

## **A Case Report of Diabetic Myonecrosis - A Rare Complication of Uncontrolled Diabetes**

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### **Abstract**

**Introduction:** Diabetic myonecrosis with muscle infarction is a rare complication of long term uncontrolled diabetes. We are presenting a case report of diabetic myonecrosis in a patient with longstanding uncontrolled diabetes, discuss its clinical importance, review the management and other differential diagnosis.

**Case Report:** 43 year old female with history of type 2 diabetes mellitus, HTN, congestive heart failure presented with left thigh pain since 1 week. On physical exam, has local tenderness to palpation with palpable swelling on the anterior aspect of lower left thigh. Initial labs are remarkable for fasting blood glucose level of 556 mg/dl and Hemoglobin A1C -13%. Initial extensive imaging done in prior ER visits with CT (computer tomography) lumbar spine, ultrasound arterial and venous dopplers of the lower extremity, x-ray imaging of the femur and pelvis without any acute abnormality. MRI of the left lower extremity showed moderate vastus lateralis and mild vastus medialis intramuscular heterogeneous hypoenhancement, consistent with myonecrosis. Management is mainly conservative with pain control, better control of hyperglycemia to prevent further long term complications.

**Discussion:** Diabetic myonecrosis is a rare and relatively underreported complication in long standing uncontrolled diabetes. Having a high degree of suspicion in these patients with no trauma, no signs and symptoms of active infection can help early diagnosis, decrease morbidity and improve patient outcomes.

**Keywords:** *Diabetic Myonecrosis; Muscle Infarction; Uncontrolled Diabetes; Diabetes Mellitus*

### **Introduction**

Diabetes mellitus is a systemic disease with microvascular and macrovascular complications with increased risk for coronary artery disease and stroke. Diabetic myonecrosis with muscle infarction is a rare complication of long term uncontrolled diabetes. Oftentimes it presents with sudden onset of pain with short duration in affected musculature. We are presenting a case report of diabetic myonecrosis in a patient with longstanding uncontrolled diabetes, discuss its clinical importance, review the management and other differential diagnosis.

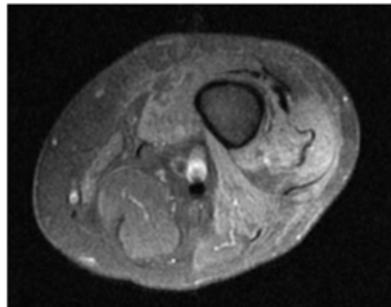
### **Case Report**

43 year old female with history of type 2 diabetes mellitus with neuropathy, HTN, congestive heart failure presented with left thigh pain since 1 week prior to presentation. Before this presentation, the patient presented to the emergency room (ER) 2 times and was discharged home with tylenol and over the counter pain meds with no significant improvement. Although she has a history of fall 3 days prior to the onset of this pain, the impact of her fall was on the right lower extremity and she had no immediate pain on the left side with no reported trauma on the left side. On physical exam, has local tenderness to palpation with palpable swelling on the anterior aspect of

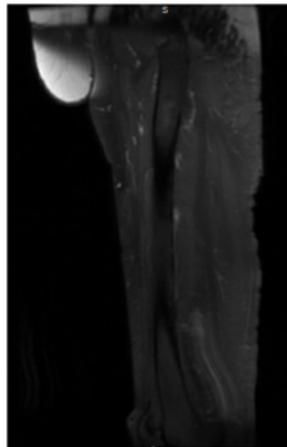
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lower left thigh. Initial labs are remarkable for fasting blood glucose level of 556 mg/dl and Hemoglobin A1C -13%. Initial extensive imaging done in prior ER visits with CT (computer tomography) lumbar spine, ultrasound arterial and venous dopplers of the lower extremity, x-ray imaging of the femur and pelvis without any acute abnormality. As most common etiology has been ruled out and with persistent symptoms with hyperglycemia, MRI of left lower extremity with and without contrast was ordered which showed moderate vastus lateralis and mild vastus medialis intramuscular heterogeneous hypoenhancement, most consistent with myonecrosis. Management is mainly conservative with pain control, better control of hyperglycemia to prevent further long term complications. With improved pain control, the patient has been discharged with a treatment regimen for diabetes and outpatient endocrinology follow up.



MRI Left lower extremity - axial image showing moderate vastus lateralis and mild vastus medialis intramuscular heterogeneous hypoenhancement, most consistent with myonecrosis



MRI Left lower extremity - sagittal image showing moderate vastus lateralis and mild vastus medialis intramuscular heterogeneous hypoenhancement, most consistent with myonecrosis

### Discussion

Diabetic myonecrosis is uncommon and mostly underdiagnosed complication in long term uncontrolled diabetes. Mean Hgb A1C - values in people diagnosed with this condition are close to 10 or greater with a known diagnosis of diabetes for more than 10 years. Although pathophysiology is unclear, longstanding uncontrolled blood glucose levels can cause microvascular damage leading to release of inflammatory markers causing tissue damage or necrosis [1,2]. Most common areas of involvement are lower extremity thigh regions.

Differential diagnosis for lower extremity pain include - muscle strain or rhabdomyolysis with history of strenuous exercise or fall, history of trauma causing any fractures, local infection with abscess formation or tenosynovitis, neuropathic pain, vascular occlusion, necrotising fasciitis or tumors. In our patient, she has no history of fevers or chills, no palpable abscess with less likely infectious in etiology. She denies any lower back pain or radiation of pain and CT imaging showed no nerve root compression with low probability of lumbosacral radiculopathy or femoral nerve root compression. Although she has a known history of diabetic neuropathy, it could cause more chronic generalized tingling and numbness in bilateral lower extremities, rather than unilateral local worsening of pain in short duration making it less likely etiology. With a history of uncontrolled diabetes, our patient is also at high risk for vascular complications, initial ultrasound arterial and venous Doppler didn't show any vascular insufficiency. Initial creatine kinase level of 330 with less likely rhabdomyolysis. Advanced imaging can be pursued after most common etiology has been ruled out to help further diagnosis and management plan in patients with high suspicion. MRI (magnetic resonance imaging) is the recommended study to further evaluate myonecrosis, characteristic findings include heterogeneous hypoenhancement with edema and inflammation most consistent with myonecrosis. Treatment is mainly conservative with pain control, aggressive control of hyperglycemia to prevent recurrence and decrease long term complications and morbidity.

### Conclusion

Diabetes myonecrosis is a rare and relatively underreported complication in long standing uncontrolled diabetes. Having high degree of suspicion in patients with no trauma, no signs and symptoms of active infection, concomitant presence of hyperglycemia with high A1C values, involvement of lower extremity thigh or calf muscles, with recurrent symptoms with no relief with just pain medications might help for early diagnosis and improved patient outcomes. Improving awareness with more preventative education for better control of diabetes is key in preventing future occurrences and long term complications.

### Bibliography

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