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COVID-19

Meralgia paresthetica mimic after Moderna COVID-19 vaccine

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Abstract
This report describes the case of a 56-year-old male who developed unilateral right anterior thigh numbness which began 16 hours after receiving his second Moderna COVID-19 vaccine in the left deltoid. The numbness persisted and after one week a circular, raised, painless area with a red border appeared in the center of the anterior thigh which resolved after 2 weeks spontaneously. There was no clinical history or risk factors consistent with meralgia paresthetica. At his 6 month follow up the patient reported that his symptoms spontaneously resolved. While many other non-specific neurologic side effects of COVID-19 vaccines have been documented, this is the first case of meralgia paresthetica documented after a vaccine without any other risk factors for the syndrome. COVID vaccines should be considered as a potential cause of very localized peripheral neuropathy.

Keywords Moderna · COVID-19 · Vaccine · Neurology · Paresthesia

Introduction

The most commonly documented side effects of COVID-19 vaccines in recent literature are headache, Guillain–Barre syndrome (GBS), venous sinus thrombosis (VST), and transverse myelitis [1–3]. Cases of demyelination have also been reported, mainly in patients with pre-existing auto-immune disease [4]. There have also been rare reports of nonspecific malaise, nausea, diarrhea, changes in taste, dermatologic changes, and varied numbness and tingling in patients after receiving COVID vaccines [5]. While nonspecific neurologic symptoms have occurred, no cases of symptoms mimicking meralgia paresthetica with a hive in the affected area have been documented along with a clinical picture that points to a COVID-19 vaccine as the etiology.

Methods

Literature was reviewed based on a PubMed search for COVID; Coronavirus; Vaccine; Adverse; Side; Effects; Iatrogenic. The case was described and compared to those found in literature. Written informed patient consent was obtained to include photos and perform this study.

Case/discussion

A 56-year-old male, who was an international humanitarian aid worker with a distant medical history of treated malaria, typhoid, brucellosis, and Klebsiella pneumonia, prior tick bites with chronic fatigue, recent negative Lyme testing, and recently tested positive for COVID IgM, was in his normal neurologic state until April 2021 when he received his second Moderna COVID-19 vaccine in the left deltoid. The patient went home and had no issues immediately after the vaccine and went to sleep for the night on his right side because of the pain at the injection site in the contralateral shoulder. Sixteen hours after the vaccine was administered, the patient awoke with constant, unilateral right anterior thigh numbness. The numbness persisted even though the sleep routine returned to normal and within 1 week a circular, raised, painless hive with a red border appeared in the center of the anterior thigh which resolved spontaneously 2 weeks later (Fig. 1).

The patient then presented to an outpatient neurology clinic affiliated with a large academic medical center where his exam was notable for much decreased pinprick sensation of the unilateral right anterior thigh numbness in a lateral

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Fig. 1 Skin findings

Fig. 2 Outlined area

femoral cutaneous nerve distribution (Fig. 2). There was no weakness, paresthesia, or pain and the rest of his neurologic exam was unremarkable. There was no involvement of the face or any other extremity, and no history of shingles, CMV, B12 deficiency, stroke, multiple sclerosis, syphilis, DM2, HIV, Lyme, ETOH abuse, and uremia. He denied dry eyes or mouth, prior chemotherapy, vitamin B6 supplementation, weight loss, night sweats, double vision, speech problems, facial asymmetry, back pain, or manipulation. He also denied ever having TB, falls, head strike, or issues with joint space perception. The patient said he was continuing to ambulate without an issue and also denied excessive supine or lateral decubitus positioning. The medical team confirmed there was no history of diabetes, tight prolonged use of belts, or large objects in the pocket and he had not been carrying heavy objects using support from the thigh or groin. The only major recent change prior to the symptom was administration of the vaccine.

Physical exam revealed decreased pinprick sensation in the anterior right thigh which the patient outlined with a marker (Fig. 1), a negative straight leg raise, preserved proximal and distal motor strength, and normal reflexes. Basic metabolic and inflammatory labs were unremarkable. Nerve conduction studies (NCS) were normal as well (see above), including unremarkable lateral femoral cutaneous sensory nerve action potentials (SNAP).

A previous study using inguinal segmental and distal sensory NCS in 34 patients with meralgia paresthetica reported absent lateral femoral cutaneous sensory responses in 32% of patients and delayed conduction across the inguinal ligament in 45% of patients. Tataroglu et al. [6] However, neither of these was present in this patient. At his 6 months after onset, a 2-in. area on the affected thigh remained numb with no pain or paresthesia, and no motor symptoms or mobility issues. The area and intensity of numbness remained stable after the patient received a Moderna booster on 11/9/2021 with no additional reaction.

Although there was one night of ipsilateral decubitus positioning with sleep, a hive in the affected area would not be explained by compression and the clinical story and timeline points to the Moderna COVID-19 vaccine as the case of this unique case of numbness without paresthesia in lateral femoral cutaneous distribution.

Conclusion

This is a unique case of numbness in lateral femoral cutaneous nerve distribution with a hive in the affected area within one day of receiving the Moderna COVID-19 vaccine in the contralateral shoulder; since positional and compression would not explain the combination of numbness and a hive in the affected area, the COVID vaccine should be considered a potential cause of this very localized peripheral neuropathy.

Declarations

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Conflict of interest I have no conflicts of interest to report.

Ethical approval None.

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