Baker's Cyst as a Clinical Presentation of Brucellosis

Brucella species are a well-known cause of infectious arthritis [1]. The relation between popliteal cysts and infectious arthritis due to candidal infection, aspergillus infection, or peripheral-joint tuberculosis has been previously described [2–4]. The occurrence of a popliteal cyst as a presenting manifestation of infection has been reported in cases of Aspergillus fumigatus infection and peripheral joint tuberculosis [3,4]. However, to our knowledge, the occurrence of a Baker's cyst as the clinical presentation of brucellosis has not been described.

A previously healthy 60-year-old male stockbreeder was admitted to the hospital because of a 5-month history of sweat, low-grade fever, and swelling in the popliteal area of his right knee. He recalled ingestion of raw milk products. Physical examination revealed a temperature of 37.3°C, mild effusion in his right knee, and swelling and tenderness in the popliteal area of that knee; other findings were unremarkable. Laboratory evaluation demonstrated an elevated erythrocyte sedimentation rate (Westergren method; 85 mm/h) and normal or negative values for rheumatoid factor, antinuclear antibodies, and hepatic and renal function.

The patient was treated daily with streptomycin (1 g), pyrazinamide (2 g), isoniazid (300 mg), and rifampin (600 mg) for 2 months. Therapy with isoniazid and rifampin was continued for the next 4 months. His symptoms decreased, the swelling disappeared, and the radiological opacity cleared over the next 8 weeks. No change in his condition was noted at follow-up 6 months later.

Although patients with tuberculosis have chest wall abscesses and may have associated mediastinal lymphadenopathy, to our knowledge a chest wall mass transmitting aortic pulsations has not been described. Pulsatile swelling in the upper parasternal region is considered to be due to an aortic aneurysm. Rigidity of the bony cage makes appreciation of the expansile nature of the pulsations difficult. The association of luetic aortic aneurysm with pulmonary tuberculosis has been reported [4]. CT of the chest is a sensitive technique for demonstrating tuberu]cular mediastinal lymphadenopathy [5]. Mediastinal tubercular lymphadenopathy should be considered in the differential diagnosis of an upper parasternal swelling that is pulsatile.

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Arthrocentesis of the right knee yielded 20 mm² of a moderately inflammatory liquid (leukocyte count, 8.2 × 10⁶/L [65% polymorphonuclear leukocytes] and glucose level, 62 mg/dL; no microcrystals were detected. A rose bengal plate agglutination test was positive. Blood cultures were negative. Cultures of the synovial fluid yielded Brucella abortus. Findings of ultrasonography and CT of the right knee were consistent with the presence of a popliteal cyst.

Treatment with im streptomycin (1 g/d) plus po doxycycline (100 mg twice a day) was started. From the beginning of treatment, closed-needle drainage of the right knee was performed once a day. Clinical evidence of the effusion and Baker's cyst dissapeared following 1 week of treatment, and the patient was discharged from the hospital. However, 10 days later he was readmitted because of a flare-up of arthritis and swelling in the popliteal area of his right knee. A surgical procedure consisting of open drainage of the knee and resection of the Baker's cyst was performed. Because new cultures of synovial fluid yielded B. abortus, treatment with streptomycin and doxycycline was maintained (for 21 days and 90 days, respectively). Four months after discontinuation of antibiotic therapy, the patient remained asymptomatic, and findings of MRI of the knee and popliteal area were normal.

Popliteal cysts are synovial cysts that arise in the medial aspect of the popliteal fossa. They are caused by a communication between the posterior portion of the joint capsule and the normal gastrocnemius-semimembranosus bursa. Conditions associated with increased intraarticular pressure, such as knee effusion, can result in a popliteal cyst [5]. These conditions include infectious [2–4] as well as noninfectious diseases such as rheumatoid arthritis, gout, pigmented villonodular synovitis, sarcoidosis, and dialysis amyloidosis [6–10].
Human brucellosis is commonly associated with musculoskeletal manifestations. Apart from sacroiliitis and spondylitis, peripheral arthritis presenting as monarthritism or asymmetric peripheral oligoarthritis has been commonly described [1]. However, to our knowledge, the occurrence of a Baker’s cyst as the first sign of brucellosis has not been described. We feel that brucellosis must be considered when a patient presents with a Baker’s cyst and a constitutional syndrome, especially if the patient has risk factors for the development of this infectious disease.

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Tuberculosis-Related Retinal Vasculitis in an Immunocompetent Patient

In recent years, tuberculosis has reemerged as a serious public health problem [1], raising the possibility that rare manifestations of the disease, such as ocular tuberculosis, may also become more prevalent.

We describe a previously healthy 31-year-old man with retinal vasculitis associated with systemic tuberculosis. Mycobacterium tuberculosis was isolated from a cervical lymph node biopsy specimen and sputum. A test for antibody to HIV was negative. Ophthalmologic examination revealed normal visual acuity in both eyes. Preretinal hemorrhage, exudates, and periphlebitis were observed on the retina of the right eye (figure 1).

Behçet’s syndrome, multiple sclerosis, systemic vasculitis, and syphilis were clinically and biologically ruled out as potential causes of retinal vasculitis. The patient was treated with a 6-month regimen of isoniazid, rifampin, ethambutol, and pyrazinamide for 2 months followed by isoniazid and rifampin for 4 months. Prednisone (30 mg/d) was administered for 2 weeks as treatment for peripheral ischemic areas that had appeared. Preventive laser photocoagulation of these areas was performed. Seven months after treatment was begun, fluorescein angiography showed complete recovery and no residual lesions.

Retinal vasculitis may be primary or secondary to a variety of systemic disorders [2]. It has been reported in association with neurological diseases, systemic inflammatory diseases, malignancies, and infectious diseases such as syphilis, endocarditis, malaria, toxoplasmosis, and fungal and viral infections. Samples of retinal vasculitic lesions are usually not available for bacteriologic or histologic examination. Therefore, the diagnosis of tuberculosis-related retinal vasculitis on the basis of the clinical picture is presumptive. In our case the systemic tuberculosis, the exclusion of other possible etiologies, and the favorable evolution of the disease, such as ocular tuberculosis, may also become more prevalent.

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Clinical Infectious Diseases 1996;22:872–4
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1058-4838/96/2205-0048$02.00

Figure 1. Fluorescein angiogram of the right eye of a 31-year-old man with retinal vasculitis associated with systemic tuberculosis revealed a hemorrhage and exudate (A) and a periphlebitic lesion (B).