



# THINK SARCOMA

## A Case Report on the importance of including Soft Tissue Sarcomas on the Musculoskeletal Differential

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### Soft Tissue Synovial Sarcomas

- ❑ Rare, small (<5 cm at presentation), and slow growing.
- ❑ Typically, periarticular in location:
  - 70% arise in *lower extremities*
  - Most common site is the popliteal fossa of the knee
- ❑ Non-specific presenting symptoms: +/- mass, swelling, pain, tenderness, numbness, weakness
  - Symptom duration averages from 2-4 years.<sup>1,2</sup>
- ❑ Early diagnosis is crucial for synovial sarcomas
  - Considered *high-grade sarcomas* with high rates of metastasis (hematogenous spread to the lung).
  - 10-year survival rates of <50%.<sup>3</sup>

### Case Description

A 48-year-old female presented with progressive left knee pain for one year without trauma. She reported pain severity of 7/10, exacerbated by sit-to-stand and palpation over left distal iliotibial band. Exam revealed localized swelling and tenderness to distal lateral thigh. Later, she progressed to having difficulty with ambulation and leg numbness.

**INTERVENTIONS:** Her pain failed to improve over six months with thermal modalities, physical therapy, topical ointments, acetaminophen, NSAIDs, Gabapentin, antispasmodics, oral steroids and intra-articular injections.

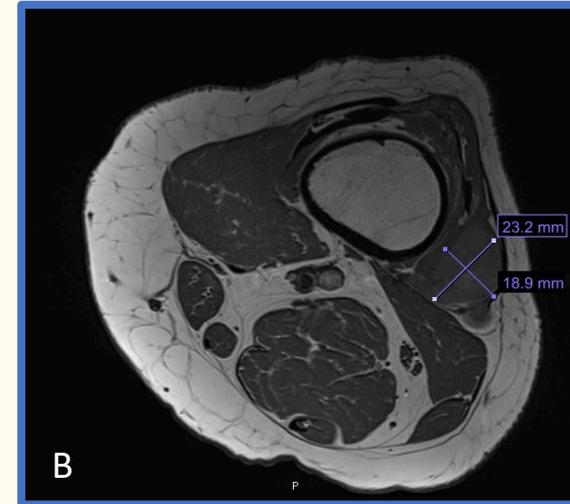
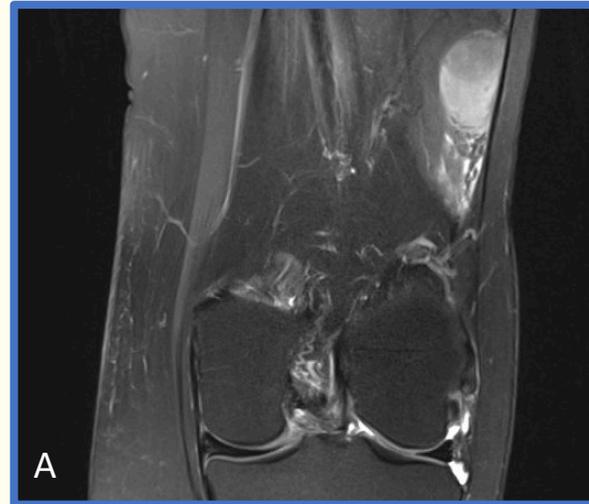
#### IMAGING:

- I. Initial MRI knee joint **without contrast** showed distal iliotibial band irritation and partial-thickness patellar tendon tear.
- II. Repeat MRI knee joint **without contrast** revealed a lesion suggestive of a hematoma within the vastus lateralis muscle (image 1).
- III. MRI knee joint **with and without contrast** demonstrated a concerning soft tissue lesion (image 2).

