



HISTORY

A 22-year-old male collegiate football player was sent from the athletic training facility to the ED complaining of bilateral low back pain radiating to both testicles immediately following an offseason workout involving weightlifting and running. The onset of pain coincided with low-back weightlifting exercises and continued to worsen during the running portion of the workout despite 800 mg of ibuprofen. He denied any radiation to his lower extremities or neurological deficit including weakness, numbness, tingling or incontinence. His pain was exacerbated by moving and bending in any direction. He denied any alleviating factors. PMH: sickle cell trait detected at PPE 2.5 years earlier with Hgb S of 39.4%. He was discharged from the ED with diagnosis of muscular strain/spasm after being treated with IV fluid, oral narcotics and tizanidine. XR and testicular US performed in ED were normal. After discharge pain was unimproved despite muscle relaxant and pain medication. Team Physician sent patient directly to radiology based on pain and experience with a prior case.

PHYSICAL

Gen: AAOx3, visibly in pain, normal mood and affect
CV: regular rate and rhythm, no murmurs, rubs, or gallops
Resp: CTA bilaterally, chest wall is normal in size and symmetry
MSK: lumbar para-spinal tenderness with no significant edema/swelling, no neurological deficits or radicular findings.
GU: normal
Neuro: unremarkable

DIFFERENTIAL DIAGNOSIS

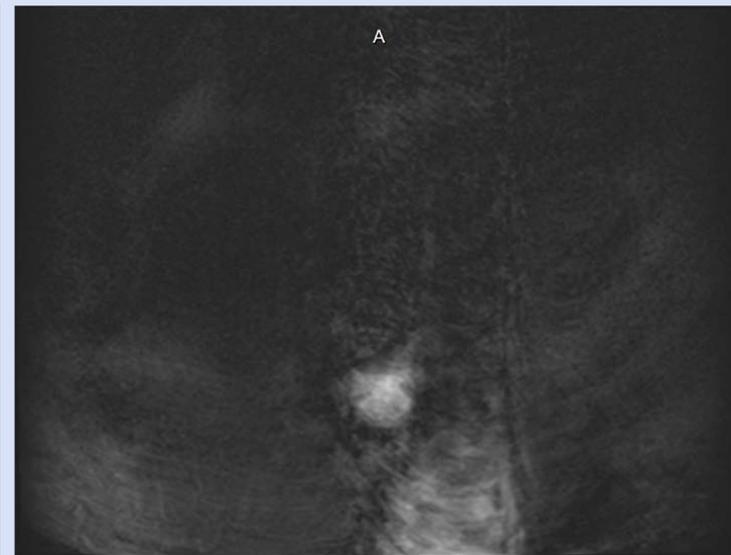
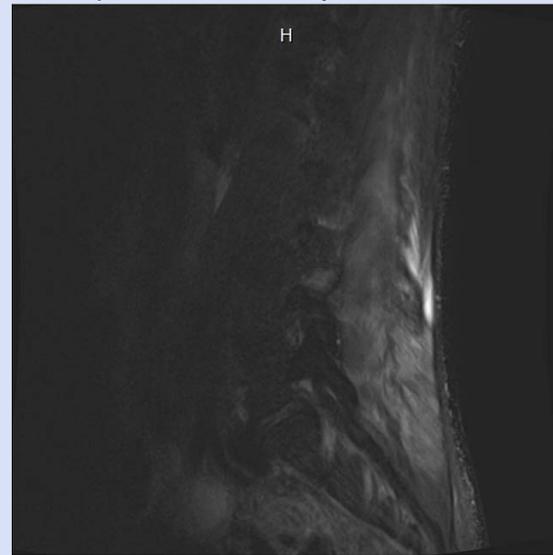
1. Lumbar muscular strain/spasm
2. Vertebral fx/ Stress fx
3. Paraspinal myonecrosis with compartment syndrome
4. Lumbar disc herniation
5. Testicular disorder
6. Nephrolithiasis
7. Renal cancer/tumor
8. Psoas abscess

