Severe Generalized Myositis After COVID-19

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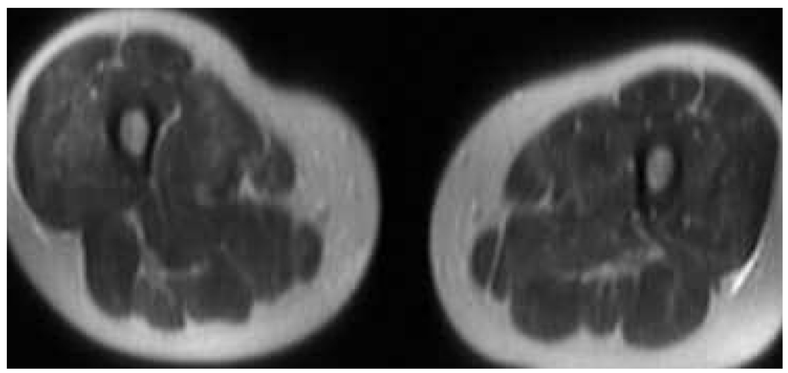
Introduction

- Myositis is the name of a rare group of diseases characterized by inflammation of muscles, which can cause prolonged muscle fatigue and weakness
- Its etiology can be due to autoimmune diseases, infection, vasculitis-induced, drug-induced (statins), exercise-induced, or other inflammatory cause

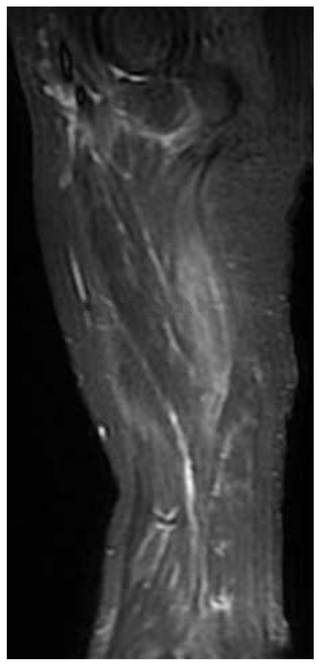
Case Presentation

- A 33-year-old woman with a past medical history of anxiety, chronic pelvic pain, and SARS-CoV-2 infection 3 months prior presented to the ED with 5 days of progressive diffuse myalgias and weakness in her bilateral thigh muscles that progressed to her bilateral upper extremities and neck
- She had received 2 doses of the COVID vaccine prior to SARS-CoV-2 infection, and she was previously treated for mild myalgias and fatigue with muscle relaxers, NSAIDs, and opioids
- At this presentation, in addition to diffuse myalgias she also complained of severe left shoulder pain
- In the ED, she was afebrile and other vital signs were within normal limits
- Her labs were significant for WBC 19.2 cells/mm^3 with significant bandemia, elevated ESR 65 mm/hr & CRP 12.8 mg/dl
- ANA and RF were negative. Imaging of L shoulder was unremarkable
- She was started on prednisone 50 mg daily with improvement in symptoms and discharged after 3 days
- Several days later, she returned to the ED after her myalgias and fatigue worsened to the point where she could no longer walk and was readmitted

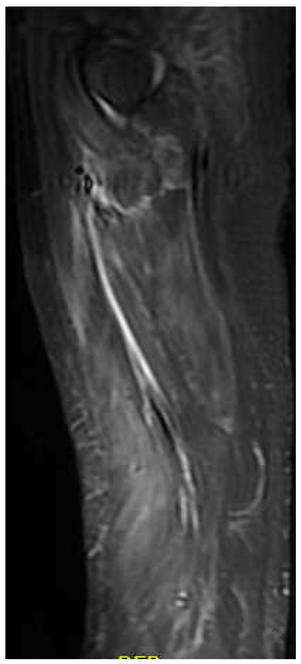
Images



Axial views of bilateral thighs: severe heterogenous increased signal involving all musculature of both thighs, indicating severe myositis



Sagittal view of L thigh



Sagittal view R thigh

Hospital Course

- During her second admission, her labs had also worsened: WBC 71.9 cells/mm^3, ESR 90 mm/hr, and CRP 44.7 mg/dl. Interestingly her CK was within normal limits
- Steroids were initially held, but over the next few days her diffuse muscle weakness worsened and she developed trismus
- MRI of bilateral thighs demonstrated severe generalized myositis, as shown to the left. CT chest did not show interstitial lung disease and TTE was unremarkable
- An extensive autoimmune workup was negative, including anti-MDA5 antibodies
- Muscle biopsy of her right thigh revealed minimal myopathic changes and no morphologic evidence of vasculitis
- Steroids were restarted at an increased dose. She began to have improvement, and she was discharged with steroid taper
- She followed up regularly with rheumatology over the next year and her myalgias gradually improved
- We ultimately suspect that this was a case of post-COVID myositis or vaccine-induced myositis.

Discussion

- The rapidly progressive nature of post-COVID myositis draws parallels with Clinically Amyopathic Dermatomyositis (CADM) which is associated with high risk for progression to interstitial lung disease, and is anti-MDA5 positive
- Our patient's presentation was atypical given her high degree of leukocytosis and normal CK
- However, given her rapidly progressive symptoms sharing similarities to anti-MDA5-positive patients, the underlying cause was likely post-COVID or vaccine myositis.

References

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