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Case Report: COVID Arm (COVID Vaccine Arm)

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Abstract:

We report the case of a 38 year old male physician who was vaccinated with the Pfizer. He experienced arm pain and swelling on the vaccinated arm as well as systemic symptoms, including fever, chills, headache and weakness. The systemic symptoms improved after the use of oral prednisone. A review of the literature on COVID vaccine article is presented.

Case Presentation:

A 38 year old male physician was vaccinated with the Pfizer COVID vaccine. He noted some shoulder soreness on the side of the vaccination (left deltoid) on the day of the vaccination. Later that evening he noted chills and rigors in association with swelling and tenderness of his left upper arm in the area of the vaccination site. The rigors and headache persisted throughout the night. In the morning (day 1 after vaccination) he noted a diffuse sharp headache accompanied by an overall sense of weakness in association with subjective fever. In addition, he developed axillary edema. He noted some improvement with acetaminophen and ibuprofen. That night he again experienced rigors. On post-vaccine day two he developed a diffuse headache and fatigue. On the morning of day two post vaccination, he took 60 mg of prednisone and 25 mg of diphenhydramine with noticeable improvement in symptoms within two hours of taking the medicine and with near resolution within 12 hours. He slept well on the night of day two with no rigors. On day three the patient awoke without headache of weakness and continued prednisone (60 mg on day 3) as well as diphenhydramine 25 mg three times per day. He discontinued medications on day 4. The arm swelling subsided and resolved over the next several days. The patient's symptoms had entirely resolved by day 5 post vaccination.

Discussion:

Epidemiology and terminology of COVID arm (COVID vaccine arm) Approximately 2% of patients who received an mRNA vaccine COVID vaccine report at least a mild skin reaction at the vaccination site. [3,5] The reaction has been called "COVID arm". Some authors believe the reaction should be more properly called "COVID vaccine arm". [4] COVID vaccine arm is characterized by erythema and edema at the vaccination site and can present up to 10 days post vaccination and can emerge at sites adjacent or distant to the vaccination site.

Mechanism The mechanism of COVID vaccine arm has not been clearly established. Both the Moderna and Pfizer vaccines include mRNA and lipids. These vaccines contain polyethylene glycol. According to Lingren et al, polyethelene glycol compounds "have previously been shown to cause delayed hypersensitivity reactions", however they note that it unclear if these are the cause of COVID vaccine arm. [5,6,7]

Presentation In a systematic review of the literature by Fasano et al, it was noted that 24% of patients with COVID vaccine arm experienced not only with arm swelling but with systemic symptoms, such as myalgias, chills and headache. Lymphadenopathy has also been described. This is consistent with the patient presented in this case. [3] Lindren et al point out that Phase 3 Moderna data suggest that COVID arm occurs less frequently on the second dose than the first dose. [4,5]

Differential diagnosis COVID vaccine arm present as a cellulitis. A recent tick bite can be a clue for erythema migrans.

Treatment Patients with mild symptoms may not require and treatment. The reaction is generally self-limited. [2] Management can include diphenhydramine and topical steroids. Oral steroids have been used. In the case presented, oral prednisone appears to have had a salutary effect on the patient's systemic symptoms. An awareness of COVID vaccine arm may reduce the use of antibiotics for suspected post vaccination cellulitis. [1]

Conclusions:

COVID vaccine arm with systemic symptoms may improve with oral diphenhydramine and oral corticosteroids. An awareness of COVID vaccine arm may reduce the use of antibiotics for suspected post vaccination cellulitis.

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