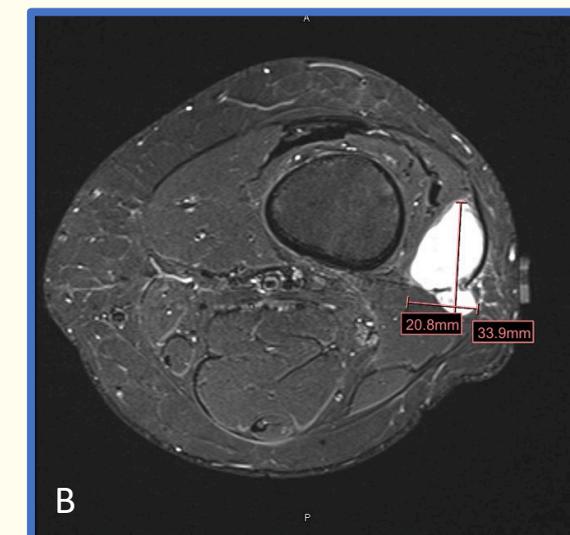
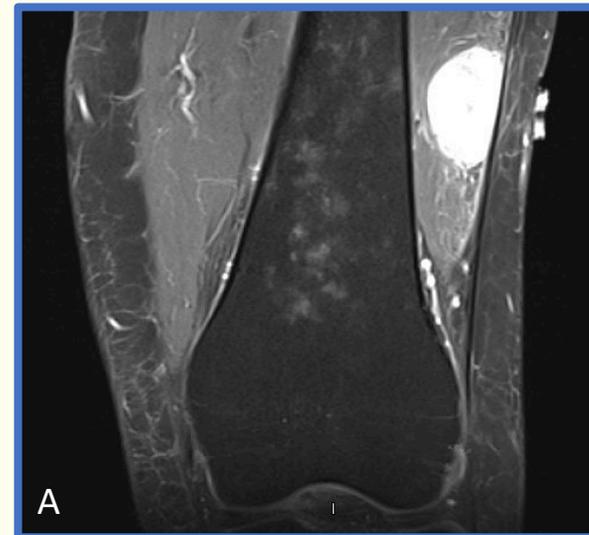
**DIAGNOSIS:** Image-guided needle biopsy diagnosed synovial sarcoma (cT1 N0 M0, grade 2, stage II).

**TREATMENT:** She was treated with radiation and wide-resection tumor removal.

### Imaging Studies



**IMAGE 1:** MRI of left knee joint without contrast. (A) PD weighted coronal and (B) T1 axial images show a 3 x 2 x 3 cm lesion with increased signal on T1 and on fluid sensitive sequences. Findings reported to be suggestive of a hematoma given the additional surrounding edema of the vastus lateralis musculature and likely muscular tear.



**IMAGE 2:** MRI of left knee joint with and without contrast. (A) T1 weighted coronal and (B) STIR axial images depict the 3 x 2 x 3 cm lesion with minimally increased signal on T1 sequences, consistent heterogeneous STIR hyperintensity, avid postcontrast enhancement and aggressive features such as prominent adjacent vascularity and perilesional edema. These findings were reported as concerning for soft tissue sarcoma.

### Discussion

Due to variations in clinical presentation and imaging, the diagnosis of soft tissue sarcomas may be quite challenging, especially as it can be indistinguishable from various musculoskeletal disorders on initial presentation. Furthermore, high-grade sarcomas can mimic traumatic intramuscular hematomas on imaging and are often labeled nonspecific and considered benign due to the current MRI characterization guidelines.<sup>4,5</sup> Thus, a high index of suspicion is *essential* for making the diagnosis.

Certain key features supporting the diagnosis include<sup>1</sup>:

- ❑ Age: median age 30-38 years.
- ❑ Location: adjacent to joint (40-50%) or within 5cm of a joint (60-75%), especially the knee.
- ❑ Palpable mass at the site
- ❑ Possible history of trauma (may or may not be associated)
- ❑ Imaging: multilobulated morphology and marked heterogeneity with hemorrhage, fluid levels, and septa.
- ❑ 30% have calcifications noted on radiography

In the presented case, the patient's symptoms and initial imaging findings were attributed to IT band syndrome. Definite diagnosis was unsuccessful until a biopsy was obtained. Her non-specific symptoms and initial imaging results hindered an earlier diagnosis. Thus, including soft tissue sarcomas (or tumors) on our daily musculoskeletal differential is imperative for comprehensive patient care.

### References

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