Baker's Cyst

A Baker's cyst (also known as a popliteal cyst) is a fluctuant swelling located in the popliteal space. The term is a misnomer, as the swelling is the result of synovial fluid distending the gastrocnemius-semimembranosus bursa, rather than being a true cyst. In older patients it is commonly part of a chronic knee joint effusion which herniates between the two heads of the gastrocnemius and is most commonly secondary to degenerative or meniscal pathology.

Primary cysts have not been found to communicate directly with the knee joint. These cysts usually occur in young people and are symptomless.

Secondary cysts communicate freely with the knee joint and contain fluid of normal viscosity. They are thought to be caused by a combination of weakness around the knee, internal pathology and valvular opening between the knee joint and bursa. These types of cysts occur in older people, often cause symptoms and are associated with underlying articular disorders. Secondary cysts are more common than primary cysts.

**Epidemiology**

- The reported incidence and prevalence vary greatly depending on the type of imaging used.
- One study found that around 25% of patients with knee pain had a Baker's cyst which was diagnosed by ultrasound.[1]
- There are two age-incidence peaks between 4 to 7 years and 35 to 70 years.
- There is no predilection for race or sex.
- The most common conditions associated with Baker's cyst are osteoarthritis, rheumatoid arthritis and juvenile rheumatoid arthritis.[3]
- In adults, the aetiology of Baker's cyst may be related to an inflammatory process, meniscal tears or mechanical intra-articular derangements of the knee joint.[3]

**Presentation**

Popliteal cysts may present as either a chronically persistent or relapsing condition or as an acute and dramatic condition that can occur in the case of cyst rupture presenting as pseudothrombophlebitis.

- Popliteal mass: this is the most common presenting symptom.
- Pseudothrombophlebitis syndrome: this is a syndrome in which symptoms simulate those of deep venous thrombosis (DVT).
- Thrombophlebitis: the anatomical site of a Baker's cyst means that there can be an increased risk of thrombophlebitis.
- Other presentations include aching, knee effusion, clicking of the knee, buckling of the knee and locking.
- Occasionally the cyst can rupture, resulting in pain and swelling of the calf.

Exclude a DVT in patients with Baker's cyst and leg swelling.

**Examination**

- This may reveal a transilluminable swelling in the posteromedial aspect of the knee.
- Foucher's sign can often be demonstrated, in which the swelling becomes tense on extension and soft on flexion.
- Many patients with Baker's cysts without symptoms at the popliteal fossa do not have any signs of a Baker's cyst on examination.[4]
- Overlying skin changes may suggest a superficial haemangioma, lymphangiosarcoma, dermofibrosarcoma or Kaposi's sarcoma.

NB: a patient with a sudden increase in size of lump, change in consistency, increased pain and/or neurovascular compromise are all red flags that indicate a need for an urgent specialist assessment.[2]

**Differential diagnosis**

- DVT.
- Vascular masses - popliteal artery aneurysm, cystic adventitial degeneration of popliteal artery (Erdheim's mucoid degeneration), haemangioma.
- Inflammatory arthritides.
- Septic arthritis.
- Postoperative changes (seroma, haematoma, abscess).
- Haemophilic arthropathy.
- Benign soft tissue tumour - peripheral nerve sheath tumours (neurolemmoma).
- Malignant - myxoid liposarcoma (adults), lipoblastoma (children, especially aged <5 years), lymphangiosarcoma, dermofibrosarcoma, Kaposi's sarcoma, rhabdomyosarcoma.
- Meniscal cyst (occurs more commonly laterally but medial cysts have been identified).
Further reading & references


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