RUPTURED BAKER’S CYST CAUSES ECCHYMOSIS OF THE FOOT

A DIFFERENTIAL CLINICAL SIGN

HERBERT P. VON SCHROEDER, F. MICHAEL AMELI, DIEGO PIAZZA, ALAN G. LOSSING

From the University of Toronto and the Wellesley Hospital, Toronto, Canada

Three consecutive patients with ruptured Baker’s cysts, verified by duplex scan, were found to have ecchymosis on the dorsum of the foot. The appearance of ecchymosis can be helpful in differentiating a ruptured cyst from cellulitis or deep-vein thrombosis.

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Cysts in the popliteal region were first described in 1840 by Adams, but were named after William Baker following his definitive description in 1877 (Baker 1877, 1885). They are often associated with osteoarthritis, rheumatoid arthritis, cartilage tears, trauma, or, less commonly, with infections or gout (Baker 1877, 1885; Burleson, Bickel and Dahlin 1956; Harvey and Corcos 1960; Maudsley and Arden 1961; Wolfe and Collof 1972) and result from a collection of synovial fluid in the gastrocnemius-semimembranosus bursa which communicates with the knee (Burleson et al 1956; Bryan, DiMichele and Ford 1967; Jayson and Dixon 1970). Signs and symptoms may include a local mass, pain and tenderness, peripheral swelling, stiffness and effusion of the joint, a positive Homan’s sign, and a limp (Burleson et al 1956; Maudsley and Arden 1961; Good 1964; Bryan et al 1967). The cyst may cause, or coexist with, thrombophlebitis of the leg (Beatty 1959; Bryan et al 1967), but this is more often a differential consideration (Perri, Rodnan and Mankin 1968). Other differential diagnoses include cellulitis, popliteal varices, aneurysm, haemangioma, and tumour.

We report ecchymosis as an additional sign of a ruptured Baker’s cyst; this may be of value in making the correct diagnosis.

CASE REPORTS

Case 1. A 25-year-old van driver, who had been diagnosed as having Reiter’s syndrome nine months earlier, presented with a two-week history of pain in the left knee and swelling for three days. He had a well-defined ecchymosis anterior to the lateral malleolus. The knee, calf and ankle were oedematous and the skin was erythematous. He was admitted to hospital with a presumed deep-vein thrombosis and cellulitis. Venography was normal and a duplex scan of the calf and popliteal fossa revealed a ruptured cyst (5.6 x 1.6 x 1.0 cm) and no evidence of deep-vein thrombosis. After two weeks of conservative management, the bruise on the foot was still present (Fig. 1) but the pain and oedema had resolved. A click was noted in the knee, and flexion was limited to 110°.

Case 2. A 48-year-old electrician gave a two-day history of pain in the left knee and a one-day history of calf swelling. He had suffered mild chronic pain in the left

H. P. von Schroeder, MD, Resident
Division of Orthopaedic Surgery, Mt Sinai Hospital, 600 University Avenue, Suite 476A, Toronto, Ontario, Canada M5G 1X5.
F. M. Ameli, FRCS, FRCSC, FACS, Associate Professor
A. G. Lossing, MD, FRCS C, Assistant Professor
D. Piazza, MD, Resident
Division of Vascular Surgery, The Wellesley Hospital, 160 Wellesley Street East, Suite 313, Toronto, Ontario, Canada M4Y 1J3.
Correspondence should be sent to Dr F. M. Ameli
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knee in the past. There was no history of recent fever, rheumatoid arthritis, venous thrombosis or trauma, although he had fallen 15 feet four years earlier and since then had experienced chronic pain in the right ankle. He had a mildly swollen and tender left calf, the knee was a little swollen, with no effusion, and radiography showed osteophytes at the joint line. Homan’s test was negative; full extension of the knee caused discomfort in the calf. Diffuse ecchymosis was present on the dorsum of the foot. A venogram was attempted but could not be performed because of inadequate veins in the foot. A duplex scan of the calf and popliteal fossa revealed a ruptured cyst (4.5 × 1.1 × 1.0 cm) and no evidence of deep-vein thrombosis. The symptoms gradually subsided with conservative management, the ecchymosis taking on a yellowish hue as it resolved.

Case 3. A 55-year-old man presented with a one-week history of swelling and pain in the right calf. He had suffered chronic pain in the right knee and was scheduled for arthroscopy. He also had a history of osteoarthritis of both elbows and of the left knee. On examination there was marked ecchymosis of the calf and ankle and the calf girth was increased. The knee and ankle joints appeared normal. A duplex scan showed a Baker’s cyst (10 × 3 × 2 cm) extending half-way down the calf with evidence of rupture, and no venous thrombosis. The symptoms improved with rest, elevation and analgesia.

DISCUSSION

These three patients were all thought at first to have a deep-vein thrombosis, despite the presence of ecchymosis at the initial examination. Ecchymosis, however, does not occur in cases of cellulitis or deep-vein thrombosis, and its recognition could have resulted in the correct diagnosis of a ruptured Baker’s cyst and the avoidance of venography. The duplex scan not only ruled out venous thrombosis but confirmed the presence of a Baker’s cyst.

The blood which caused the ecchymosis may have come from within the cyst, which can be haemorrhagic (Hench, Reid and Reames 1966; Bryan et al 1967), from the ruptured wall of the cyst, or from other soft tissues dissected by the extruded cyst contents.

The presence of ecchymosis of the foot, although non-specific, may be of value in diagnosing a ruptured Baker’s cyst.

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REFERENCES


