Unusual lateral presentation of Popliteal Cyst: A case report

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ABSTRACT

The commonest cyst to occur in the popliteal region is the popliteal cyst and over the past years it has received much clinical attention. The commonest position of the popliteal cyst is in the posterosuperior aspect of the medial femoral condyle. The present case report describes a rare case of popliteal cyst, which was found on the postero-superior aspect of the lateral condyle of the femur. Interestingly, there are fewer reports of popliteal cysts occurring in the postero-superior aspect of the lateral condyle. We as anatomists describe the topographical anatomy of an unusual presentation of popliteal cyst in the postero-superior aspect of the lateral popliteal region and discuss its clinical significance. Anatomical knowledge of such anomalies may be important for clinicians, orthopedic surgeons and academicians in routine clinical practice.

Keywords: Popliteal cyst; Baker's cyst; anomalies; popliteal swelling; synovial cyst.

INTRODUCTION

Popliteal cyst, also known as Baker's cyst is the most commonly occurring mass in the popliteal region. The classical Baker's cyst presents as an enlargement of the gastrocnemius-semimembranosus bursa and is related to the postero-superior aspect of medial femoral condyle. Lateral presentation of the cyst in the popliteal region is rare. The cyst that is being described in the present case was related to lateral femoral condyle and extended proximally on the popliteal surface of femur deep to the popliteal vessels. Such a presentation may be confused clinically with common swellings in this area such as thrombophlebitis, lipoma or xanthoma. The anatomical knowledge of such rare variations may be helpful for the diagnosis and careful clinical assessment of the popliteal swellings prior to any surgical procedure.

CASE REPORT

During routine dissection of the right lower limb of an embalmed 42-year-old male cadaver in the Department of Anatomy, Maulana Azad Medical College, we detected a rare popliteal cyst. There were no signs of any past surgical interventions in the vicinity of the knee. The topographical anatomy of the cyst and its relation to neighboring structures was studied in detail and appropriate photographs were taken. (Fig.1 and 2)

OBSERVATIONS

No surface swelling was discernible in the popliteal region. Dissection of the popliteal fossa facilitated exposure of the cyst on the popliteal surface of femur (Fig. 1). This retort shaped, pedunculated cyst was 7.5 x 5 x 2.5 cm in size with a narrow lateral stem, which flared out medially. The cyst was related medially to the tendons of semimembranosus and semitendinosus muscles and laterally to the biceps femoris muscle. It was closely related to the popliteal surface of femur lying deep to popliteal vessels and tibial nerve. On careful observation, the cyst was found to be translucent, fluctuant, containing viscous fluid and it was not adherent to the adjacent structures (Fig. 2). The cyst was present on the postero-superior aspect of lateral condyle of femur and extended proximally on its popliteal surface. Further exploration revealed a communication between the cyst stalk and the joint cavity just above the tendon of popliteus muscle. No abnormality as regards the position of the blood vessels and nerves was noted in this region. Both the menisci appeared normal. Joint surfaces did not display any degenerative changes. No other associated anomaly was found in the juxta-articular region.

DISCUSSION

Baker's cyst is a synovial cyst in the popliteal fossa formed either by the accumulation of synovial fluid in a non-communicating bursa, distension of the bursa by the synovial fluid from the knee joint or by the herniation of the posterior part of capsule due to increased intra-articular pressure.[1] It is

characteristically located at the postero-medial aspect of knee joint and extends distally into the calf.[2] It is frequently associated with degenerative joint disease or may occur spontaneously without any intra-articular pathology.[3] The lateral presentation of Baker's cyst is relatively uncommon.[4,5,6]

In the present report, the cyst was related to the posterior aspect of lateral condyle of femur and extended proximally in the region of thigh. Another rare feature in the present study was that this cyst was present deep to popliteal vessels and tibial nerve while in the earlier reported cases it was superficial to them.[1,2,3] A thorough review of literature revealed only a few reports of lateral presentation of popliteal cysts.[4,5,6] Only a single case of anterior presentation of such a cyst and another of lateral Baker's cyst herniating through the iliotibial tract have also been reported.[5,7] An intramuscular cyst located within the vastus lateralis in MRI studies has been reported.[8]

The popliteal cyst in the present case arose laterally and communicated with the joint cavity. Such cysts on the lateral side of knee joint may be bursal or synovial in origin. The synovial membrane may not give an anatomical support thus giving rise to the cyst.[1,2,3] Since there was no evidence of any meniscal tear, the chances of a meniscal cyst can be ruled out.

When distended, one of the laterally placed bursae, especially that between the lateral femoral condyle and the tendons of popliteus or biceps femoris may present as a lateral cyst.[4,5,6] Interestingly a past study had detected a lateral cyst only in a CT scan.[7]

Due to its unusual presentation, it may mimic aneurysm, deep vein thrombosis, thrombophlebitis, hematoma, xanthoma, abscess or soft tissue tumour of the calf.[9] A proximate position of the cyst to the deep veins and neuro vascular structures also increases the chances of the involvement of the latter.

