

MUSCULOSKELETAL IMAGES. SOFT-TISSUE MASS AT THE SITE OF A PREVIOUS TOTAL KNEE ARTHROPLASTY

A 65-year-old woman presented with an 18-month history of an enlarging soft-tissue mass of the right lateral knee. She had undergone a ce-

mented total knee arthroplasty of the same knee 8 years previously. The mass was restricting the range of motion but the knee was not painful.

Plain anteroposterior and lateral radiographs (Fig. 1) demonstrated a large soft-tissue mass laterally at the knee joint with an associated pe-



FIG. 1. An anteroposterior radiograph of the right knee illustrates a cemented semi-constrained knee arthroplasty in place. A rounded mass is seen within the soft tissues of the lateral aspect of the knee, contiguous with the underlying arthroplasty. No definite periprosthetic lucency or evidence of complication of the arthroplasty can be seen.

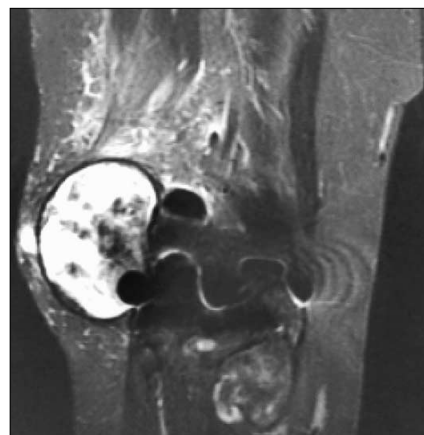
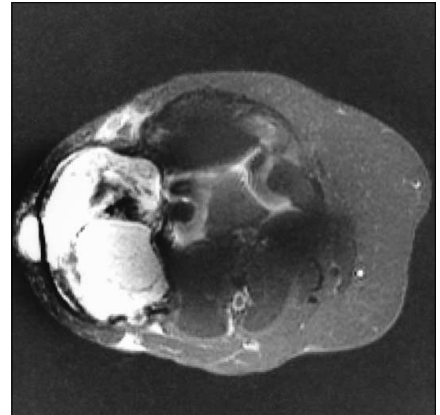
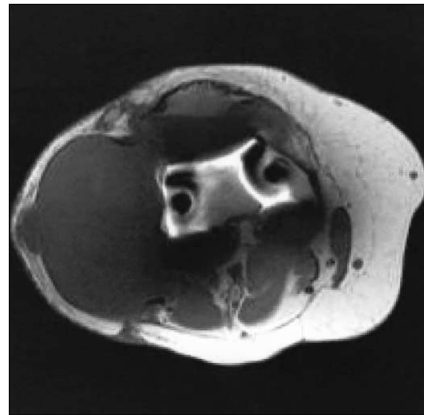


FIG. 2. On magnetic resonance imaging, axial fast spin-echo T_1 -weighted (top left) and fast inversion recovery (T_2 -weighted) (top right) images illustrate a large, lobulated mass with low T_1 - and predominantly increased T_2 -weighted signal characteristics. Heterogeneous internal debris of low T_2 -weighted signal intensity is seen within the anterior portion of the mass and a low intensity peripheral capsule is seen along the periphery of the lesion. A coronal fast inversion recovery image (bottom) again illustrates the large complex mass, which is centred along the lateral aspect at the joint prosthesis, extending into the subcutaneous compartment of the limb. Artifacts related to the metal joint prosthesis are present.

Section Editor: Robert S. Bell, MD

Submitted by Anthony M. Griffin, BSc,* Lawrence M. White, MD,† R. Kandel, MD,‡ and Jay S. Wunder, MD*

*University Musculoskeletal Oncology Unit, †Department of Medical Imaging and ‡Department of Pathology, Mount Sinai Hospital, University of Toronto, Toronto, Ont.

Submissions to *Surgical Images*, musculoskeletal section, should be sent to Dr. Robert S. Bell, University Musculoskeletal Oncology Unit, Ste. 476, 600 University Ave., Toronto ON M5G 1X5; fax 416 586-8397.

© 2000 Canadian Medical Association



FIG. 3. Photomicrograph showing the structure of the fibrous capsule with adherent acellular fibrinous exudate (hematoxylin–eosin stain; original magnification $\times 640$).

riosteal reaction in the distal femur and proximal tibia. Magnetic resonance imaging (Fig. 2) showed a heterogeneous mass laterally and a second mass on the medial tibial side of the joint. Open biopsy was undertaken and the specimen was reported as comprising a fibrinous exudate with no evidence of malignant disease (Fig. 3).

The development of a soft-tissue mass in response to wear debris after total joint arthroplasty is a well-recognized complication. Although the risk of a sarcoma developing at the site of a total joint replacement is small, a definitive diagnosis must be made before proceeding with revision surgery. n