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Case Report

The Expanding Spectrum of New Onset Rheumatic Disorders Following Covid-19 Vaccination

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Abstract

The vast majority of immunization recipients have no safety issues, but that does not detract from the reality of numerous peer reviewed publications reporting on a wide variety of new onset vaccination-induced disorders. Case reports of such disorders have implicated more than a dozen different vaccines, and the illnesses they initiate typically comprise two distinct categories: (1) autoimmune and autoinflammatory diseases; and (2) neuro-psychiatric ailments, whose overlapping clinical features often mimic what is characteristic of the various neurologic fatiguing syndromes. Over the past two years amelioration of morbidity and mortality from SARS-CoV-2 infections has been a worthy goal of the new Covid-19 vaccinations. Thus far, published reports of chronic adverse reactions to Covid-19 vaccines have encompassed either new onset category "1" disorders or exacerbations of preexisting autoimmune diseases.

Observations reported herein expand this spectrum of chronic adverse reactions to category "2" and simultaneously offer novel potential mechanisms of disease causation.

Keywords: Autoimmunity; Covid-19; Fibromyalgia; Rheumatic disorders; SARS-CoV-2; Vaccines

Introduction

Intense controversy has been generated over the past four decades by published reports of an ever-expanding list of chronic vaccination-induced disorders that exclude anaphylactic and acute allergic reactions. In the aggregate these publications have raised more questions than answers due to the following observations: (a) any single vaccine appears capable of initiating a wide variety of well-recognized autoimmune and/or autoinflammatory conditions; (b) on the flip side, any single autoimmune and/or autoinflammatory disease may be triggered by a wide variety of different immunizations; (c) autoimmune and autoinflammatory disorders do not solely comprise all of the reported diverse vaccination-induced disorders, because it is now appreciated that chronic ailments manifesting overlapping features of the various neurologic fatiguing syndromes may also be triggered by various immunizations; (d) considerable heterogeneity exists regarding the chronological onset of vaccination-induced disorders, spanning 24 hours to four weeks; (e) the vast majority of vaccine recipients do not develop chronic ailments; (f) the presence or absence of post-vaccination autoantibodies, directed at a perplexing array of self-antigens in any of the above scenarios, are extraordinarily inconsistent, and at times their appearance may conflict with the known chronological sequence of the adaptive immune response; (g) chronic inflammatory reactions at the inoculation site itself appear capable of eventually triggering systemic inflammation; (h) some investigators claim that optic neuritis, abrupt hearing loss, thyroiditis and autism should be added to the list; (i) the presence or absence of mercury and aluminum additives, as well as their varying vaccine concentrations, create too many confounding factors for definitive analysis; and (j) spontaneous improvement and/or favorable responses to varied treatment regimens are inconsistent (e.g., IV IgG; anti-inflammatory drugs; alternative medicine modalities) [1,2].

Despite these observations, some proponents of chronic vaccination-induced disorders continue to force fit afflicted individuals into singular theories of disease causation, such as molecular mimicry and ASIA (autoinflammatory syndrome induced by adjuvants). Not infrequently this has elicited stinging rebuttals by immunologists, toxicologists, prominent clinicians, and the government officials who oversee the National Vaccine Injury Compensation Program [3]. Molecular mimicry controversy becomes significantly muted whenever Guillain Barre Syndrome, rheumatoid arthritis, or systemic lupus erythematosus legitimately develop after influenza vaccination, but that does not diminish the clamor of nay-sayers for all the other alleged chronic ailments attributed to a diverse array of immunizations. Over the past two years this controversy has been dramatically enhanced by the introduction of vaccines to ameliorate the Covid-19 pandemic caused by SARS-CoV-2. Published reports of alleged new onset Covid-19 vaccination-induced disorders include systemic lupus erythematosus, rheumatoid arthritis, vasculitis, myositis, Guillain-Barre Syndrome, thrombotic thrombocytopenia, myocarditis, optic neuritis, multiple sclerosis, autoimmune hepatitis, IgA nephropathy, and even death [4]. The following three case histories expand this controversial list, because their clinical features and chronological evolution differ substantially from vaccination-induced autoimmune diseases.