It may be presumed that this cyst could have arisen from an enlarged communicating bursa or possibly herniation of the synovial membrane through the posterior part of capsule. Admittedly, we could not carry out the histological study to arrive at a certain dignosis.

The anatomical knowledge of such cysts is also important during ultrasonographic studies.[10]

This paper attempts to highlight the unusual lateral position of popliteal cyst, the anatomical knowledge of which would be significant for clinicians and orthopedic surgeons.

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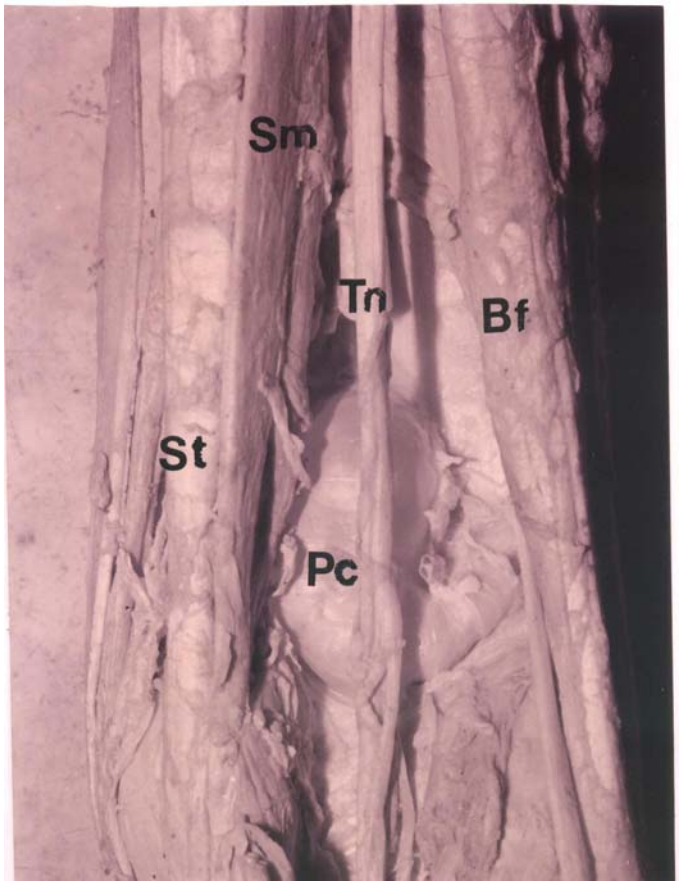

Figure.1 Photograph of dissected specimen showing:

Pc: Popliteal cyst

Sm: Semimembranosus muscle

St: Semitendinosus muscle

Bf: Biceps femoris muscle

Tn: Tibial nerve

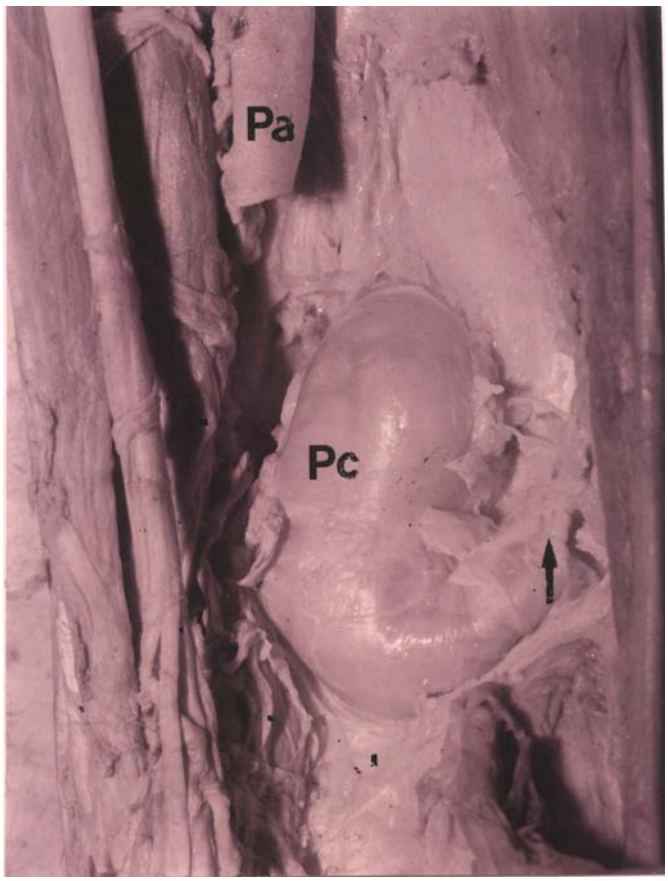

Figure.2 Photograph of dissected specimen showing:

Pa: Popliteal artery

Pc: Popliteal cyst

Lateral origin of popliteal cyst is shown with arrow (↑)