

UNIVERSITY OF ROCHESTER MEDICAL CENTER
DEPARTMENT OF IMAGING SCIENCES

Imaging Sciences Interesting Cases

Case 599

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CLINICAL PRESENTATION: The patient is a 14-year-old girl with painless posterior right thigh mass.

IMAGING FINDINGS: Consistent with liposarcoma, however the signal pattern for fat is not seen.



Figure 1: Lateral view of the right femur shows a well defined soft tissue mass with well defined margins. No calcifications/ossifications are seen.



Figure 2: Sagittal T1WI MR image shows intermediate intensity lesion.



Figure 3: Sagittal T2WI MR FS image shows hyperintense septated soft tissue mass in the posterior right thigh.



Figure 4: Sagittal T1 C+ MR shows heterogeneous, enhancing soft tissue mass with septations in the posterior thigh.

DIAGNOSIS: Grade I myxoid liposarcoma.

DISCUSSION: Liposarcoma is the second most common soft tissue sarcoma in adults. It accounts for approximately 16-20% of all malignant soft tissue tumors. Liposarcoma is a malignant tumor of mesenchymal origin with lipoblasts. At histologic analysis, liposarcomas may be classified as well differentiated, myxoid, pleomorphic, or round cell.

Myxoid liposarcoma is the second most common subtype of liposarcoma, representing 30-40% of all liposarcomas in the extremities. It occurs most commonly in the lower extremity, particularly the thigh. Myxoid liposarcoma occur in the intermuscular fascial planes or deep-seated areas. Most patients with these tumors are aged 18-67 years. Patients with liposarcoma in the extremities tend to be a little younger than those with tumors in the retroperitoneum.

Most common signs and symptoms include a painless mass. If symptoms do occur, they are usually from compression of neurovascular bundle or abdominal organs. Other clinical presentation is weight loss despite soft tissue mass. Biologic behavior and prognosis is determined by histologic type and size. Metastases are found in approximately 50% of the patients and overall 5-year survival is 60%.

Imaging findings:

Radiographs: Nonspecific soft tissue mass. Ossification within the tumor may occur about 10% of the time.

CT: Heterogeneous soft tissue mass with fatty and soft tissue components. Fat is frequently not detected radiologically. Liposarcoma enhances on CECT.

MR: Since the fat content is often less than 10-25% of the tumor volume, MRI may not show the typical features of lipomatous tumor. A myxoid liposarcoma that contains abundant water can mimic a cystic lesion. Contrast-enhanced MRI is useful in distinguishing cystic or necrotic lesions from solid, cellular lesions. Myxoid liposarcoma exhibits low signal intensity on non-enhanced T1WI and high SI on T2WI. In contrast, lipomas and well-differentiated liposarcomas typically show high SI secondary to the relatively high fat content.

Myxoid liposarcomas has three enhancement patterns: homogeneous, heterogeneous, and no enhancement.

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