Scurvy as a Manifestation of Avoidant-Restrictive Food Intake Disorder During the COVID-19 Pandemic: A Case Report

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Background

- Scurvy is a severe deficiency of vitamin C characterized by hematologic, musculoskeletal, and neuropsychiatric symptoms (1-2).
- Though rare today, scurvy may still present in patients with underlying neurodevelopmental or psychiatric conditions (3).
- People with autism spectrum disorder (ASD) are vulnerable to this nutritional deficiency due to selective eating, which occurs in up to 95% of children with this diagnosis (2, 4).
- Avoidant-Restrictive Food Intake Disorder (ARFID) is a newer diagnosis added to DSM-V in 2013 (5).
- ARFID is an eating or feeding disturbance often associated with anxiety disorders, ASD, and attention-deficit/hyperactivity disorder (ADHD) (6-7).
- Food selectivity results in severe nutritional deficiencies, weight loss, dependence on enteral feeding, and/or significant interference with psychosocial functioning (8).
- Reports of scurvy in patients with ASD are limited to a pediatrics population (4).
- There are no known reports of scurvy presenting in an adult with ARFID and potential ASD.

Case Presentation

A 26-year-old male with history of ADHD was admitted with lower extremity weakness, perifollicular petechiae, and anemia concerning for scurvy. Psychiatry was consulted to evaluate for an underlying psychiatric condition contributing to his presentation.

History of Present Illness

Ate exclusively ”pizza bagels” for preceding eight months despite having access to other food options.

Developed leg pain/weakness that progressed to significant ambulatory dysfunction in the weeks PTA.

Denied symptoms of depression, mania, psychosis, anorexia nervosa, or bulimia.

Past Psychiatric History

History of unspecified depressive disorder and ADHD treated in the past with methylphenidate.

No prior history of psychosis, intellectual impairment, substance use, or diagnosed eating disorder.

No history of psychiatric hospitalization. One suicide attempt via overdose on sleep medication.

No current medications or outpatient psychiatric follow up.

Family History: Unknown

Past Medical History: None

Social History

Lives in an apartment with a roommate.

Has had access to food options (local grocery store) during the pandemic.

Graduated high school and attended 2 years of college, but did not complete degree.

Currently unemployed but previously worked as a valet prior to the pandemic.

Reported difficulties with social functioning since childhood.

Long history of food selectivity for unclear reasons.

Specific and restricted range of current interests: video games.

Minimal psychosocial support.

Case Presentation (Continued)

Mental Status Exam: Thin, malnourished Caucasian male. Cooperative with good eye contact. No psychomotor disturbance. No abnormal movements. Spontaneous, fluent speech with normal rate, rhythm, and prosody. Mood was "pretty fine." Euthymic affect with normal range. Linear, goal-directed thought process. No delusional thought content. No perceptual disturbances. No suicidal or homicidal ideation. Clear sensorium. Limited insight and judgement.

Physical Exam: Decreased bulk, decreased range of motion, and contractures in bilateral lower extremities, Coiling of hair, perifollicular petechiae, and scattered ecchymoses throughout. Gingival bleeding present.

Labs: Hgb 9.2 g/dL, vitamin C 0.1 mg/dL, 25-hydroxy vitamin D 7 ng/mL, calcium 8.3 mg/dL, albumin 3.2 g/dL, prealbumin 8 mg/dL, PT 16.8 s, iron 20 ug/dL, iron saturation 10%. B12, folate, TSH, and electrolytes were within normal limits.

Hospital Course: Vitamin C and D were repleted with significant symptomatic improvement. He was discharged to a skilled nursing facility with recommendation for outpatient neuropsychiatric follow up.

Discussion

- Our patient met DSM-V criteria for ARFID (Table 1), and there was high suspicion of ASD due to restricted and repetitive behaviors, hyperfocus on restricted range of interests, and longstanding deficits in social interaction (6).
- His presentation was not consistent with any other eating disorders. Unlike in anorexia nervosa, there is no disturbance of body image or fear of gaining weight in ARFID (8).

- The adult psychiatric literature on scurvy is focused on psychotic disorders, substance use disorders, or eating disorders such as anorexia nervosa – known risk factors for Vitamin C deficiency (1, 4, 9).
- Pediatric case reports have described scurvy as the initial presentation of ASD co-occurring with ARFID (4).

Table 1. DSM-V Criteria for Avoidant-Restrictive Food Intake Disorder

A. An eating or feeding disturbance as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following:	1) Significant weight loss (or failure to achieve expected weight gain or faltering growth in children). 2) Significant nutritional deficiency. 3) Dependence on enteral feeding or oral nutritional supplements. 4) Marked interference with psychosocial functioning.
B. The disturbance is not better explained by lack of available food or by an associated culturally sanctioned practice.	
C. The disturbance does not occur exclusively during the course of anorexia nervosa or bulimia nervosa, and there is no evidence of a disturbance in the way in which one’s body weight or shape is experienced.	
D. The disturbance is not attributable to a concurrent medical condition or not better explained by another mental disorder.	

- In ARFID, food selectivity and/or avoidance is due to sensory sensitivity to food, lack of interest in food or low appetite, and/or fear of aversive consequences from eating like choking (7, 10).
- Food selectivity is more commonly reported in children with ASD than in typically developing children (11).
- In ASD, there is impaired processing across senses, resulting in food neophobia (12).

- There is significant overlap among the eating/feeding features of ASD and ARFID (Figure 1) (11-14).
- Studies estimate a comorbidity rate of up to 21%. Comorbidity may occur due to sensitivity to sensory aspects of food as well as restricted and repetitive behaviors (7).
- Treatment for ARFID is heterogenous in terms of providers, setting, and approach. Currently, there are no consensus guidelines for treatment (5, 10).

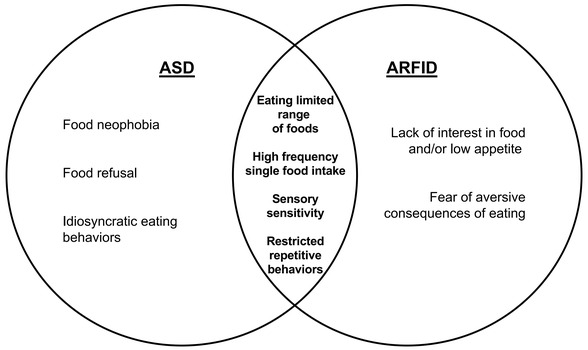

Figure 1. Overlapping eating/feeding features of ASD and ARFID

Conclusions

- To our knowledge, this is the first reported case of severe scurvy in an adult with ARFID and potential co-occurring ASD. It is the second report of scurvy during the SARS-CoV-2 (COVID-19) pandemic.
- We highlight the importance of keeping a broad differential that includes neurodevelopmental disorders when evaluating adults with avoidant or restrictive eating patterns.
- Though uncommon, scurvy may present in vulnerable populations particularly under the strains of the COVID-19 pandemic.
- ARFID is highly comorbid with ASD, and there is significant overlap between the features of these diagnoses. More controlled studies are needed to inform treatment guidelines for ARFID.

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