Title

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Journal

Proceedings of UCLA Health, 28(1)

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Publication Date

2024-10-18

CLINICAL VIGNETTE

Is it Long COVID or Celiac Disease? A 35-Year-Old Male with Suspected Long COVID Cured by a Gluten Free Diet

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Introduction

There are various definitions of Long COVID and understanding of the long term sequalae of COVID infection continues to evolve. The World Health Organization defines a Post COVID condition as ongoing symptoms at least 3 months after initial COVID infection.[1] A prospective observational cohort study developed a definition based on a broad list of self-reported symptoms. These include abnormal smell or taste, chest pain, post exertional malaise, chronic cough, brain fog, thirst, palpitations, chest pain, fatigue, abnormal sexual desire or capacity, dizziness, gastrointestinal symptoms, abnormal movements, and hair loss.[2] Each symptom is assigned a score, and the composite score is used to identify Long COVID. COVID infection has also been associated with increased risk of developing an autoimmune disorder. These include: Alopecia Areata, ANCA vasculitis, Crohn's disease, Sarcoidosis, and inflammatory rheumatic diseases.[3-5] We present a patient presenting for a Long COVID consultation with complaints attributed to his infection. He was eventually found to have positive celiac serology and treated effectively with a gluten free diet.

Case Presentation

A 35-year-old man was referred to the Long COVID program for multiple complaints, including brain fog, fatigue, dyspnea on exertion, and dizziness. Prior to his COVID infection, he was physically active, with a cognitively demanding job that he did without difficulty. He noted some mild nonspecific brain fog prior to his COVID infection. After his infection his brain fog worsened significantly and was his most bothersome symptom. He also reported short term memory deficits, attention and concentration deficits, sensitivity to light, and was most concerned and impaired by short term memory loss. He also noted some dyspnea on exertion, but was able to remain physically active, without chest discomfort or palpitations. Other symptoms included dizziness, mostly postural upon standing with associated lightheadedness requiring compression stockings. Review of systems was otherwise negative for depression, anxiety, headaches, paresthesia, vertigo, chest pain, post exertional malaise, anosmia, congestion, myalgias, rash or skin changes, pruritis, oral ulceration, nausea, constipation, bloating, diarrhea.

On exam, vital signs were significant for orthostatic hypotension. Supine BP was 142/85 HR 79 lying and decreased to 121/87 HR 86 standing. Head and neck, cardiovascular, pulmonary, and neurologic exams were all within normal limits.

Laboratory testing was unremarkable including complete blood count, iron studies, comprehensive metabolic panel, ANA, anti-SSA/B, rheumatoid factor, TSH, vitamin D, ESR, CRP, RPR, vitamin B12, and HIV. Pulmonary function testing (PFT) was remarkable for maximal expiratory pressure being less than predicted which may reflect expiratory muscle weakness.

The patient was started on Bupropion 150 mg extended release. He was referred to sleep medicine, to speech therapy for cognitive rehab and, pulmonary rehab to strengthen diaphragm. He was instructed to increase hydration and sodium intake for orthostatic hypotension.

When he returned for reassessment, he reported general improvement in symptoms but reported worsened symptoms if he consumed carbohydrates. He instituted a low carbohydrate diet with continued improvement, but not full resolution. Celiac antibody panel was obtained while consuming gluten, and noted a positive transglutaminase IgA at 21.1. He instructed to start a gluten free diet, and all symptoms resolved. He was referred to Gastroenterology, who recommended an upper endoscopy with biopsies, which he chose to forego given complete resolution of symptoms and cost concerns.

Discussion

To confirm the diagnosis of celiac disease, upper endoscopy with duodenal biopsies is required. However, positive transglutaminase antibody and resolution of symptoms with a gluten free diet strongly suggests celiac disease or at minimum, gluten sensitivity. Gluten sensitivity, also known as non-celiac gluten sensitivity (NCGS) has been estimated to affect up to 6% of Americans.[4] Although the mechanism is not well understood, it is postulated that gluten sensitivity may be immune mediated, like celiac disease. Symptoms overlapping with celiac disease including diarrhea, abdominal pain, bloating, nausea, headache, and brain fog.[6] While it remains unclear if this patient had celiac disease or NCGS, the development of new gluten intolerance

after COVID infection suggests he may have had an immune mediated reaction to gluten. Providers should remain vigilant with a high index of suspicion for autoimmunity when evaluating patients with possible Long COVID. This remains on ongoing public health concern, affecting up to 6.9% of US adults in 2022.[7]

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