

Functional Neurologic Disorder: A “Side Effect” of the COVID-19 Vaccine the Healthcare Community Should Be Aware Of

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INTRODUCTION

Anaphylaxis following COVID-19 vaccines has been a topic of debate. Anaphylaxis is a challenging diagnosis as the differential includes approximately 40 other diseases.

CLINICAL PRESENTATION

41 year old Hispanic female with history of type 2 DM presented for a suspected anaphylactic reaction to the second dose of the Moderna mRNA vaccine. Within minutes of receiving the second dose of the vaccine she started to feel throat swelling, generalized pruritis, and dyspnea. Patient self-reported a similar but less severe reaction to the first dose. She received Methylprednisolone 125mg IVPB, Benadryl 50mg IVP, and epinephrine 0.3mg IM in the emergency department.

Past Medical History

Type 2 diabetes mellitus

MEDICATIONS

No home medications

SOCIAL HISTORY

Denies smoking, drinking, and illicit substance use.

FAMILY HISTORY

Denies

PHYSICAL EXAMINATION

VS: T. 97.8F, 128/88mmHg, HR 108bpm, RR 27

General: Hispanic female, NAD, protecting her airway
Skin: Normal turgor. No significant rashes or lesions noted. No rash noted. L distal femur scar with leg deformity after explosion injury at El Salvador.

HEENT: No obvious masses.

Reparatory: CTA b/l

CV: Regular rate. No murmurs, rubs or gallops. S1 and S2 audible.

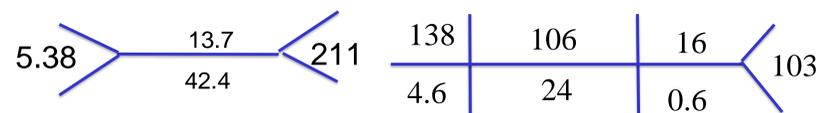
GI: Abdomen soft, non-tender with normal bowel sounds in all quadrants.

Edema: No significant edema, no significant varicosities.

Neuro: AOX3. CN grossly intact.

Psychiatric: Alert, attentive and cooperative with good eye contact.

LABORATORY FINDING



Imaging/ Diagnostic testing

Direct laryngoscopy Operative Report 6/3/21: Poor respiratory effort seen prior to procedure. No laryngeal mass or obstruction seen.

EMG 6/16/21: There is no electrodiagnostic evidence of large fiber neuropathy.

MRI brain/ c-spine 6/7/21
IMPRESSION:
Unremarkable MRI of the brain.

CT soft tissue neck 6/8/21:
IMPRESSION:
Unremarkable neck CT.

HOSPITAL COURSE

Admitted: May 25th 2021

The patient was admitted from the ED to the ICU for close observation; overnight she began to complain of severe anxiety, dyspnea, and began to desaturate. She was subsequently intubated; however anesthesia found her airway intact without any visible edema during the intubation process. She was extubated 2 days later. After extubation she remained anxious and was started on Xanax 0.25mg daily; without improvement a psychiatric evaluation was placed. She was diagnosed with adjustment disorder and given counseling. Four days after admission the patient was downgraded to medicine; Methylprednisolone was restarted at 40mg every 12 hrs. for continued symptoms. The patient had stridor on exam on the second day of the medicine service and improved after intramuscular epinephrine was administered. Allergy consult was placed that same day and a serum tryptase level was sent; which was negative. Allergy recommended stopping Methylprednisolone as it contains polyethylene glycol and could possibly be the allergen; as also present in the Moderna vaccine. They recommended continuing H1 and H2 blockers for at least 1 week. ENT performed a laryngoscopy and vocal cords had no visualized abnormalities; however they noted poor inspiratory reserve and global weakness. Concerned for a neuromuscular disorder; neurology evaluated the patient. Impression was that the recurrent laryngeal nerve could have been damaged; however MRI of the head and neck; as well as a CT of the soft tissue of the neck revealed no abnormalities. An EMG and acetylcholine receptor antibodies were found to be negative. With neuromuscular and physiologic abnormalities ruled out; again psychiatry consultation was obtained and the patient was diagnosed with possible conversion disorder vs adjustment disorder.

DIAGNOSIS

Conversion vs adjustment disorder

DISCUSSION

Conversion disorder or functional neurologic disorder (FND) can be caused by a variety of physical/ or emotional events including vaccinations. ^{1, 2}

FND is a real, brain-based disorder at the intersection of neurology and psychiatry whereby patients develop a range of neurological symptoms precipitated and perpetuated by biological, psychological, and/or environmental factors. ²

This case outlines the importance of not only educating the public on conversion disorder; but also possibly the over-reporting of anaphylaxis reactions in vaccinated individuals.²

With regards to the intersection of FND and COVID-19 vaccinations, the response from the US Centers for Disease Control and Prevention has so far been to reiterate the safety of the vaccines, without directly addressing these cases.²

We must explain transparently and nonjudgmentally the nature of FND, including that these symptoms are real but not the direct result of toxic vaccine effects. They can theoretically happen with a trigger such as injecting saline, and these events do not mean the current vaccines are unsafe. ²

This case outlines the importance of not only educating the public on conversion disorder; but also possibly the over-reporting of anaphylaxis reactions in vaccinated individuals. ²

CONCLUSION

Educating the public and addressing these cases directly should be of absolute priority to ensure continued public compliance in the vaccination process.

REFERENCES

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- 2) Kim DD, Kung CS, Perez DL. Helping the Public Understand Adverse Events Associated With COVID-19 Vaccinations: Lessons Learned From Functional Neurological Disorder. JAMA Neurol. 2021 Jul 1;78(7):789-790. doi: 10.1001/jamaneurol.2021.1042. PMID: 33835153.