

Musculoskeletal case 28. Diagnosis

Subsynovial hemangioma

On magnetic resonance imaging, the sagittal T_1 -weighted sequence (Fig 3, left) demonstrated a poorly delineated nodule at the anterior aspect of the knee, cranial to the patella (arrows), with signal intensity similar to that of adjacent muscle. In Fig. 3, centre (axial view), and Fig. 3, right (sagittal view), after the administration of contrast and using fat-saturated T_1 -weighted images, the nodule (arrows) is better visualized and demonstrates an irregular, thick, enhancing rim with an area of lower signal centrally.

Subsequently, air was injected into the knee joint, and CT images were obtained with infusion of intravenous contrast (Fig. 4 left [axial], and Fig. 4, right [sagittal reformat]). This was done to evaluate the relationship of the lesion to the synovial reflections. The suprapatellar bursa is well distended and the nodule previously seen on computed tomography can be seen very closely opposed to the subsynovial region of the supralateral aspect of the suprapatellar bursa

(white arrows). A small amount of extravasated gas adjacent to the femur (open white arrow) is present. The lesion is enhanced. At surgery, this nodule was resected and found to represent a subsynovial hemangioma.

Synovial and subsynovial hemangiomas are rare benign lesions that are classified by many pathologists as hamartomas.¹ Hemangiomas are not unusual in the musculoskeletal system. A very small number of these are either intra-articular or juxta-articular (subsynovial) hemangiomas. These are of particular interest since their position makes them prone to intra-articular hemorrhage. They may bleed spontaneously or with minimal trauma, and because of this most patients present before they reach 16 years of age.^{1,2} Multiple episodes of intra-articular hemorrhage can predispose the joint to early degenerative changes and the appearance can at times be very similar to that of the arthropathy seen in hemophilia.²

The knee is by far the most commonly involved joint. Typically, the anterior aspect is involved, as in this case.³ Many other joints have been

reported to be affected, as well as tendon sheaths. The majority of these hemangiomas are of the cavernous variety, and no gender predilection has been reported.⁴ Findings on plain films are usually sparse apart from the presence of a large joint effusion, although occasionally calcified phleboliths may be found within these lesions.¹ If the lesion is particularly large, focal changes in the adjacent bone such as erosion can occasionally be present. Arthrography may show a filling defect if the lesion protrudes in the joint, although this is exceptional. Magnetic resonance imaging is the favoured method for detecting these lesions.¹ The findings are not entirely characteristic, although a subsynovial location can be suggestive. Angiography, although rarely performed, shows evidence of abnormal small blood vessels and intense enhancement.¹

Other diagnostic considerations in patients with recurrent bloody effusions include pigmented villonodular synovitis, synovial osteochondromatosis, rheumatoid arthritis, gout and lipoma arborescens.^{1,2}

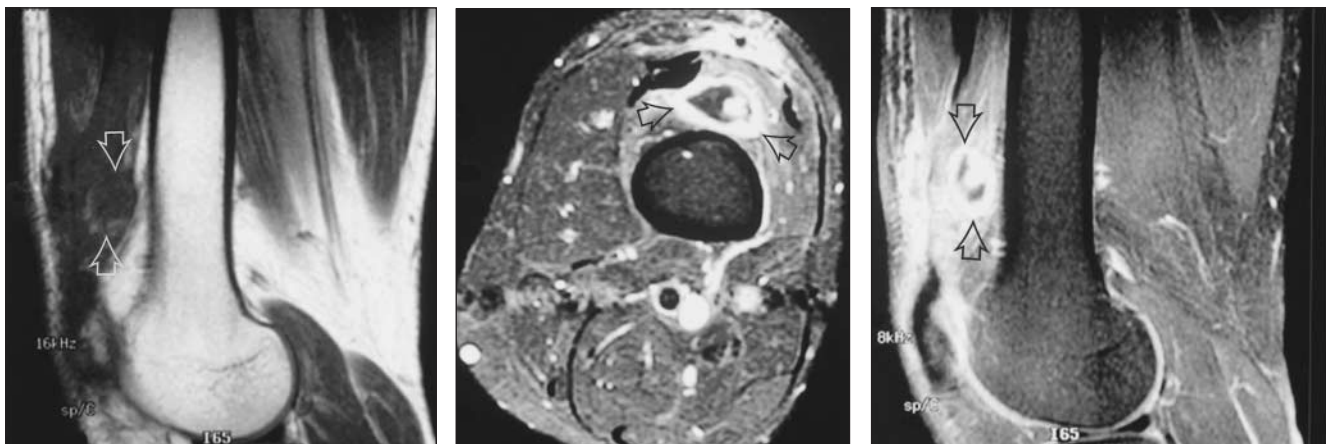


FIG. 3.