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Case Reports

Case one is a 46 year old white female international traveler who had previously received dozens of immunizations without incident, including typhoid, yellow fever, and influenza. In March of 2021 she received the first dose of the mRNA-1273 (Moderna) Covid-19 vaccine, followed four weeks later by a second dose of the same vaccine. The first dose produced chills and myalgias which resolved 48 hours later, without the recurrence of any adverse symptoms following the second dose. A booster dose of the Covid-19 Moderna vaccine was administered In November of 2021 without incident. One month later, in December of 2021, she contracted a mild self-limited infection caused by SARS-CoV-2, without lower respiratory symptoms and without any change in taste or smell. Complete resolution of upper respiratory symptoms, headache and fatigue occurred within seven days, and she did not experience any long hauler symptomatology. In early June of 2022 she received a second booster (fourth dose) of the Covid-19 Moderna vaccine. In the first 48 hours following this dose she developed myalgias and fatigue which continued unabated. One week following this second booster she developed a deep aching in all of the muscles of her lower extremities, described by the patient as "electric sensations," accompanied by tingling and weakness in her lower extremities. A rapid Covid-19 home test was negative. These symptoms became progressively more severe to the point where the mechanics of movement in her lower extremities felt like "someone else was controlling my legs." Five weeks after the second booster she developed parenthesis in her upper extremities, a weak urinary flow, postural orthostatic tachycardia syndrome, non-restorative sleep, and periorbital electric sensations with a normal ophthalmologic examination. All of the above continued on a daily basis, and one month later she noted "abdominal gurgling" and loose stools, followed shortly thereafter by cognitive dysfunction encompassing problems with word recall and name recall. There was no history of fever, skin rashes, edema, lymphadenopathy, periungual infarcts, arthritis, dyspnea, or hyper extensibility. The chronological evolution of this illness prompted a multitude of inpatient and outpatient evaluations by neurologists and other subspecialists. Tendon reflexes in the lower extremities remained intact at all times, and disorders including Guillain-Barre syndrome, transverse myelitis, chronic demyelinating polyneuropathy, myasthenia gravis, Eton-Lambert syndrome, myositis, myocarditis, multiple sclerosis, and inflammatory systemic connective tissue diseases were ruled out by physical examination, appropriate blood tests, spinal fluid analysis, MRI scans of the entire spine and brain, cardiac studies, and EMG's and nerve conduction studies. Polypharmacy afforded no improvement. Four months after its onset her systemic illness began to undergo partial improvement following the institution of acupuncture.

Case two is a 51 year old white female with an eleven year history of mild psoriatic arthritis affecting her right thumb, one sacroiliac joint, and the 3rd MTP joint of her right foot, cervical spine, one shoulder and both hips. Her inflammation was exquisitely responsive to a decade of hydroxychloroquine use (400mg daily) without exacerbation of her psoriasis. In 2021 she received two doses of the mRNA (Pfizer BNT162b2) Covid-19 vaccine without incident. A booster dose of the mRNA Moderna Covid-19 vaccine was administered in February, 2022. Within one week of this booster dose she developed a flare of both her psoriasis and polyarthritis, the latter manifested by pain and swelling in her right wrist, several MCP and PIP joints of her hands, right knee, both elbows, both shoulders, and lumbar spine, accompanied by several hours of morning stiffness and chronic fatigue. Her clinical course became more complicated one week later when abdominal pain, loose stools, anterior chest pain induced by vigorous exercise, shortness of breath, spontaneous sweating, diffuse myalgias, memory lapses, paresthesias, and postural orthostatic tachycardia syndrome developed. There was no evidence of myocarditis, and other exhaustive evaluations and laboratory tests, including Covid-19 testing, stool and gastric fluid cultures, upper endoscopy and colonoscopy (with biopsies) were normal or negative. A four month trial of Humira and three weeks of oral corticosteroids afforded no change in her condition.

Case three is a 20 year old white female diagnosed in her preteen years with the benign hypermobile variant of Ehlers-Danlos syndrome, manifested by soft stretchy skin, joint hyperextensibility, and intermittent constipation. There was no accompanying evidence of cardiac involvement, vascular anomalies, dysautonomia, paresthesias, bruising, fatigue, nor widespread pain. Prior to and through age 14, when she received her first Gardasil 9 immunization in June, 2016, a dizzying array of previous vaccinations had been administered without incident. Tolerance to Gardasil was also demonstrated until her second Gardasil dose was administered at age 15 in June, 2017. One day after this second dose she developed fatigue, headaches and dizziness, followed over the next several weeks by palpitations, anterior chest pains, blurry vision, widespread myalgias and joint pains, nausea and vomiting, non-restorative sleep, and abdominal bloating. All of these symptoms persisted unabated on a daily basis for three years before eventually spontaneously subsiding in the summer of 2020. A third Gardasil dose was never administered. In the first half of 2021 she received two consecutive doses of the Moderna mRNA Covid-19 vaccine without incident. In March of 2022, while feeling well and readily participating in all aspects of her college curriculum, she received a booster dose of the Moderna mRNA Covid-19 vaccine. Within 24 hours she became abruptly ill again with the reappearance of chronic fatigue, headaches and dizziness, followed shortly thereafter by the daily reappearance of all of the other phenomena listed above, along with chills, night sweats, dry mouth, metallic taste, and an inability to stay awake. Three weeks after the booster dose she noted waxing and waning cervical lymphadenopathy, accompanied by anxiety and cognitive dysfunction (the latter characterized by problems with name recall and word recall and difficulty retaining academic teachings). An ANA test was positive in a titer of 1:320, but there was no other evidence for any definitive inflammatory systemic connective tissue disease. NSAID's, corticosteroids, fluoxetine and montelukast yielded no improvement. None of the three individuals has a family history of any rheumatologic disorders.

