Introduction: Myositis is a rare group of diseases characterized by inflamed muscles, which can cause prolonged muscle fatigue and weakness. The group includes the autoimmune disorders juvenile myositis, dermatomyositis and polymyositis, as well as inclusion body myositis (IBM).

Case: A 33-year-old woman with a past medical history of anxiety, elevated DHEA, chronic pelvic pain on naproxen and COVID-19 infection 3 months prior after vaccination presented to the Emergency Department (ED) with a 5 day history of progressive diffuse myalgias and weakness in her bilateral thigh muscles that progressed to her bilateral upper extremities and neck. Following the COVID-19 infection, she was treated for myalgia and fatigue with a multimodal pain regimen. When her myalgias and fatigue continued to progress, she returned to the ED at which time her WBC was 19.2 cells/mm^3 with left shift, ESR 65 mm/hr, CRP 12.8 mg/dl however ANA and RF were negative. She was started on prednisone and was discharged with improved symptoms. Several days later, she returned to the ED with diffuse muscular weakness. WBC count was 71.9 cells/mm^3, steroid therapy was held, ESR increased 90 mm/hr and CRP increased to 44.7 mg/dl with normal CK. Autoimmune workup was unremarkable (including anti-MDA5 antibody). MRI of bilateral thighs demonstrated severe generalized myositis. CT chest did not show interstitial lung disease and TTE was unremarkable. Rheumatology was consulted, and muscle biopsy of her right thigh revealed minimal myopathic changes and no morphologic evidence of vasculitis. She developed extensive muscle weakness including trismus and was re-started on high-dose steroids. Her IgA was low, so she was not a candidate for IVIG. She continued to improve slowly over the following year.

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.