Achalasia mistaken as eating disorders: report of two children and review of the literature
Jan Däbritz, Dirk Domagk, Martina Monninger and Dirk Foell

Eating disorders are commonly considered diagnoses in young women who present with unexplained weight loss and vomiting. Our objective was to report the increased awareness of eating disorders and that it is likewise important to recognize that organic pathology (achalasia) can cause symptoms that may mimic an eating disorder and lead to misdiagnosis. Two case reports are presented and a review of the existing literature is provided. In the first patient, initial diagnosis of nonclassified eating disorder based on a pubertal conflict was made, and 3.5 years later diagnosis of primary achalasia was established. Atypical bulimia nervosa was initially suspected in the other case, but diagnosis of achalasia was established at an early stage of evaluation. The exclusion of organic disease must be a priority, even if a psychotherapeutic intervention may be needed in the global care of eating disorder patients. Esophageal achalasia should be considered in anyone presenting with difficulty swallowing or dysphagia, even if other features suggest anorexia nervosa or bulimia nervosa. Eur J Gastroenterol Hepatol 22:775–778 © 2010 Wolters Kluwer Health | Lippincott Williams & Wilkins.

Keywords: achalasia, anorexia nervosa, bulimia nervosa, diagnosis, dysphagia, eating disorder

Introduction
Eating disorders were often overlooked in the past, and patients underwent exhaustive medical investigations to evaluate the etiology of weight loss and behavioral changes [1]. During the last decade, medical personnel and lay public became increasingly aware of eating disorders, thereby facilitating the identification of these patients [2]. Consequently, it is important to recognize that organic pathology can cause symptoms that may mimic an eating disorder and lead to misdiagnosis. On the basis of these reports of two children who initially presented as eating disorders, but were eventually diagnosed with achalasia, a review of the existing literature is provided.

Case 1
A 14-year-old Caucasian female presented with weight loss of approximately 10 kg over 9 months, recurrent vomiting and abdominal pain during meals. Three weeks after collapsing at school, she was referred to the Department of Pediatric Psychosomatic Medicine of our University Children’s Hospital by her primary care physician because of anorexia nervosa with bulimic aspects for further therapy. Admitting weight was 41.1 kg (10th percentile for age; body mass index (BMI) 16.8 kg/m²). The patient denied eating attacks, spontaneous or self-induced vomiting, and was believably unconcerned about her figure and intake of calories. She stated she was trying to gain weight, but that she hears voices which bar her from eating. Problems with difficulty swallowing and/or belching, chest pain, regurgitation, and heartburn were not reported. The patient had not started menstruating. Past medical history and family history were noncontributory. According to the patient and her parents, the vomiting problem and weight loss began with or were caused by an acute gastroenteritis. The physical examination, comprehensive laboratory testing, stool examinations, and psychodiagnostic tests (including body schema test) were normal. The clinical impression included normal intelligence, a child-like behavior pattern with reserved attitude and difficulty with peer relationships. Furthermore, the initial period of assessment showed the impression that the patient attempted to appeal to the parents’ solicitousness by repeated vomiting as she had an unsolved conflict with becoming adolescent. In the course of inpatient treatment, the implementation of initially strict light diet, bed rest and close mother’s care and following successive normalization led to significant improvements with weight gain and disappearance of vomiting and abdominal pain. After 3 months of hospitalization, diagnosis of nonclassified eating disorder based on a pubertal conflict was made. As vomiting was no longer present, the patient had gained weight, and in consideration of the psychological component further evaluation of the gastrointestinal (GI) tract was not pursued and the patient was discharged in good condition (BMI 17.5 kg/m²). Three and a half years later, at the age of 18 years, the patient was...
again admitted to the Department of Gastroenterology of our University Hospital because of recurrent aspiration pneumonia and detection of esophagus stenosis and megaesophagus in computed tomography scans of the thorax. Furthermore, she now complained of infrequent difficulty in swallowing and abdominal fullness after food intake. Dysphagia or regurgitation was again not reported. Admitting weight was 53.9 kg and height was 160 cm (BMI 21.1 kg/m²). Esophagogastroduodenoscopy, endosonography, and barium esophagogram (Fig. 1) confirmed suspicion of primary achalasia. Manometric evaluation was not feasible because of extensive dilatation of the esophagus. Pneumatic dilatation (35 mm) was successfully performed three-fold within 10 days and without complications. Symptoms resolved and follow-up at month 3 showed significant weight gain (4 kg) and no symptoms of esophageal dysfunction. Pneumatic dilatation (35 mm) was repeated twice at this time to assure long-term consolidation of therapy success and the patient was discharged in a stable condition.