Discussion

If one accepts the reality of chronic vaccination-induced disorders, how can they be so diverse? It is scientifically sound to acknowledge new onset post-vaccination autoimmune rheumatic conditions, because these diseases appear to be mediated by cross reacting autoantibodies that share demonstrable antigenic specificity with vaccine components [5]. This scenario is not relevant to Gardasil recipients, nor to the three individuals in this report, as both groups demonstrate chronic post-vaccination ailments mimicking the clinical features seen in one or more neurologic fatiguing syndromes [6]. Two questions come to mind: (a) why do individuals with spontaneous idiopathic onset neurologic fatiguing syndromes (chronic fatigue syndrome/myalgic encephalomyelitis, fibromyalgia, small fiber neuropathy, dysautonomia, postural orthostatic tachycardia syndrome,

and complex regional pain syndrome) demonstrate multiple similar overlapping clinical phenomena to each other in the first place? And (b), are observations of immune dysfunction, cytokine elevations, and viral detection in neurologic fatiguing syndromes actually causative, or are they simply secondary circuitous amplification loops that arise well after the onset of primary biochemical disturbances caused by increasing environmental chemical contamination [7]? After all, sixty years ago neurologic fatiguing syndromes were vague and rare, but now they are vague and common.

The above questions are relevant not only for the complexities inherent to the idiopathic onset of neurologic fatiguing syndromes, but they are equally relevant for the clinical diversity seen in non-autoimmune vaccination-induced disorders triggered by Gardasil and Covid-19 vaccines. These queries require us to consider multiple other overlapping and interdependent mechanisms of disease causation operative in these two vaccine groups. Organosiloxanes (organosilicones), volatile organic compounds (benzene and toluene derivatives), and ethylenes are some of the hidden chemical ingredients present in Gardasil and Covid-19 vaccines [6,8]. Parenteral exposures to these additives at the time of immunization are capable of initiating a myriad of biochemical disturbances encompassing (but not limited to): (a) mitochondrial dysfunction, with or without DAMPs (damage associated molecular patterns); (b) metabolomic anomalies; (c) transcriptional aberrations, with or without epigenetic alterations; (d) reactivation of previously acquired viruses; (e) microbiome alterations; (f) disturbances in cellular impedance; (g) neurotransmitter disruptions; (h) biointegration into matrix macromolecules; (i) changes in cell membrane permeability; and (j) mast cell dysfunction, the latter producing secondary activation of brain microglia cells to trigger neuroinflammation [6,9,10]. To facilitate and amplify such biochemical disturbances it would be necessary to theorize the coexisting presence of individual inherent anomalies, such as reduced hepatic P450 enzyme activity towards xenobiotics, innocuous inborn channelopathies, and altered regulatory T cell function [6,10]. The required convergence of such multifactorial phenomena can explain why chronic non-autoimmune vaccination-induced disorders are infrequent, why diverse disease manifestations and diverse disease severity exist in affected individuals (despite a litany of common complaints), why time to disease onset is variable, why there is broad variability regarding the exact number of vaccine exposures required to initiate symptoms, and why the population at risk for such occurrences is not dependent on a familial autoimmune diathesis. However, once such a disorder is underway, all of the above causation participants and biochemical disturbances may then foster the delayed production of multiple autoantibodies which, in turn, can create secondary amplification loops that circuitously augment and chronically perpetuate the initial acute adverse reactions [8]. These latent events are compatible with the normal chronological evolution of adaptive immune responses, and therefore these autoantibodies would not be the initiators of this type of vaccination-induced disorder. Hence the proposed nomenclature "chronic new onset non-autoimmune rheumatic disorders following Covid-19 vaccination." Parallel events stemming from worldwide contamination of multiple environmental compartments by the same chemicals, coupled with the same innate anomalies, could theoretically initiate (and then chronically perpetuate) many neurologic fatiguing syndromes [7]. Multiple autoantibodies have already been identified in several of the neurologic fatiguing syndromes (especially POTS), regardless of whether or not such syndromes have been vaccine triggered [11]. These autoantibodies can be directed at any part of the nervous system including sensory nerve receptors (e.g., heparan sulfate and chondroitin sulfate moieties), motor nerve receptors, autonomic receptors for acetylcholine, dorsal root ganglia channel proteins, and even the brain (e.g., antibodies to GAD 65 and BDNF).

