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TEST YOURSELF: ANSWER

Slowly enlarging gluteal mass

Olivia J. Thomas[1] · Krista A. Goulding[2] · Jonathan A. Flug[2] · Idris T. Ocal[2] · Jeremiah R. Long[2]

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Discussion

MRI shows a circumscribed ovoid mass within the left gluteus maximus muscle. T1-weighted imaging shows heterogeneous areas of signal intensity both similar to skeletal muscle and hyperintense skeletal muscle. T2-weighted imaging shows heterogeneous areas of signal intensity higher than skeletal muscle but similar to and slightly lower than the subcutaneous fat. Fat-suppressed sequences show sizeable areas of high T1 and T2 signal which suppress, compatible with intralesional fat (Figs. 1 and 2). Post contrast T1-weighted imaging reveals extensive vascularity throughout the mass (Fig. 2). Following resection, the cut gross tumor revealed a tan to bright yellow rubbery appearing cut surface and measured 8.5 cm in greatest dimension. High power histopathological micrograph shows bland spindle cells with elongated nuclei, uniform chromatin, thick ropey collagen, and mature adipocytes (Fig. 3).

When entertaining a diagnosis of spindle cell lipoma (SCL) for a fat-containing enhancing soft tissue mass, differential considerations include hibernoma, myofibroblastoma, atypical lipomatous tumor, well-differentiated liposarcoma, and liposarcoma [1–3]. Owing to its variable cellular and collagen content, SCL can show a wide spectrum of imaging appearances [1–4]. Importantly for the radiologist, SCL can present with a wide spectrum of intralesional fat (ranging from 0 to 95%), with the most common composition being 50–90% [1, 2, 4]. Enhancement of the non-adipose component of SCL is a consistent finding though can be variable in its intensity [1, 2, 4]. As such, the imaging appearance of SCL invariably overlaps with other benign and malignant soft tissue masses and requires pathologic assessment for final diagnosis [2–4].

SCL is classically described as a benign, slow growing, well-circumscribed mass in the subcutaneous tissue of the posterior neck, back, and shoulders found in men ages 45 to 65 years; however, these tumors have been reported in a wide variety of locations [1–3, 5, 6]. Women are more likely to present with SCL at a younger age and in a broader range of locations, including the extremities and face [7]. It is estimated that SCL accounts for 1.5% of all lipomatous neoplasms [5]. Our patient was a 62-year-old male who presented with a slowly enlarging, palpable gluteal mass of 4 years' duration that caused pain with prolonged sitting; it was previously twice evaluated by MRI and originally diagnosed as a schwannoma. While our patient's slow tumor growth, gender, and age fit well for SCL, the tumor's deep intramuscular location in the lower extremity was atypical. Initially, an ultrasound-guided percutaneous biopsy showed

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Diagnosis: Spindle cell lipoma within the left gluteus maximus muscle.

✉ Olivia J. Thomas
thomas.olivia@mayo.edu

Krista A. Goulding
goulding.krista@mayo.edu

Jonathan A. Flug
flug.jonathan@mayo.edu

Idris T. Ocal
ocal.tolgay@mayo.edu

Jeremiah R. Long
long.jeremiah@mayo.edu

[1] Mayo Clinic Alix School of Medicine, 13400 East Shea Boulevard, Scottsdale, AZ 85259, USA