Case 2
A 16-year-old Caucasian female had a history of 11 kg weight loss over the past year and increasing vomiting after meals and beverages since 2 years. Atypical bulimia nervosa was suspected and she was referred to our Pediatric Department of Psychosomatic Medicine. Admitting weight was 49.7 kg (15th percentile for age) and height was 174.5 cm (90th percentile for age; BMI 16.3 kg/m²). The patient denied eating attacks, spontaneous, and self-induced vomiting. She was believably aware of her eating problems and stated she was trying to gain weight. The patient’s subjective impression as well as inspection of vomited material showed no evidence of contact with gastric acids. Problems with difficulty swallowing or belching, chest pain, regurgitation, and heartburn were not reported. The patient reported worsening school achievements, circulation problems, impaired athleticism, and limited concentration capacity. She seemed to have close friends and was not withdrawn from social activities. Two years ago, she was physically active (as she was active in sports, e.g. volleyball). There was a lack of family conflict (e.g. around food), and past medical history and further family history were noncontributory. According to the parents, the vomiting problem and weight loss were caused by an introverted and under-confident behavior pattern. The physical examination and laboratory tests were normal. The initial period of assessment showed the absence of well-defined psychological problems, a high level of suffering, and her unusual complaint of physical discomfort with eating. A nasogastric tube was placed and further evaluation by our Pediatric Gastroenterology team was initiated at an early stage. A barium swallow showed decreased peristalsis of the esophagus and the absence of stenoses or stricture (Fig. 1). Esophagogastroduodenoscopy showed esophageal retention of liquid and confirmed suspicion of primary achalasia. Esophageal manometrics were performed and results were strongly consistent with achalasia. Pneumatic dilatation of the achalatic gastroesophageal sphincter to a maximum diameter of about 3 cm was performed, after which the patient could eat a regular diet without difficulty. After her most recent follow-up, she was having no eating difficulties or vomiting, and her weight had increased.

Discussion
Eating disorders are commonly considered diagnoses in young women who present with unexplained weight loss and vomiting. In contrast, achalasia is a rare disorder of the esophagus and dysphagia, the initial and main clinical feature of achalasia. Often, several years elapse before the disease is diagnosed, and, during this time, other symptoms, such as vomiting and weight loss, are common [3]. During this period, achalasia can be mistaken for anorexia nervosa or bulimia nervosa, although reports of achalasia in adults and adolescents misdiagnosed as eating disorder exist in the literature [1,3–13]. Differential diagnosis between achalasia and eating disorders is not always obvious. It has been reported that, for example, esophageal motor disorders and upper GI symptoms are...
common in patients with a diagnosis of primary anorexia nervosa, and willful avoidance of food and spontaneous or self-induced vomiting have been reported in patients with achalasia [1,10–13]. Thus, GI disturbances are not uncommon in patients with eating disorders, and many GI diseases may present like eating disorders [14]. Errors in diagnosis could be related to delay in obtaining appropriate investigations or misinterpretation of their results, and a careful clinical history can localize GI motility disorders and result in appropriate diagnostic tests [15–17]. Duane et al. [2] recommend that dysphagia should be assumed to have a physical cause, although psychiatric symptoms are common in patients with esophageal contraction abnormalities.

Patients with eating disorders are subject to a variety of physical and medical concerns, which need an equitable and sufficient treatment to avert serious health consequences and risk of death [18,19]. Indeed, eating disorders are medical catastrophes, with anorexia being the leading cause of death in young women between 15 and 24 years of age [20]. The decision about whether a patient should be hospitalized on a psychiatric versus a general medical unit should be made based on the patient’s general medical and psychiatric status, the skills and abilities of local psychiatric and general medical staff [21]. Basically, people with eating disorders requiring inpatient treatment should be admitted to a setting that can care for the patient’s general medical and psychiatric problems [22]. In recent years, there was an increasing awareness of the need of integrative treatment and units providing simultaneous internal medicine and psychiatric care for patients with eating disorders [23,24]. Hereby, multidisciplinary units reflect the consensus view that care and treatment of patients with eating disorders must often involve clinicians from different health disciplines including psychologists, psychotherapists, physicians, dietitians, and nurses [18,19].

Systematic analyses on the prevalence of achalasia among those patients who are initially diagnosed with eating disorders have not yet been performed. It is conceivable that the rate of misdiagnosed cases that were not presented in publications is significantly higher than reported. The differentiation between eating disorders and achalasia may be especially difficult in children. In our review of existing case reports, a total number of 14 patients could be identified in whom achalasia was diagnosed after initial treatment as eating disorders. Half of these patients were younger than 18 years when presenting with symptoms. There is a clear female predominance with only two male patients out of 14 (Table 1). Our two additional patients (age at presentation 14 and 16 years, respectively) were also female. Although the time interval from first presentation leading to the initial diagnosis of an eating disorder to the final diagnosis of achalasia was 3.5 years in the first child, the

