Global Pediatric Health
January-December 2015: 1–3

DOI: 10.1177/2333794X15579061
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Complicated *Helicobacter pylori* Masquerading as an Eating Disorder

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Case

The patient was a 12-year-old half-Caucasian/half-African-American male who initially presented to the Adolescent Medicine Eating Disorders Clinic for evaluation of poor appetite and dietary intake, weight loss, and intermittent vomiting. Two years prior to initial presentation, he had lost 20 pounds (9 kg) over the course of 3 months due to abdominal pain and intermittent vomiting and had been described as overweight before that. On presentation, his diet consisted mostly of carbohydrates and was limited in protein and fat. He denied that the vomiting had ever been self-induced but did associate it with feeling anxious. He did not endorse body image distortion or fear of weight gain. He had been following with a psychiatrist and therapist for anxiety and was on fluoxetine 20 mg per day.

Family history was significant for overweight, and his mother had lost 100 pounds after having gastric bypass surgery.

On exam on presentation, height was 142.9 cm (25th percentile) and weight was 36.4 kg (25th percentile) with a body mass index of 17.8 (58th percentile). Abdominal ultrasound and blood work were reportedly normal, except for mild anemia, which was felt to be associated with the malnutrition and weight loss. The patient was ultimately admitted to a day treatment program for younger patients with eating disorders for 2 months. He did very well in the program, gaining 14.6 pounds (6.6 kg), and continued to grow and gain weight while being followed as an outpatient. He was treated with pantoprazole for dyspepsia with relief of symptoms and continued on fluoxetine for anxiety.

Five months after discharge from the program, the patient had lost approximately 6 pounds (2.75 kg) over 6 weeks, but did not have any abdominal complaints or other symptoms. The weight loss was attributed to an increased activity level from swim team participation. Although he initially gained all of his weight back over the next 2 months, he presented again 2 months after that with early satiety, generalized abdominal pain, intermittent nonbloody, nonbilious emesis, and an 8 pound (3.6 kg) weight loss. Laboratory work was remarkable for a hemoglobin of 10 g/dL, a low iron level, an iron saturation of 3%, and stool positive for occult blood. Erythrocyte sedimentation rate, tissue transglutaminase IgA, and total IgA were all normal.

The patient was referred to Pediatric Gastroenterology for further evaluation and management. Upper endoscopy revealed nodularity of the gastric antrum, and erythema and stricture of the pyloric channel. Balloon dilatation of the stricture was performed. Biopsies were positive for *Helicobacter pylori* gastritis. Colonoscopy was normal. The patient was treated with lansoprazole, amoxicillin, and clarithromycin. Symptoms resolved within 2 months and the iron deficiency anemia resolved at 4 months. He continued to have follow-up with Adolescent Medicine over the following year and did well.

Discussion

It is not uncommon for patients with eating disorders to present with gastrointestinal complaints, including dyspepsia, nausea, vomiting, lack of appetite, early satiety, and constipation. Abdominal complaints and weight loss can be attributed to an eating disorder, as patients may use these complaints as their excuse for food avoidance. Although the patient in this case did not meet the diagnostic criteria for anorexia nervosa (AN), and did not fit the typical profile, he did initially fall under what would now be diagnosed as avoidant/restrictive food intake disorder (ARFID) in the 5th Edition of the Diagnostic and Statistical Manual of Mental Disorders (*DSM-5*)[1] (see Table 1). Although not really a new presentation, the ARFID diagnosis now formally recognizes patients with restrictive eating, but without weight or shape concerns. Diagnosis requires at least one of the following: weight loss or lack of expected gain during a period of

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Table 1. Diagnostic Criteria for Avoidant/Restrictive Food Intake Disorder (ARFID)[a].

