OSTEOPATHIC MANIPULATIVE TREATMENT (OMT) AS POSSIBLE ADJUNCT TREATMENT FOR SYMPTOMATIC MANAGEMENT OF DIABETIC MYONECROSIS

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LEARNING OBJECTIVES

1. Present a case report highlighting a presentation of diabetic myonecrosis
2. Current treatment modalities for diabetic myonecrosis
3. Proposed role of OMT in the treatment of diabetic myonecrosis

ACADEMIC CONTEXT

- Diabetic Myonecrosis is a rare complication described in patients with both Diabetes Mellitus Type 1 and Type 2.
- Standardized treatment protocols reduce morbidity and mortality.
- Lack of current standardized treatment protocol for diabetic myonecrosis.
- Proposed treatment protocol includes adjunctive OMT to offer more robust multimodal approach to patient care.

INTRODUCTION

Diabetic myonecrosis, also known as diabetic muscle infarction, is an example of what can happen when the body's ability for self-regulation and maintenance goes awry. It a rare complication of poorly controlled diabetes and can be seen in people with type 1 or type 2 diabetes and involves an acute and very painful swelling of a limb. Symptoms typically last weeks to months, however up to 50% of patients suffer relapse. Since first being described in the 1960's, there have been very few cases reported; a systematic review done in 2015 revealed less than 200 such cases in the literature. Since there is not an accepted standardized treatment plan for the management of these patients, current treatment largely consists of supportive measures focusing on pain control, IV fluids and glycemic control. This case proposes osteopathic manipulative treatment (OMT) as a possible adjunctive therapy for symptomatic treatment of diabetic myonecrosis.

METHODS

A case report highlighting the treatment of a 32-year-old male with diabetic myonecrosis of his left calf via a multidisciplinary approach. The patient was treated with traditional supportive measures including IV fluids, pain medications and physical therapy, and we considered the use of OMT on the patient's related myofascial somatic dysfunctions resultant from the muscular infarct.

CASE PRESENTATION

HPI

Pain + Swelling of left calf

Symptom onset 6 days prior

No history of trauma or injury, no known insect bites

7/10 pain controlled with Tylenol, Percocet in ED

Decrease AROM left knee

Walking on balls of feet

Previously seen in different ED 3 days earlier

R/o DVT, infection, cellulitis with US LLE

PMH: Diabetes and hypertension

Diabetes Mellitus type 2 diagnosed 2010

No medications to manage diabetes or hypertension since 2017

Current daily smoker (E-cigarettes)

Physical Exam

Initial Vital Signs: BP 166/118 mmHg, HR 97 bpm, RR 17, Temp 99.2 ºF (oral) SpO2 98% RA

Focused Exam

General: NAD, appears stated age

Head/Neck/Throat: Normocephalic, moist mucous membranes

Eyes: sclera anicteric, EOMI, PERRLA

Thorax: equal expansion, no crackles

CV: no JVD noted

Abdomen: non-distended, soft, non-tender

MSK: Evidence of 4-5 cm firm mass on the posterior left calf, evidence of dilated veins, no rise in local temperature, no erythema, tender to mild palpation

Neuro: alert/awake /oriented, grossly no abnormalities

Ext: pulses 2+, evidence of left inguinal lymphadenopathy

Pertinent Labs

- Hgb A1C 10.3
- ESR 957, CRP 57.4
- CBC: WBC 8.0, Hgb 15.9, Hct 46.2
- BMP: Na 135, Glucose 283
- POC Glucose 280

RESULTS

The patient was treated with a multidisciplinary approach, there was a decrease in the patient's pain with residual posterior calf swelling. Although the patient was educated on the risks and benefits of OMT to assist with his pain reduction and restoration of blood flow to the infarcted tissue, the patient ultimately declined OMT. This refusal for the procedure is an absolute contraindication, and thus the OMT was not provided.

Techniques considered if patient had consented:

- Adjunctive indirect techniques to help with pain control:
  - Strain-counterstrain
  - Functional Positional Release
- Support microvascular circulation through macrovascular circulatory techniques:
  - Lymphatic pump
  - Rib raising
  - Pedal Pump - especially since multiple cases have described occurrence in the leg and thigh
  - Articulatory techniques once out of acute phase
- Joint and muscle mobilization to regain functionality with:
  - Muscle energy- indirect in acute phase
  - HVLA- following resolution of acute symptoms

IMAGES

- MRI is the gold standard to diagnose diabetic myonecrosis, which this patient underwent following non-diagnostic CT/CTA.

Impression: centered within the lateral head of the left gastrocnemius is an area of devitalized tissue in keeping with myonecrosis. There is surrounding edema involving the gastrocnemius diffusely associated with thickening and swelling of the surrounding fascial planes and subcutaneous soft tissue. No abnormal enhancement or discrete fluid collection to suggest abscess. **Given history of diabetes and absence of trauma, most consistent with diabetic myonecrosis.** Within the proximal left tibial diaphysis is an enchondroma, benign.

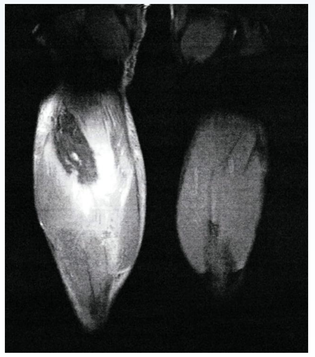

Image- Cor T1 FS MRI

Image 2- T1 weighted MRI

CONCLUSION

A multidisciplinary approach to care is important for symptomatic relief in patients with diabetic myonecrosis. Due to the patient declining OMT as an option for adjunctive care, we were not able to demonstrate its effectiveness, but we believe it has a potential to provide symptomatic relief and restore function. This case also highlights the importance of informed consent and respecting the patient's decision. Although we suspected that OMT would be helpful, the patient's refusal of the procedure elucidates the single absolute contraindication to OMT. Further research and clinical application of OMT in diabetic myonecrosis is necessary.

TAKEAWAYS

- Ideally, diabetes myonecrosis is managed with appropriate lifestyle changes alongside medications for glycemic control- prevention is key.
- Most patients face significant hurdles to management after diagnosis and ultimately contend with increased morbidity and mortality.
- Supportive management is the mainstay of treatment due to the lack of established protocols.
- OMM techniques can serve as a valuable adjunct in such cases by addressing the physiological burden of comorbidities.
- Ultimately, utilizing OMM can lead to improved health outcomes and assist in management of complexities of disease.

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