Case report 873

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Fig. 1. Lateral radiograph of the knee shows a large soft tissue density consistent with the presence of a suprapatellar effusion (diamond).

Fig. 2. Sagittal T2-weighted fast spin echo magnetic resonance image of the knee (TR 4000 ms/TE 108 ms effective, echo train length 8). The suprapatellar effusion (solid arrows) outlines a large mass in the retro-patellar region (arrowhead). The synovial mass also extends posteriorly (open arrows).

Fig. 3. A Axial T1-weighted spin echo magnetic resonance image of the knee at the level of the distal femur (TR 500 ms/TE 16 ms). The synovial mass (arrows) has the same signal intensity as the subcutaneous fat. B T2-weighted fast spin echo (TR 4000 ms/TE 108 ms effective, echo train length 8) image at the same level confirms the fat-signal characteristics of the synovial mass.

Fig. 4. Transverse sonogram of the suprapatellar recess. The sonolucent effusion (asterisk) outlines the hyperechoic villous synovial mass (arrows).

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Clinical information

A 68-year-old woman presented with a 2-year history of a mass in the left knee with pain and swelling. During the past 3 months, she had noted an increase in pain and swelling of the knee. She denied any fluctuation in size of the mass and had no history of skin rashes. No other joints were involved.

On physical examination, the patient had a large suprapatellar mass that was soft to palpation. She had no clinical signs of an effusion. The Westergren sedimentation rate was 41 mm/h. The peripheral cell count and differential, electrolyte profile, rheumatoid factor and anti-nuclear antibodies, renal function studies, and liver enzymes were normal. Screening for Lyme disease was also negative.

Plain radiographs showed an extra soft tissue density in the suprapatellar bursa consistent with the presence of an effusion or a mass (Fig. 1). There was mild joint space loss. Magnetic resonance (MR) imaging showed a large effusion with homogeneous signal intensity on all pulse sequences (Figs. 2, 3). There was marked synovial thickening throughout the knee joint. The synovium had intermediate signal intensity on all pulse sequences. In addition, there was a large intra-articular soft tissue mass in the inferior half of the patellofemoral compartment (Fig. 2). The mass was inhomogeneous and irregular in appearance with multiple villous projections. In the basal portions, there were well-defined circular regions with MR signal findings characteristic of fat (Fig. 3). There was also extension of the mass into a popliteal cyst (Fig. 2).

The ultrasonogram confirmed the presence of a large joint effusion and thickened synovium (Fig. 4). As demonstrated on the MR examination, there was a large mass with numerous villous projections into the joint space. The basal portions of the mass contained well-defined regions of increased echogenicity consistent with fat. Examination of the popliteal fossa demonstrated that the popliteal cyst contained a similar mass.

Preoperative imaging suggested that an open synovectomy might be required to completely remove the abnormal synovium. The patient underwent a total synovectomy of the knee.