What Is ARFID?	What ARFID Is Not
• A problem with eating or feeding (eg, seeming disinterest in food or eating; repulsion to certain foods based on their sensory qualities; fears about aversive effects of eating) leading to recurrent inability to take in adequate nutrition and/or energy coupled with one (or more) of the following: ○ Major nutritional deficiency ○ Substantial weight loss (or lack of weight gain) ○ Reliance on nasogastric or gastric tube feeding or oral nutrition supplements ○ Impaired psychosocial function	• The eating problems are not due to body image disturbance, and anorexia nervosa or bulimia nervosa cannot be diagnosed instead. • Feeding or eating problems are not the result of scarcity of food or a culturally endorsed tradition. • The disordered eating is not due to a concomitant medical problem or another psychiatric disorder, so that if the medical or psychiatric disorder is treated, the eating problems resolves.

[a]Adapted from the *Diagnostic and Statistical Manual of Mental Disorders*, 5th Edition, American Psychiatric Association, 2013. Originally published by Nicely et al.[3]

growth, nutritional deficiencies, reliance on oral or enteral nutritional supplementation, and/or psychosocial dysfunction. Recognized subtypes include: individuals who do not eat enough/show little interest in feeding, individuals who only accept a limited diet in relation to sensory features, and individuals whose food refusal is related to aversive experience, for example, choking or vomiting. Our patient could have fallen into the first and/or third category. The disorder may exist concomitantly with another medical or psychiatric disorder, as long as separate clinical attention is needed for the eating disorder.[1] Patients with ARFID have been found to be younger on average, and to have a higher preponderance of males than those with AN.[2,3]

The patient did well in the eating disorder program, as his anxiety was controlled and he was in a supervised setting for eating. It is unknown whether or not he had *H pylori* at the beginning of his evaluation, although he did have a milder anemia on presentation. The anemia worsened a year later, when the gastrointestinal workup commenced. There is little in the literature about the association between *H pylori* infection and eating disorders. A couple of studies have shown low prevalence of *H pylori* serum IgG in adolescents with eating disorders and gastrointestinal symptoms.[4,5] However, the sensitivity and specificity of serologic studies for *H pylori* infection vary widely in children and adolescents and are not currently recommended for diagnosis of active infection in the clinical setting.[6] No studies have shown association of eating disorders with *H pylori* histologic confirmation, which is the gold standard for diagnosis.[6] The symptoms of *H pylori* gastritis can be vague and can easily be attributed to a feeding/eating disorder. The use of a proton pump inhibitor in this patient prior to diagnosis may have also masked some of his symptoms or progression of disease for some time.

Iron-deficiency anemia is relatively uncommon in restrictive eating disorders. It has been found in 22% of a community sample of adolescent girls with AN,[7] and it is generally seen more frequently in chronic and severely ill adult patients.[8] Therefore, a young patient that presents with a possible eating disorder, but has anemia, should have other causes investigated. Notably, studies have shown an association between iron deficiency and *H pylori* infection. Consequently, evidence-based guidelines recommend *H pylori* testing in children that have refractory iron deficiency when other causes have been ruled out.[6]

The finding of a pyloric stricture on upper endoscopy provides a reason for the unusual presentation of this case as persistently resembling an eating disorder. It is very possible that this patient had a peptic ulcer that led to the complication of a pyloric stricture. The proton pump inhibitor may have initiated the healing process of a peptic ulcer, which led to fibrosis in that area of the digestive tract, ultimately causing a stricture.[9] Peptic ulcers do have an association with *H pylori* infections, and 2% to 7% of adult patients with a peptic ulcer can develop a pyloroduodenal obstruction.[10] As pyloric strictures are a rare finding even in adults with *H pylori* infection, this patient's presentation at 13 years of age is even more unique.

While this patient had symptoms concerning for an eating disorder, his iron deficiency anemia ultimately prompted other considerations in the differential diagnosis. He would have met *DSM-5* criteria for ARFID, as his ongoing gastrointestinal symptoms led to anxiety, and avoidance of eating, with subsequent weight loss, necessitating specialized eating disorder treatment. This case highlights the importance of a careful assessment of a patient with a suspected eating disorder, especially when the case is less clear-cut. As more becomes understood about ARFID, it will be especially crucial to investigate for other medical or psychiatric disorders in these patients.

Author Contribution

MS and MO shared responsibilities on the drafting and critical revision of the manuscript.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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