[2] Mayo Clinic Arizona, 5777 East Mayo Boulevard, Phoenix, AZ 85054, USA

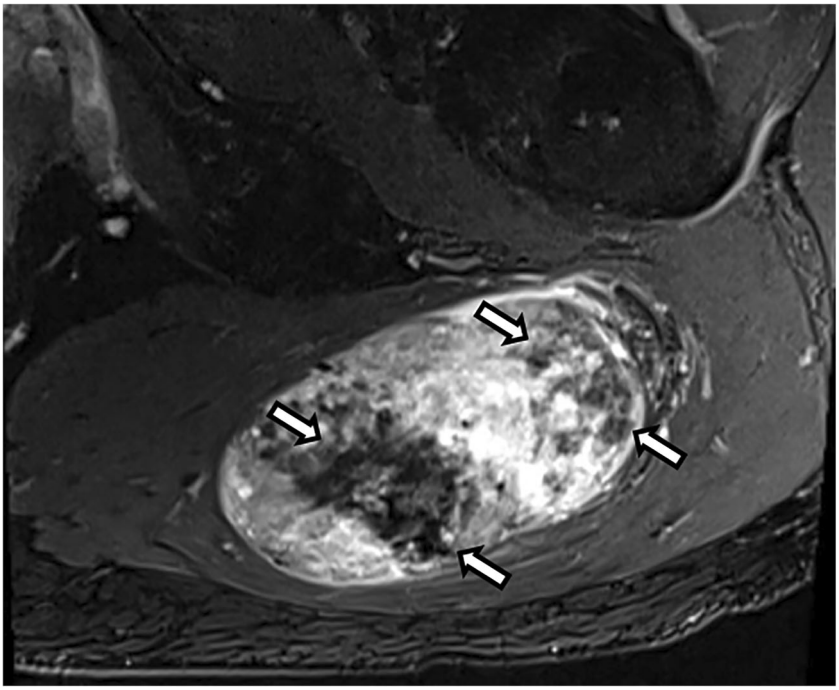

Fig. 1 Axial T2-weighted MRI with fat suppression with areas of low signal intensity intralesional fat demarcated by the arrows

findings consistent with a myofibroblastoma. With this presumptive diagnosis, the patient underwent a successful marginal surgical excision. The resected specimen showed a mixture of mature adipocytes, bland spindle cell short bundles of eosinophilic collagen, and negative desmin staining, which differentiated it from a myofibroblastoma and confirmed the diagnosis of SCL.

In summary, SCL is a benign neoplasm without malignant potential which can be both diagnosed and treated by surgical excision. A highly variable imaging appearance makes this entity challenging to differentiate from other fat-containing enhancing soft tissue tumors prospectively and therefore requires histologic analysis for definitive diagnosis.

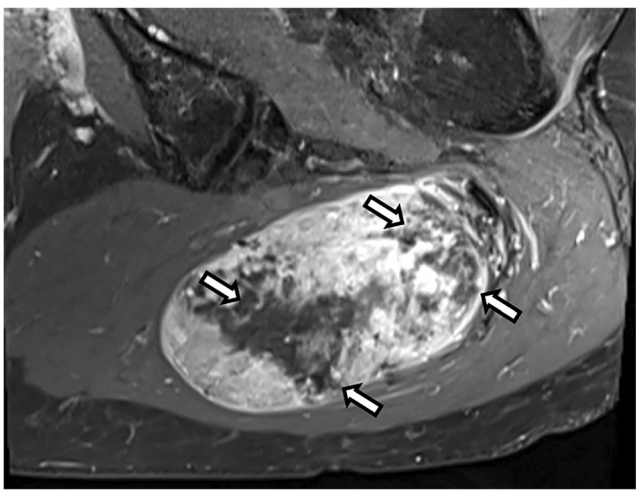

Fig. 2 Axial post IV contrast T1-weighted MRI with fat suppression with areas of low signal intensity intralesional fat demarcated by the arrows

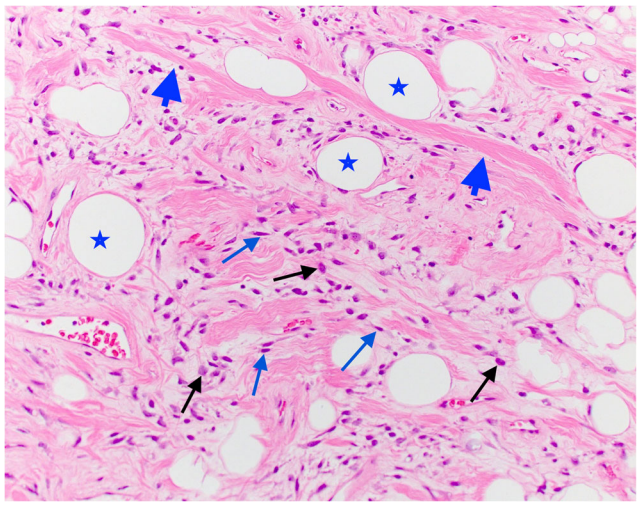

Fig. 3 Histopathological micrograph of the resected tumor (200× power hematoxylin and eosin stain) with bland spindle cells with elongated nuclei (blue arrow), uniform chromatin (black arrow), thick ropey collagen (blue arrowhead), and mature adipocytes (blue star)

Declarations

Conflict of interest The authors declare no conflict of interest.

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