Muscle Infarction - A Case of Diabetic Myonecrosis

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Diabetic muscle infarction (DMI) is a rare complication of diabetes mellitus, characterized by spontaneous ischemic necrosis of skeletal muscle. It most commonly affects patients with long-standing and poorly controlled diabetes. The majority of these patients have other microvascular complications of diabetes, including retinopathy, nephropathy, and/or neuropathy.

A 36-year-old male with hypertension and type 2 diabetes mellitus was evaluated for two weeks of progressively worsening left medial thigh pain and swelling. He was taking no anti-hypertensive or anti-hyperglycemic medications due to lack of health insurance.

On physical exam, his blood pressure was 155/101 mmHg and pulse rate was 107/min. The anteromedial aspect of his left thigh exhibited a focal area of erythema, edema, warmth, marked induration, and tenderness measuring approximately 5 cm x 6 cm; thigh circumference was 44.5 cm on the left and 39.4 cm on the right. Laboratory studies showed serum glucose 504 mg/dL, WBC 8.61 x 10^9/L, ESR 87 mm/hr, CRP 8.4 mg/dL, CK 1158 IU/L, and A1c 15.1%. MRI of the left femur/thigh revealed extensive myositis involving the left vastus intermedius and medialis.

The diagnosis of DMI was ultimately based on the presence of uncontrolled diabetes; absence of trauma or injection drug use; and physical exam, laboratory, and imaging findings. His treatment consisted of blood glucose control, physical therapy, NSAIDs for analgesia, and indefinite therapy with low-dose aspirin. Six weeks later, his symptoms had completely resolved.

Classically, patients with DMI present with abrupt onset of muscle pain and swelling that are not preceded by trauma. The physical exam findings are typical of inflammation. Laboratory findings are nonspecific and may be either consistent with inflammation or entirely normal. MRI is the most valuable diagnostic imaging technique. Diagnosis is based on the presence of characteristic clinical features and imaging findings, as well as the exclusion of other disorders.

Learning Objectives:

- The diagnosis of diabetic muscle infarction is based on the presence of characteristic clinical features and imaging findings, as well as the exclusion of other disorders.
- MRI is the most valuable diagnostic imaging technique. Muscle biopsy provides a definitive diagnosis but is rarely needed.