A healthy 70-year-old woman presented with a 3-month history of a slowly enlarging soft-tissue mass in the left hip. Physical examination revealed a 7-cm soft-tissue mass in the subcutaneous tissues over the lateral aspect of the left hip. There was minimal tenderness to palpation and no overlying skin changes.

A plain film showed a soft-tissue mass just lateral to the greater trochanter of the left femur, with dense central and irregular peripheral spiculated mineralization (Fig. 1). Computed tomography also showed the soft-tissue mass with central calcification within the subcutaneous fat of the lateral left hip (Fig. 2). Both T1-weighted coronal (Fig. 3) and T2-weighted axial (Fig. 4) magnetic resonance images showed a mass measuring $6.5 \times 4.5 \times 4$ cm with heterogeneous signal intensity, extending down to the fascia lata. Edema was seen extending along the fascia, but there was no gross transfascial spread into underlying muscle. The mass showed increased uptake on bone scanning. On the basis of these findings, the differential diagnosis would include soft-tissue dystrophic ossification.

Section Editor: Robert S. Bell, MD
Submitted by Dawn H. Pearce, MD,* Lawrence M. White, MD,* Jay S. Wunder, MD†
*Joint Department of Medical Imaging, Mount Sinai Hospital and University Health Network, University of Toronto, and the †University Musculoskeletal Oncology Unit, 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.

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(myositis ossificans) and soft-tissue osteosarcoma. The presence of “mature” dense ossification centrally and “immature” irregular mineralization peripherally, as illustrated in this case, favours a soft-tissue osteosarcoma.

Biopsy revealed high-grade (3/3) osteosarcoma (Fig. 5, hematoxylin–eosin stain, original magnification × 640). The patient underwent wide surgical excision of the mass without complication followed by adjuvant chemotherapy.

Extraskeletal osteosarcomas are rare malignant lesions that account for about 1% of all soft-tissue sarcomas. The most common sites include the thigh and buttocks. They are aggressive tumours complicated by local recurrences and metastases, most commonly to the lung.