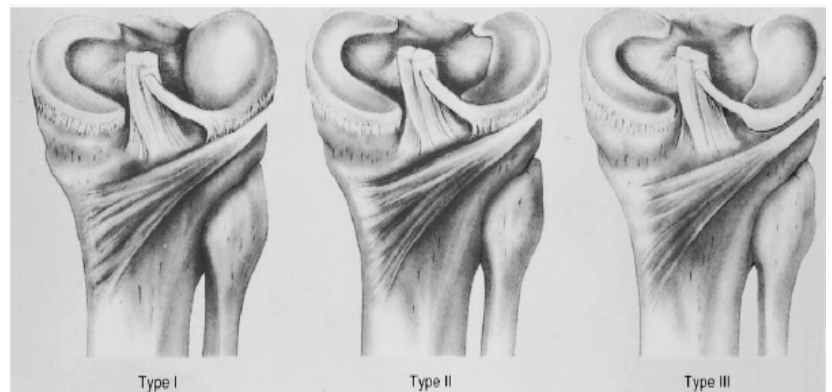
Type I complete

Type II Incomplete

80% of the tibia

Type III Discoid lateral

“Wrisberg-ligament”



Stable discoid menisci without associated tears often remain asymptomatic, identified only as incidental findings on MRI

Unstable menisci: present in younger children and produce the so-called “snapping knee.”

1. Painless palpable, audible, or visible snap is produced mainly near terminal extension.
2. This snap is thought to be secondary to reduction of the unstable meniscus as the joint space widens with knee extension.
3. In children with stable discoid lateral menisci, symptoms present when an associated tear is present. : symptoms may present insidiously without previous trauma.
4. . Degenerative horizontal cleavage tears are the most common tear: 80%

- X ray:**
1. A widened lateral joint line,
 2. Calcification of the lateral meniscus,
 3. Squaring of the lateral condyle with cupping of the lateral tibial plateau,
 4. Mild hypoplasia of tibial eminence-

MRI

3 criteria

1. Continuity between anterior and posterior horns on 3 successive sagittal slices
2. A transverse meniscal diameter of more than 15 mm
3. More than 20% of the tibial width on transverse images.
4. Look an associated meniscal tear.
5. Complete discoid menisci are more easily detected than partial discoid menisci.
6. Wrisberg-type can be very difficult to detect on MRI.

When a strong clinical suspicion for discoid meniscus exists despite a negative MRI, the diagnosis should still be and, if symptoms warrant, arthroscopy should be performed.

Treatment

Asymptomatic discoid	No treatment necessary.
Symptomatic discoid	Traditionally, total meniscectomy
Now symptomatic lesions	“Saucerization” is the treatment of choice. debrides the discoid meniscus to a peripheral rim of 6 to 8 mm
If meniscal instability exists	Meniscal stabilization [Repair]
If a meniscal tear is present	concurrent debridement is performed.
Unstable Wrisburg type	Repair Wrisberg to capsule



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