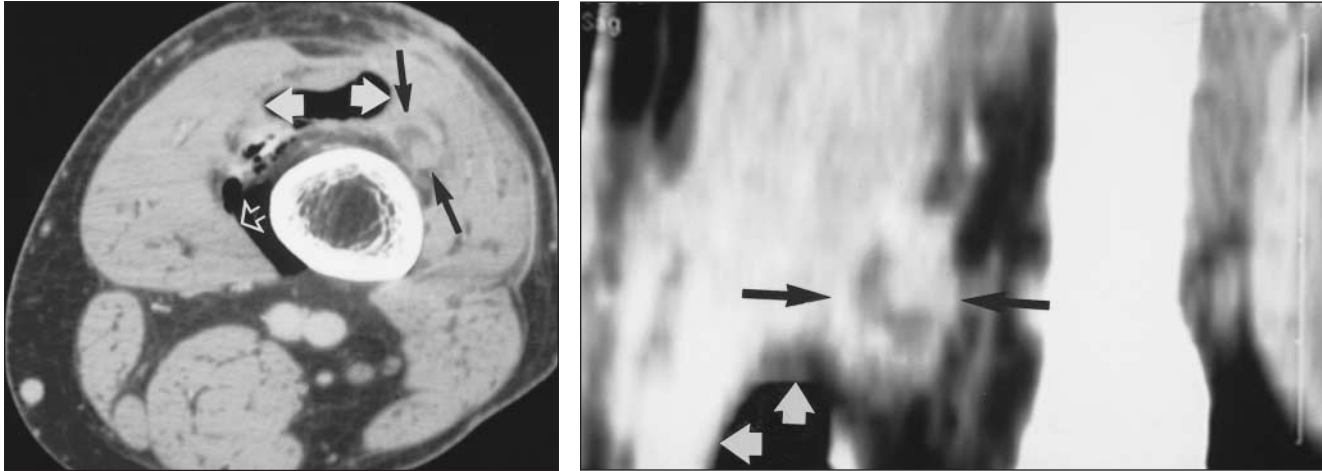


FIG. 4.

References

1. Greenspan A, Azouz EM, Matthews J, Décarie JC. Synovial hemangioma: imaging features in eight histologically proven cases, review of the literature, and differential diagnosis. *Skeletal Radiol* 1995;24:583-90.
2. Cotten A, Flipo RM, Herbaux B, Gougeon F, Lecomte-Houcke M, Chastanet P. Synovial haemangioma of the knee: a frequently misdiagnosed lesion. *Skeletal Radiol* 1995;24:257-61.
3. Llauger J, Monill JM, Palmer J, Clotet M. Synovial hemangioma of the knee: MRI findings in two cases. *Skeletal Radiol* 1995;24:579-81.
4. Devaney K, Vinh TN, Sweet DE. Synovial hemangioma: a report of 20 cases with differential diagnostic considerations. *Hum Pathol* 1993;24:737-45.

LE PRIX MACLEAN-MUELLER

À l'attention des résidents et des directeurs des départements de chirurgie

Le *Journal canadien de chirurgie* offre chaque année un prix de 1000 \$ pour le meilleur manuscrit rédigé par un résident ou un fellow canadien d'un programme de spécialité qui n'a pas terminé sa formation ou n'a pas accepté de poste d'enseignant. Le manuscrit primé au cours d'une année civile sera publié dans un des premiers numéros de l'année suivante et les autres manuscrits jugés publiables pourront paraître dans un numéro ultérieur du Journal.

Le résident devrait être le principal auteur du manuscrit, qui ne doit pas avoir été présenté ou publié ailleurs. Il faut le soumettre au *Journal canadien de chirurgie* au plus tard le 1^{er} octobre, à l'attention du Dr J.P. Waddell, corédacteur, *Journal canadien de chirurgie*, Division of Orthopaedic Surgery, St. Michael's Hospital, 30 Bond St., Toronto (Ontario) M7B 1W8.