TESTS AND RESULTS

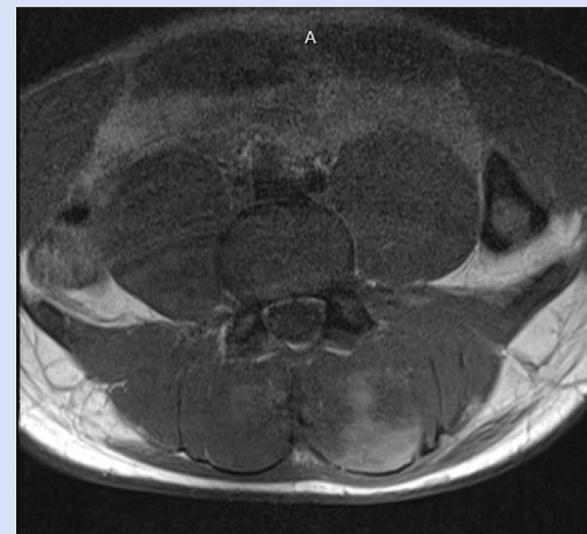
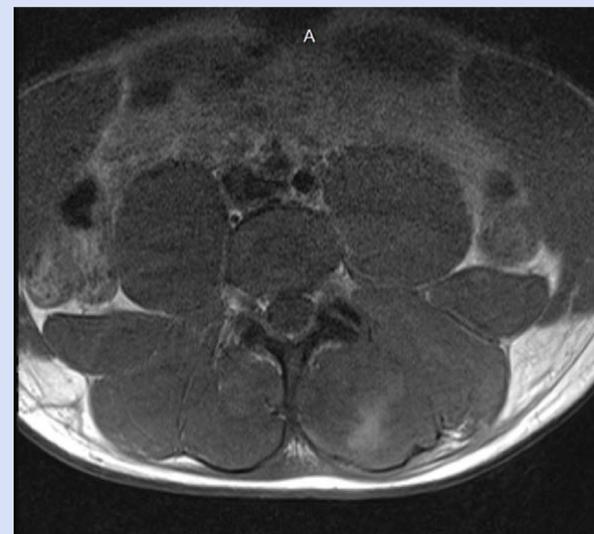
Labs: CBC: normal; CK: 7387 U/L; Creatinine: 1.3 mg/dL, BUN: 15 mg/dL; AST: 133 U/L, ALT: 37 U/L; Urine myoglobin: negative

Left : Sagittal T1 image of left paraspinal musculature. Hyperintense signal on T1, concerning for myoglobin or blood product breakdown.

Right: Transverse T2 image at the L4 level. Feathery increased T2 signal and enlargement of the left multifidus and longissimus muscles spanning from T12 to the sacrum and becoming more prominent distally



Follow up MRI on day 14 showed mildly to moderately increased T2 signal intensity and patchy increased T1 signal intensity involving the left multifidus muscle from L2 through S2 and the left longissimus muscle from the L3-4 level through the posterior superior left iliac crest.



FINAL WORKING DIAGNOSIS

Exercise induced paraspinal myonecrosis with compartment syndrome in sickle cell trait athlete.

TREATMENT

Treatment involved aggressive IV fluid and management of pain with IV and oral narcotics

OUTCOME

Day #4/5: Peak CK 14797 U/L, AST 375 U/L and ALT 89 U/L

Day #6: Improvement of pain and normalization of labs. Discharge home.

RETURN TO ACTIVITY & FOLLOW UP

Day #10: Patient seen in the training room with improvement of his symptoms allowing him to ambulate normally, to perform gentle stretching and to go through some pool exercises. He was no longer on pain medications.

Day #14: Patient able to begin a modified training protocol that avoided heavy lumbar lifting. A repeat lumbar MRI showed myonecrosis involving the left multifidus muscle from L2 through S2 and the left longissimus muscle from the L3-4 level through the posterior superior left iliac crest.

Day #28 He was cleared for all training activity and resumed all football activity at that time

Day #51 Began spring football practice which he completed with no difficulty.