

# Sudden calf swelling and pseudo-thrombophlebitis in rheumatoid arthritis: an uncommon emergency spot diagnosis



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## Dear Editor,

A 52-year-old male presented with atraumatic left side calf swelling for the last three months. The swelling had acute onset and increased gradually in size. He had a history of rheumatoid arthritis with treatment options limited to physiotherapy sessions and pain medication as he could not continue disease modifying anti-rheumatic drugs regularly. There was no history of co-morbidities like hypertension, tuberculosis, diabetes mellitus or bleeding diathesis. He neglected the swelling initially due to mild pain and little impact on activities of daily living till swelling increased to be apparent. The swelling was mildly tender, fluctuant and more noticeable in prone position (Figure 1) with no overlying raised temperature, intact distal neurovascular status and normal knee joint movements. The magnetic resonance imaging (MRI) bi-compartmental knee arthritis and also revealed hyperintense fluidfilled swelling on T2 weighted images with large fluid collection over the calf region (Figure 1c). The collection was noted to be communicating with the posterior knee joint and corresponded with common location of popliteal cyst. His color Doppler and duplex scan reports were normal and provisional diagnosis of ruptured Baker's cyst was made and knee aspiration was performed both for sampling and therapeutic relief. A straw-colored collection of about 800 mL was aspirated resulting in apparent subsidence of swelling. A two-week period of compression bandage and knee immobilizer was advised with daily follow up. No infective organism was isolated in culture and a milder recurrence of swelling after two days required the second

aspiration and reapplication of compression bandage. There was no recurrence noted in a follow up of 8 months.

Popliteal cyst (or Baker's cyst) is a swelling resulting from distension of gastrocnemius- semimembranosus bursa that communicates with the knee joint (1). Mostly these are present as asymptomatic lesion with mild pain or clinically notable lumps. The cyst may be associated with conditions like osteoarthritis, medial meniscus tear or inflammatory arthritis. The prevalence of complicated cyst is 6.8% with rupture reported as common complication (2). Ruptured cyst may occasionally lead to resultant calf swelling making it one of the differential diagnosis of an acute or chronic calf swelling and should be investigated accordingly (3). Acute pain and swollen as well as tender calf may mimic deep vein thrombosis (DVT) or compartment syndrome and results from cyst rupture with its contents seeping into inter-muscular spaces (1,4). MRI is excellent in demarcation of fluid within musculofascial spaces and also helps to rule out mimicking disorders like DVT, rupture of medial gastrocnemius head or plantaris muscle, intramuscular hematoma, vascular disorders or neoplastic growths among others (1,3,4). The clinical presentation of a sudden pain at back of the knee with or without erythema, and ecchymoses at calf and ankle and positive Homan's sign is also described as 'pseudothrombophlebitis' (3-5). Clinical suspicion and exclusion of compartment syndrome and DVT is critical in diagnosing 'pseudothrombophlebitis' and it should be kept in the differential diagnosis of any acute and significant calf swelling in rheumatoid arthritis.

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**Figure 1.** The clinical image of left calf swelling as compared to opposite side (a). The swelling is better appreciated in prone position (b). The T2-weighted MRI images in sagittal (c) view showing significant fluid collection in the calf region that is in communication with the native knee joint following rupture of popliteal cyst.

#### Authors' contributions

Conception and data collection- GSD, literature review and first draft- TP, final draft approval -GSD. The authors take full responsibility for the integrity of data and any dispute related to it in the future.

#### Ethical issues

Written informed consent was obtained from the patient who participated in the study.

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