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Eating Disorder Symptoms Improved by Antireflux Surgery: A Case Report with a Six-Year Follow Up

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Abstract: Background: Anorexia nervosa (AN) is a chronic disorder that can overlap with lower esophageal sphincter failure and delayed gastric emptying. Patients with anorexia nervosa or other eating disorders may have a high incidence of gastrointestinal complaints, which can also be observed in gastroesophageal reflux disease (GERD). The overlap in the symptoms of these disorders may cause problems in differential diagnosis and treatment decisions. *Case description:* We report on a case of a patient with anorexia nervosa who did not benefit from conventional treatment strategies such as psychotropic drugs and psychotherapy, but remitted after antireflux surgery. *Conclusion:* When dealing with patients with symptoms of anorexia nervosa, physicians should keep in mind that these patients may have serious esophagogastric complications that can affect their response to psychiatric treatment. Alternatively, some patients with primary esophageal disorders may present with symptoms of eating disorders.

Background

Anorexia nervosa (AN) is a chronic disorder that can overlap with lower esophageal sphincter failure and delayed gastric emptying (1). Even in the absence of esophageal motility problems, patients with AN have a high incidence of gastrointestinal complaints, which can also be observed in gastroesophageal reflux disease (GERD).GERD is a condition which develops when the reflux of stomach contents causes troublesome symptoms and/or complications. Etiologic factors for GERD include increased offending agents such as gastric secretions or bile acids, transient relaxation of the lower eosophageal sphincter, esophageal motility disorders and delayed gastric emptying, hiatal hernia, attenuated ability of the cells lining the esophagus to resist acid injury. The cardinal symptoms of GERD are heartburn and regurgitation. Heartburn is defined as a burning sensation in the retrosternal area, and regurgitation as the perception of flow of refluxed gastric content into the mouth or hypopharynx (2). The effortless quality of the return of gastric contents distinguishes regurgitation from the forceful experience of emesis. Although a diagnosis of GERD can be made without endoscopically visible esophageal injury, esophageal endoscopy and 24-hour pH monitoring further support this diagnosis (3). Patients with eating disorders may sometimes experience symptoms that resemble GERD, such as bloating, abdominal distention and vomiting (1). Furthermore, vomiting can result in severe esophageal and gastric lesions, from esophagitis to perforation of the esophagus or stomach (4). This overlap in the symptoms of AN and GERD may cause problems in differential diagnosis and treatment decisions. We report on a case of a patient with an eating disorder who did not benefit from conventional treatment strategies for AN but recovered after antireflux surgery.

Case Description

A 25-year-old, married woman was admitted to the psychiatric clinic due to severe weight loss, vomiting and depressive symptoms. Her symptoms had started two years before, one month after her marriage.

She had grown up in a middle to low economic status, traditional family, in which girls were not

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allowed to get higher education or to work. Although she was a successful student, her family did not send her to school after she completed her secondary education. When she was 22, her family arranged a marriage with a prison warden who was a complete stranger to her before they got engaged. Although she did not want this marriage, her objections were not taken into consideration and the young couple started living with the mother of her husband. The patient had a problematic marriage. She had to do all the housework alone, her mother-in-law interfered in all the important decisions about the couple, and her husband yelled at her or hit her during their discussions. Three months after the marriage, she developed depressive symptoms, but did not receive any treatment for this condition. Six months later, she suddenly started vomiting everything that she ate, without provocation.

During the year that followed, her depressive state improved, but she went on regurgitating and lost approximately 20 kilograms. When she was examined by a gastroenterologist, an esophageal endoscopy revealed that she had lower esophageal sphincter dysfunction and grade A esophagitis due to gastroesophageal reflux. A 24 hour pH monitoring revealed pathological reflux. As she did not benefit from medical treatment, using omeprazole 40mg/day, she was referred to a psychiatrist, who decided she should be hospitalized. She was admitted to the general psychiatric ward of a university hospital.

On admission, she weighed 31 kg, with a height of 160 cm. Her body mass index was 12.1 and she had lost 40% of her body weight. She described all the problems she had with her family and husband with a restricted affect. She did not accept she was too thin, which reflected a body image disturbance. She did not accept the seriousness of her condition. A detailed psychiatric history revealed that she had been preoccupied with her weight and body image from the time she was an adolescent, but she did not report any previous episodes of vomiting or weight loss. She had had amenorrhea for eight months and ate very little, and although she said she did not want to do it, she vomited right after meals, without any provocation. Although she denied that she exercised excessively, in the ward, she wanted to go walking or running several times a day, and when she was not allowed, she tried to carry out a workout routine in her own room, spending more than three hours exercising every day. Neither she nor the hospital staff reported any binge eating episodes. She did not report any psychiatric disorder in her family.

