

# When the Baker's Cyst Slips and the Fascia Cruris Rips: A Story on Knee Ultrasound

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Dear Editor,

A 55-year-old female was seen for (progressively worsening) right knee pain in the past 2 weeks. She described the pain as “severe tension” on the posterior side of her knee, especially exacerbating by climbing stairs. She added that the pain sometimes radiated down along the posterior side of her leg as well. The medical history was otherwise noncontributory.

Physical examination revealed a mass (on deep palpation) in the posterior compartment. The palpation also triggered moderate pain radiating along the posterior and medial sides of the leg. The knee range of motion was painful, especially during maximum flexion. Ultrasound (US) examination showed that the posteromedial recess of the knee joint had slipped between the different layers of the posterior compartment of the leg, dissociating the fascia cruris from the epimysium of the medial head of the gastrocnemius muscle [Figure 1a and b]. Sonopalpation evoked pain along the posterior surface of the leg [Video 1]. Hence, excessive tension of the fascia cruris was considered to apply a mass effect, which in turn caused the radiating pain along the posterior leg. Accordingly, in light of the “sonographic explanation,” US-guided aspiration of the fluid collection was also done [Videos 2 and 3]. As expected, the aspiration of the Baker's cyst resulted in prompt reformation of the fascia cruris, and the patient also described significant/immediate pain relief.

Herein, we report a case of Baker's cyst extension between the epimysium of the medial head of the gastrocnemius muscle and the fascia cruris in the leg, and subsequent rupture with caudal dripping of the fluid – due to gravity – and progressive dissection of the connective layers [Figure 1c]. In general, Baker's cysts are one of the most common cystic lesions around

the knee joint and are typically caused by fluid distension of the gastrocnemius-semimembranosus bursa along the medial side of the popliteal fossa.<sup>[1]</sup> Oftentimes, they extend along the intermuscular planes around the knee joint and may enlarge in any direction.<sup>[2]</sup> However, in the literature, there are a handful of cases, in which the expanding cyst did not follow these planes and was dissected along an intramuscular route.<sup>[2]</sup> In addition to this condition, the clinical presentation of a ruptured or leaking Baker's cyst may also ensue, mimicking acute thrombophlebitis.<sup>[3]</sup>

In short, we underscore the convenient role of the US in the substantial examination of the knee joint,<sup>[4]</sup> not only for simple detection of a mass lesion but also to better understand the dynamic clinical scenario, i.e., the consistency/correlation between the exact anatomic/pathologic findings and the patient's complaints.<sup>[5]</sup> Needless to say, the onward interventional treatment can also be planned and carried out under US imaging/guidance. Of note, since US examination is really patient- and physician-friendly, immediate reassurance of the patient as regards the diagnosis and treatment can readily be done throughout all the aforementioned steps and has been shown to favorably impact the outcome.<sup>[6]</sup>

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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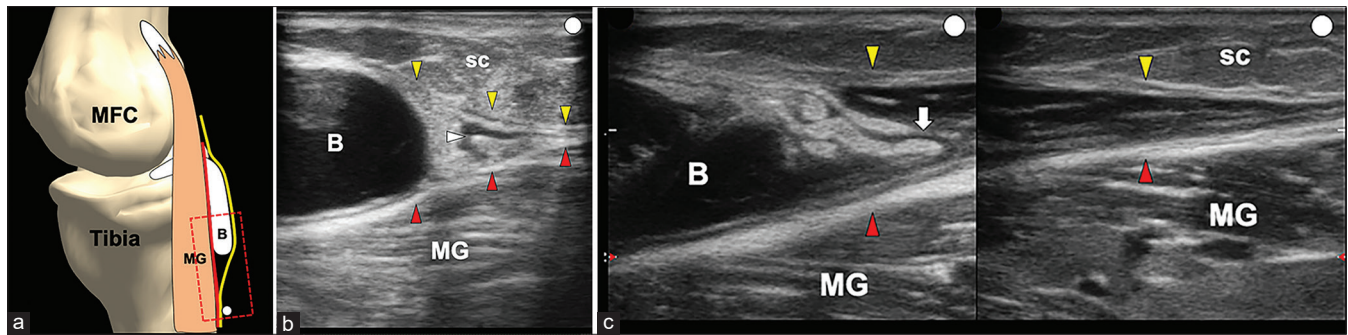
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**Figure 1:** (a) Schematic drawing of the fascial dissection with the red dotted rectangle representing the position of the transducer. (b and c) Long-axis sonogram. During the sonographic tracking of the fluid collection, the caudal edge of the Baker's cyst (B) is clearly identified as slipping between the epimysium (red arrowheads) of the medial head of the gastrocnemius muscle (MG) and the fascia cruris (yellow arrowheads) (a and b). Note the small effusion (white arrowhead) at the level of the "dissection point" between the two connective layers of the leg (b). At the same level, it is possible to check for a flap of the cyst wall (white arrow) associated with the spilling of the fluid between the epimysium (red arrowheads) of the medial head of the MG and the fascia cruris (yellow arrowheads) in case of a Baker's cyst (B) rupture (c). MFC: Medial femoral condyle, yellow line: Fascia cruris, Red line: Epimysium of the medial head of the gastrocnemius muscle, SC: Subcutaneous tissue

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### Conflicts of interest

There are no conflicts of interest.

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