These pathophysiologic constructs for chronic non-autoimmune vaccination-induced disorders have previously been referred to by this author as a "perfect storm" [8], and this same publication has also pointed out the uncanny resemblance between chronic Covid-19 vaccine-induced ailments and the phenomena manifested by Covid-19 long haulers (long Covid) following SARS-CoV-2 infection. Such resemblances have recently been verified by researchers at Yale School of Medicine [12]. These same researchers have been studying the presence or absence of autoantibodies and other immune abnormalities in both conditions [13], with the future intent to expand this study by searching for non-protein directed autoantibodies in both conditions (e.g., autoantibodies directed against heparan sulfate). However, vaccination against SARS-CoV-2 appears to be a double-edged sword, as a recent publication has reported on the paradoxical appearance of immune suppression following Covid-19 mRNA immunizations [14]. Reconciling all of this with post-Covid-19 vaccination induced myocarditis, thrombotic thrombocytopenia, and systemic connective tissue diseases seem to be a tall order.

Attorneys who participate in the National Vaccine Injury Compensation Program have been besieged by thousands of chronically ailing post Covid-19 vaccine recipients manifesting a variety of legitimate, temporally related, new onset post immunization complaints characteristic of the overlapping clinical features seen in one or more neurologic fatiguing syndromes. These individuals represent a serious emerging public health issue that warrants both formal recognition and coordinated research endeavors. One example worthy of such research is the known suppression of the liver's cytochrome P450 enzyme system by chemicals called ethylenes [15]. PEG (polyethylene glycol) is present in both Pfizer and Moderna mRNA Covid-19 vaccines, and PEO (polyethylene oxide) is also present in Moderna. Individuals inherently manifesting reduced baseline metabolism of xenobiotics could be further compromised after immunization with either of these vaccines via enhanced persistence of various other toxic chemical ingredients present in these two products (a full list of mRNA vaccine ingredients is found in reference # 8). Another project could examine whether or not the non-mRNA Covid-19 vaccines can initiate a chronic illness similar to what is manifested by post-Covid-19 long haulers. This seems particularly relevant with regard to neurologic and psychiatric phenomena. Although over one-hundred different autoantibodies have been identified in cohorts of long haulers, Guillain-Barre syndrome appears to be less frequent following SARS-CoV-2 infection compared to other viral illnesses [16]. Therefore, it might be worthwhile in long haulers to search for the biochemical disturbances and innate anomalies that may be operative in those with chronic new onset non-autoimmune Covid-19 vaccination-induced disorders.

In this author's experience routine rheumatologic polypharmacy in patients afflicted with any of the chronic non-autoimmune vaccination-induced disorders has been an exercise in futility. If one or more secondary amplification loop autoantibodies are identified in such patients, treatment with IV IgG could theoretically be useful. Thus far, however, its effectiveness in Gardasil-induced disease has been inconsistent, raising doubts about its potential usefulness in ailing post Covid-19 vaccine recipients. Alternative medicine disciplines and

modalities may be more beneficial, including (but not limited to): acupuncture; Reiki therapy; Qigong; transcranial pulsed electromagnetic field therapy (formerly known as pico tesla magnetic fields); a ketone producing (ketogenic) diet, because dysfunctional mitochondria cannot repair themselves (nor multiply) in the presence of carbohydrates; other dietary inclusions and exclusions (designed to limit additional chemical exposures); infrared heat; float therapy in hypertonic saline; probiotics; and colon hydrotherapy. Traditional allopathic (western) medicine practitioners might find some value in all of this.

Conclusion

Vaccine development continues to expand, fostered in large part by three years of a Covid-19 pandemic caused by SARS-CoV-2 infections. This, in turn, has heightened the long-standing controversy over new onset vaccination-induced disorders, because these disorders now also encompass the Covid-19 vaccines themselves. Long-standing theories of the mechanisms of disease causation in these genuinely novel scenarios continue to be overly simplistic, in large part due to the ever-expanding magnitude of conflicting observations and the ever-expanding cocktail of vaccine ingredients. The need for pathophysiologic reanalysis of these theories is further reinforced by the emerging diversity and perplexity of new onset rheumatic disorders triggered by the Covid-19 vaccines.

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