She was prescribed fluoxetine 20 mg/day and a 1500 kcal/day diet, but she never finished her portions, because she "felt like throwing up" when she ate too much. She always vomited right after meals. To prevent her from vomiting, which took place 4–5 times a day throughout her stay in the ward, behavioral methods were used. She also received interpersonal therapy, focusing on her problems with her mother-in-law and husband. The main theme that emerged in her treatment was her lack of control over her life. The only acceptable way she could subconsciously protest her demanding husband and mother-in-law was being so sick that she did not have to do housework.

Despite intensive psychotherapeutic and psychopharmacologic intervention, including fluoxetine up to 40 mg/day, which was replaced by amitriptyline 100 mg/day, in combination with omeprazole 40 mg/day and olanzapine 5 mg/day, she could only reach 35 kilograms. Although amitriptyline can induce disturbances in gastrointestinal motility more than many other antidepressants due to its heightened anticholinergic activity, it was chosen because of our need to use a second line, effective antidepressant. Her mood was slightly better, but she still went on vomiting and refusing to eat to avoid vomiting after three months on the ward. She no longer insisted on exercising excessively, and she said even though she never wanted to be too fat, she was also concerned about the health consequences of such a low body weight, so she wanted the vomiting problem to be solved. When the gastroenterologists evaluated her again, they recommended that her serious gastroesophageal reflux required operation. She underwent a Nissen Fundoplication, using an open procedure. A jejunostomy tubing was also placed to provide nutritional support.

In the postoperative phase, the patient had no problems. All psychiatric medication was stopped. After a few weeks, the jejunostomy tube was taken out and she started eating normally and gaining weight. In the following two years, she gained 15 kilograms and after six years, although she still has problems with her husband and his family, she can cope with them better and has not had any depressive

episodes since then. She is still concerned a lot about her weight, but her body image is not distorted, and she has not vomited in the last six years.

Limitations and Conclusions

This case illustrates the problems clinicians face when dealing with gastroesophageal problems and eating disorders. A majority of patients with AN and bulimia nervosa (BN) have gastrointestinal problems like belching, flatulence and constipation (4, 5) and serious esophageal complications such as esophagitis, esophageal ulceration and strictures due to vomiting (6). Slowed gastric emptying of solids has been well documented in patients with AN (7–13), and the delayed gastric emptying appears to contribute to the symptoms of bloating, distention and early satiety, which increase the difficulties of refeeding. The pathophysiological mechanisms underlying disturbance in gastric emptying are uncertain (14). In such a serious case of AN, such gastrointestinal problems may be expected. Table 1 summarizes publications that describe the gastrointestinal disturbances found in patients with eating disorders. The significant delays in gastric emptying shown in these studies improved with weight gain and correlated with symptoms of eating disorder.

However, after the significant improvement in this patient's symptoms after surgery, we have to rule out the possibility that this patient was a primary GERD patient whose personal history

Table I. *Summary of studies on gastrointestinal disturbances found in patients with anorexia nervosa (AN) and bulimia nervosa (BN)*

Study	Participants	Key findings
Abell et al., 1987 (7)	8 patients with AN, 8 matched controls	Significant delays in gastric emptying for solids, no difference for liquids. All AN patients showed disrhythmias and reduced frequency of antral contractions, which did not remit after clinical improvement
Dubois et al., 1979 (8)	15 patients with AN 11 controls	Significant delays in liquid emptying Gastric emptying improved with weight gain but remained significantly delayed compared to controls
Rigaud et al., 1988 (9)	14 patients with AN	Gastric emptying delayed Symptoms of GI stress present in 78% of AN patients and correlated with delays in emptying After weight gain, 73% of patients showed improved liquid emptying, 64% showed improved solid emptying, correlated with GI symptoms
Robinson et al., 1988 (10)	22 patients with AN 10 patients with normal to high weight BN 10 healthy controls	Gastric emptying delayed for both solids and liquids in AN compared to BN and controls Dietary intake rather than body weight is the major factor for delayed gastric emptying
Geliebter et al., 1992 (11)	9 patients with BN 9 controls	Gastric capacity increased in women with BN
Walsh et al., 2003 (12)	16 patients with BN 16 healthy controls	BN patients showed less gastric relaxation after meals Minimal distending pressure (the pressure needed to overcome the intra-abdominal pressure) was decreased in patients who frequently vomited
Zimmerli et al., 2006 (13)	16 patients with BN 13 healthy controls	No difference in gastric compliance BN patients have diminished sensitivity to gastric distention

