



# Diagnosis of Diabetic Myonecrosis and its Consequences on Myocardial Infarction

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## DESCRIPTION

Diabetic myonecrosis is a rare but serious complication of diabetes mellitus. It is characterized by the sudden death of muscle tissue due to a lack of blood supply. Diabetic Myonecrosis (DMN) most commonly affects the thigh and calf muscles, but it can also occur in other muscle groups. Despite its rarity, understanding diabetic myonecrosis is essential for healthcare professionals and individuals living with diabetes, as prompt diagnosis and appropriate management can alleviate symptoms and improve outcomes. Diabetic myonecrosis is most commonly seen in patients with long-standing, poorly controlled diabetes mellitus. The average age at presentation is around thirty-seven years, with a reported range spanning from nineteen to sixty-four years. There is a minor female predominance, with a female-to-male ratio of approximately 1.3:1. It is important to mention that the mean age of onset since the initial diagnosis of diabetes is typically around fifteen years, emphasizing the importance of long-term glycemic control. Several risk factors have been associated with diabetic myonecrosis. Chief among them is the duration of diabetes and the degree of glycemic control. Patients with longstanding diabetes and poor blood sugar management are at a higher risk. Additionally, the presence of antiphospholipid antibodies, which are associated with hypercoagulability, can increase the risk of thrombotic complications, including diabetic myonecrosis. It's essential to differentiate diabetic myonecrosis from other conditions that may present with similar symptoms, including deep vein thrombosis, thrombophlebitis, cellulitis, abscess, hematoma, myositis, and others. A thorough clinical evaluation, along with laboratory tests and imaging studies, is necessary to establish the correct diagnosis. The exact underlying mechanisms of diabetic myonecrosis remain unclear. However, several theories have been proposed. One hypothesis suggests that microvascular endothelial damage, which is common in diabetes, can lead to thromboembolic events, causing tissue ischemia (inadequate blood supply) in the affected muscles. This ischemia then triggers an inflammatory cascade, culminating in local tissue damage and necrosis. Diagnosing diabetic myonecrosis

requires a high level of suspicion, especially in individuals with diabetes presenting with acute muscular pain. Clinical evaluation is potential, including a thorough physical examination, during which muscle tenderness and swelling are often observed. However, clinical findings alone are not sufficient for a definitive diagnosis. Imaging studies, such as Magnetic Resonance Imaging (MRI) and ultrasound, can be valuable in both diagnosing diabetic myonecrosis and ruling out other conditions with similar symptoms. These imaging modalities can provide insights into the extent of muscle involvement and the presence of characteristic features such as areas of infarction.

The precious standard for confirming the diagnosis of diabetic myonecrosis is a tissue biopsy. During the biopsy, pale muscle tissue, infarcted patches of myocytes, and necrotic muscle fibers lacking striations and nuclei may be observed under microscopic examination. Small-vessel walls may exhibit thickening and hyalinization, often leading to luminal narrowing or occlusion. Importantly, biopsy cultures for bacteria, fungi, acid-fast bacilli, and stains typically yield negative results in uncomplicated cases of myonecrosis. The management of diabetic myonecrosis primarily focuses on providing symptomatic relief and optimizing glycemic control. Supportive care, including pain management with analgesics and anti-inflammatory agents, is crucial. Exercise should be limited, as it can exacerbate pain and extend the area of infarction. The best way to prevent DMN is to maintain good control of diabetes. This includes following a healthy diet, exercising regularly, and taking prescribed medications as directed.

## CONCLUSION

In some cases, patients may require hospitalization for more intensive pain management and monitoring. Physical therapy is not recommended during the acute phase but should be initiated as soon as the patient is discharged from the hospital to aid in rehabilitation. The short-term prognosis for diabetic myonecrosis is generally favorable, with symptoms typically resolving over a period of weeks to months. However, it's essential to note

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that approximately fifty percent of patients may experience relapses in either leg, underscoring the importance of ongoing

diabetes management and regular follow-up with healthcare providers.