

Primary Lymphoma of Skeletal Muscle

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A 16-year-old girl presented with persistent pain and medial knee swelling 6 weeks after a sports injury. Physical examination revealed no effusion, instability, or locking of the knee, but a mass was found in the medial thigh with skin induration. MR imaging showed enlargement of the sartorius muscle with infiltration of the surrounding fascial planes; the lesion had low signal intensity compared with that of uninvolved muscle on T1-weighted images and high signal intensity on T2-weighted images (Fig. 1A). CT showed involvement of the entire sartorius muscle from origin to insertion; attenuation was similar to that of uninvolved muscle (Fig. 1B). A needle biopsy showed sheets of dishesive malignant cells with irregular nuclei, prominent nucleoli, and scant cytoplasm (Fig. 1C). Single necrotic cells and mitotic figures were plentiful. Immunohistochemistry was positive for leukocyte common antigen and T-cell-associated antigens. The final clinicopathologic diagnosis was anaplastic large cell lymphoma of T-cell origin, primary to the sartorius muscle.

Lymphoma arising in skeletal muscle is rare, comprising perhaps 0.5% of non-Hodgkin's lymphomas that arise in extranodal sites [1]. Lymphoma spreads by infiltration of individual malignant cells that lack extracellular stroma and intercellular junctions, resulting in diffuse enlargement of involved structures and a pattern of growth that does not respect fascial boundaries. Therefore, involvement of more than one muscle compartment over a long segment of the extremity is typical [2]. Radiography is usually unremarkable, but CT and MR imaging show diffuse enlargement with or without infiltration of the adjacent fat planes. Attenuation on CT is similar or slightly decreased compared with that of uninvolved muscle [2, 3]; enhancement after IV contrast injection may be inapparent [4]. Signal intensity on MR imaging is homogeneous and similar to that of skeletal muscle on T1-weighted images but increased on T2-weighted images; enhancement after IV gadolinium is homogeneous [2, 3, 5]. Sonography shows an ill-defined hypoechoic mass with coarsening of fibroadipose septa and swelling of muscle bundles [6].

The treatment of choice for non-Hodgkin's lymphoma involving skeletal muscle depends on the specific histology and anatomic extent of the lesion; treatment typically involves chemotherapy, radiation therapy, or surgery, alone or in combination [1, 6].

References

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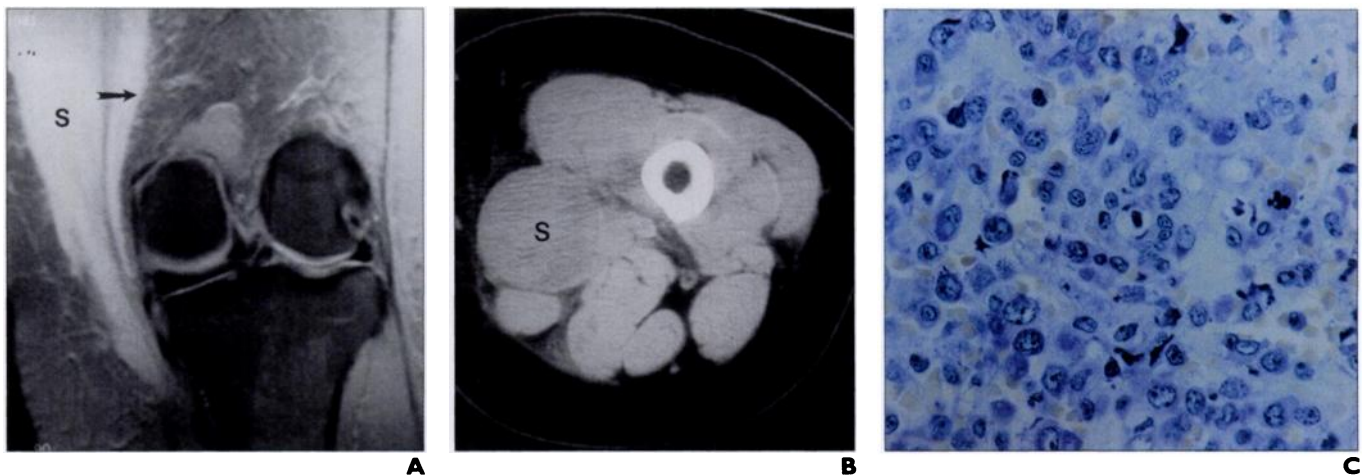


Fig. 1.—16-year-old girl with primary lymphoma of skeletal muscle.
A. Coronal T2-weighted MR image shows enlargement of sartorius muscle (S) with infiltration of adjacent fascial planes (arrow) and high signal intensity.
B. CT scan shows enlargement of sartorius muscle (S) at mid thigh level.
C. High-power photomicrograph highlights characteristic irregular nuclear morphology in large cell lymphoma. (Giemsa stain, high power)

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