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(CASE REPORT)

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Giant Baker's Cyst open surgery excision: A case report

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Abstract

We report the case of a 55-year-old patient with a giant popliteal cyst associated with grade 2 gonarthrosis, causing pain and discomfort on knee flexion. MRI revealed a voluminous cloistered cystic mass communicating with the joint cavity, unmodified after contrast, measuring 200×80mm, associated with femorotibial and femoropatellar chondropathy.

the patient underwent complete open surgical excision of the cyst with repair of the capsule. After 06 months of follow-up no recurrence of the cyst was observed.

The aim of this article is to present a successful surgical management of a symptomatic giant popliteal cyst.

Keywords: Baker's cyst; Popliteal cyst; Knee; Rheumatoid arthritis; Synovium

1. Introduction

Baker's cyst, or popliteal cyst, is a fluid-filled mass that is a distention of a preexisting bursa in the popliteal fossa, most commonly the gastrocnemio-semimembranosus bursa. This bursa is unique in that it communicates with the knee joint, unlike other periarticular bursae, via an opening in the joint capsule posterior to the medial femoral condyle. Many have theorized that this opening creates a valve-like mechanism in the presence of effusion that contributes to the formation of these cysts in adults.

Popliteal cysts rarely manifest alone and are most often found in conjunction with other intra-articular pathologies and inflammatory conditions, such as osteoarthritis, meniscus tears, and rheumatoid arthritis (1). In this report, we present a giant Baker's cyst in a Rheumatoid arthritis (RA) patient expanding to the mid-thigh.

2. Case

A 55-year-old female patient noted a swelling in the popliteal fossa with knee flexion discomfort. Examination revealed a voluminous mass occupying popliteal fossa, soft and painless with no signs of inflammation reaching mid-thigh, we noted a full extension and 120° flexion of the knee.

MRI showed a voluminous cystic mass in T1 hypersignal, T2 hypersignal, unenhanced after intravenous injection of contrast medium, measuring 200mm in height and 80mm in anteroposterior diameter and communicating with the joint cavity. This collection is associated with femorotibial and femoropatellar pinching and meniscal degeneration [Fig1].

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Figure 1 MRI sagittal plane view: a voluminous cystic mass in T1 hypersignal 200×80mm

The patient is in prone position. The cyst is approached through the popliteal region by an S-shaped incision. The cyst is identified in the area between the medial head of the gastrocnemius and the semimembranosus tendon under the superficial fascia. The medial head of the gastrocnemius muscle is retracted to demonstrate the extent of the cyst and to identify the communication between the cyst and the joint. Dissection of the cyst reaches mid-thigh, popliteal pedicle and sciatic nerve identified and placed on lake, The synovial sac is separated from the often adherent surrounding tissues and followed to its origin in the posterior capsule. The cyst is dissected free from the posterior capsule and then removed. The capsular defect is closed with sutures [Fig2]. After 06 months, no recurrence was observed, with good healing of the surgical approach and normal joint amplitudes.

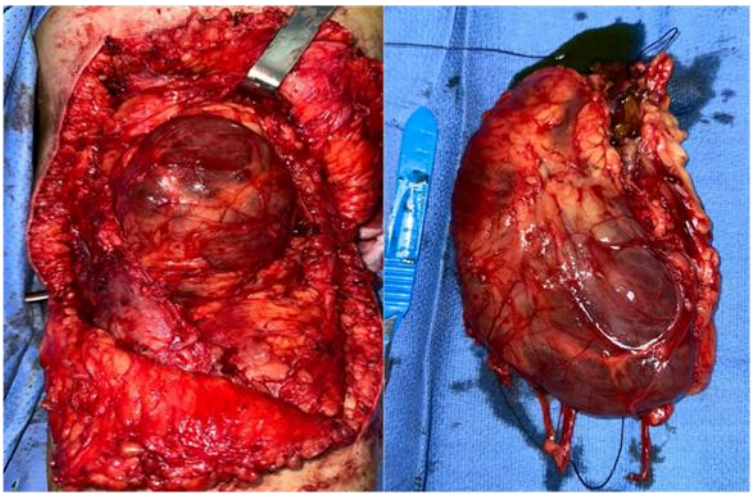

Figure 2 Excision of Baker's cyst by common posterior approach

3. Discussion

A swelling in the popliteal fossa is usually due to a cyst or solid tissue mass. The differential diagnosis is wide-ranging and includes both benign and malignant lesions.

Doppler and duplex ultrasonography can often detect vascular problems such as a popliteal artery aneurysm or deep vein thrombosis (DVT). Bone or soft-tissue tumours are rare in this region; most often, they are pigmented villonodular synovitis (PVNS), Ewing's sarcoma or osteosarcoma (2).

There are many treatment options for popliteal cysts, dictated by the underlying cause and associated condition. Sometimes no treatment or simple supportive measures result in spontaneous resolution of the cyst or at least reduction in associated symptoms. If not, both minimally invasive and surgical techniques are alternatives.

Ultrasound-guided aspiration with corticosteroid injection is a relatively low-risk and successful procedure for the treatment of knee osteoarthritis complicated with a popliteal cyst.

Another option is a similar procedure in which corticosteroid is injected directly into the popliteal cyst.

Acebes et al. reported successful results following aspiration of cyst contents and KS injection in osteoarthritis related cases [3]. In similar cases, Bandinelli et al. also reported successful results using US- guided steroid injection directly into the cyst and intraarticular steroid injection; both methods were considered effective [4]. In the treatment of Baker's cyst accompanied with RA, Hofman-Gonza´lez et al. stated that methotrexate application to the cyst may be an alternative method for patients with surgical risk factors [5].

Although conservative and minimally invasive measures are available to treat some of the conditions associated with popliteal cysts, not all may improve without invasive intervention. Currently, arthroscopic procedures are most commonly used to treat the conditions associated with popliteal cysts and to address cysts directly.

In rare cases, where the cyst remains symptomatic after treatment of the underlying disorder or where no origin has been found, surgical excision may be considered.

When surgical treatment of a popliteal cyst is indicated, three main surgical techniques are available, notably the common posterior approach, the posteromedial approach according to Hughston, and the medial intra-articular approach.

The popliteal cyst usually lies between the medial head of the gastrocnemius muscle and the semimembranosus tendon. The posterior as well as the posteromedial approach are suitable for removing the cyst. With a medial intra-articular approach only the communication of the cyst with the joint can be closed without removal of the cyst [6].

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflicts of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study

Authors' contributions

All authors contributed to the patient's care and to the drafting of the manuscript. All authors have read and approved the final version of the manuscript.

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