misled us to a diagnosis of AN. Patients with serious esophageal pathology can show up with symptoms resembling AN or BN. In a study investigating esophageal motility in 30 patients diagnosed as having primary AN, seven were found to suffer from achalasia, one from diffuse esophageal spasm and one from severe GERD (15). On the other hand, patients with eating disorders may develop esophageal pathology along the course of their illness. A recent case report describes a patient with more than a 30 year history of BN, who developed a near-fatal achalasia. When she started vomiting involuntarily, in a pattern completely different from the usual, it was misdiagnosed as an exacerbation of her BN (16). In another study, Kiss and colleagues (17) investigated the prevalence of esophageal motor disorders in 32 women with BN and found three cases of achalasia. However, they concluded that there was no reason to suspect that recurrent vomiting has led to this condition. This interpretation could be questioned, as three cases out of 32 represents a prevalence of 9% compared with a prevalence of only 0.008% of achalasia in the general population (16, 18).

Another important question is the validity of the diagnosis. During the admission, the DSM-IV (19) criteria were used. The patient met all the criteria to be diagnosed as AN, purging type: She refused to keep her body weight at 85% of her normal body weight for age and height, her BMI was 12.1. She exercised to lose weight despite being underweight, and did not accept that she was too thin and denied the seriousness of her medical condition, which included serious electrolyte imbalance. She had amenorrhea for eight months. We know that AN usually starts at an earlier age and is a chronic disorder, with a mean of 4–10 years from onset to remission (20). A retrospective diagnosis of Eating Disorders Not Otherwise Specified (EDNOS – mixed restricting purging type) could help explain the late onset and the fast remission of the course of illness. However, considering the very low BMI of the patient at admission and the life threatening nature of anorexia nervosa, it was wise to give the diagnosis of anorexia nervosa precedence over other eating disorders.

The patient's poor response to fluoxetine before the operation can be explained by her low body weight. It has been hypothesized that patients with very low body weight may be unresponsive to SSRIs such as fluoxetine due to alterations in tryptophan absorbtion (21). The SSRI treatment could have become more effective after the solution of her severe reflux and restoration of some of her body weight.

It is known that stress and psychiatric diagnoses are major risk factors for upper gastrointestinal symptoms (22) and that stress exacerbates the symptoms of GERD (23). In our patient, stressful life events and depression preceded the onset of gastroesophageal symptoms. It is possible that vomiting started because of her stressful condition but eventually resulted in real esophageal pathology. It would have been easier if we could have diagnosed this patient who became well after esophageal surgery as a "GERD patient wrongly diagnosed as AN." But the role of social stresses in the onset of her illness, her clear denial of dangerous loss of weight, the distortion in her body image and her constant attempts to exercise excessively made the differential diagnosis harder. Serious life stresses have been implicated in the etiology of both AN and BN, with approximately 70 percent of cases being triggered by severe life events, especially in the area of close relationships with family or friends (24, 25). In the context of a severe life event in the year before the onset of AN, as was the case with our patient, some patients may even make a full recovery from a first episode (26).

We cannot also rule out the possibility that this patient had AN at admission, but spontaneously got better after the esophageal surgery. However, keeping in mind that eating disorders are usually chronic illnesses and that esophageal surgery produces unfavorable results in patients with psychiatric diagnoses (27), spontaneous remission after Nissen Fundoplication is unlikely. She probably had severe GERD due to the hyperemesis caused by the eating disorder, but the AN at least partially remitted as a result of pharmacological and psychotherapeutic interventions, leaving only the GERD symptoms. After the fundoplication treated the esophageal problems, she was able to stop vomiting.

In conclusion, this case is a very interesting example of problems faced when dealing with patients who have overlapping symptoms of eating disorders and GERD. When dealing with patients who have symptoms of AN, physicians should be aware that

these patients may have serious esophagogastric complications that can affect the outcome of the psychiatric condition. Furthermore, psychiatrists should always keep in mind that some patients with primary esophageal disorders may present as eating disorders. A detailed investigation of the patient's history and a gastroenterology consultation should always be included when evaluating such patients.

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