### Table 1  Case reports of achalasia mistakenly diagnosed as eating disorder

<table>
<thead>
<tr>
<th>Report</th>
<th>Patient number</th>
<th>Age (year)</th>
<th>Sex (F/M)</th>
<th>BW (kg)</th>
<th>BH (m)</th>
<th>BMI (kg/m²)</th>
<th>Presenting symptoms and duration</th>
<th>Duration of psychiatric care</th>
<th>Diagnostics</th>
<th>Therapy</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dessilles et al. [14]</td>
<td>1</td>
<td>24</td>
<td>M</td>
<td>NA</td>
<td>NA</td>
<td>17.6</td>
<td>VR, WL, D, H (7 months)</td>
<td>NA</td>
<td>BE</td>
<td>PD</td>
<td>R</td>
</tr>
<tr>
<td>Duane et al. [2]</td>
<td>2</td>
<td>17; 14</td>
<td>F; F</td>
<td>28.8; 30.8</td>
<td>NA</td>
<td>NA</td>
<td>D, VR, WL, Co (18 months); D, VR (3 months)</td>
<td>NA; 9 months</td>
<td>BE, EGD, ES</td>
<td>PD</td>
<td>R; RT</td>
</tr>
<tr>
<td>Garcia et al. [7]</td>
<td>1</td>
<td>21</td>
<td>F</td>
<td>NA</td>
<td>NA</td>
<td>15.2</td>
<td>VR, WL (11 months)</td>
<td>NA</td>
<td>BE, EGD, EM</td>
<td>SI</td>
<td>R</td>
</tr>
<tr>
<td>Kenney [12]</td>
<td>1</td>
<td>14</td>
<td>F</td>
<td>39.0</td>
<td>1.54</td>
<td>16.4</td>
<td>VR, WL, A (8 months)</td>
<td>2 weeks</td>
<td>BE, EGD</td>
<td>PD</td>
<td>R</td>
</tr>
<tr>
<td>Marshall and Russell [1]</td>
<td>1</td>
<td>30</td>
<td>F</td>
<td>36.7</td>
<td>1.58</td>
<td>14.7</td>
<td>N, VR, WL, D (2 years)</td>
<td>2 months</td>
<td>BE, EGD, HA</td>
<td>EM</td>
<td>PD</td>
</tr>
<tr>
<td>Nahon et al. [8]</td>
<td>4</td>
<td>18–44; 15</td>
<td>3 F; 1 M</td>
<td>NA</td>
<td>NA</td>
<td>16.4–19.6; 14.0</td>
<td>VR, D (9 months–8 years)</td>
<td>NA</td>
<td>BE, EGD, EM</td>
<td>SI</td>
<td>R</td>
</tr>
<tr>
<td>Richter et al. [6]</td>
<td>1</td>
<td>9</td>
<td>F</td>
<td>28.0</td>
<td>1.45</td>
<td>13.2</td>
<td>WL, VR (12 months)</td>
<td>4 months</td>
<td>BE</td>
<td>PD, BT</td>
<td>R</td>
</tr>
<tr>
<td>Smith and Christie [4]</td>
<td>1</td>
<td>17</td>
<td>F</td>
<td>42.2</td>
<td>1.67</td>
<td>15.1</td>
<td>VR, WL, D (12 months)</td>
<td>5 months</td>
<td>BE, EGD</td>
<td>PD</td>
<td>R</td>
</tr>
<tr>
<td>Stacher et al. [11]</td>
<td>1</td>
<td>21</td>
<td>F</td>
<td>38.0</td>
<td>1.65</td>
<td>14.0</td>
<td>D, VR, WL, A (16 months)</td>
<td>4 months</td>
<td>BE, EGD, HA</td>
<td>EM</td>
<td>PD</td>
</tr>
<tr>
<td>Wright et al. [5]</td>
<td>1</td>
<td>13</td>
<td>F</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>VR, WL, D (18 months)</td>
<td>NA</td>
<td>BE</td>
<td>PD</td>
<td>R</td>
</tr>
<tr>
<td>Present study (2009)</td>
<td>2</td>
<td>14; 16</td>
<td>F; F</td>
<td>41.1; 49.7</td>
<td>1.57; 174.5</td>
<td>16.8–16.3; 16.3</td>
<td>VR, WL, Co (9 months); WL, VR (2 years)</td>
<td>3 months; 2 weeks</td>
<td>BE, EGD, EM</td>
<td>PD</td>
<td>R</td>
</tr>
</tbody>
</table>

A, amenorrhea; BE, barium esophagogram; BH, body height; BMI, body mass index; BT, bulitinum toxin application; BW, body weight; Co, collapsing; D, dysphagia; EGD, esophagogastroduodenoscopy; EM, esophageal manometry; ES, esophageal scintigraphy; F, female; H, heartburn; HA, histopathologic analysis; M, male; N, nausea; NA, data not available; PD, pneumatic dilatation; R, recovery; RT, retreatment; SI, surgical intervention; VR, vomiting/regurgitation; WL, weight loss.
correct diagnosis could be established within a few weeks in the second. In other case reports, the delay has been reported to be up to several years (Table 1). A prolonged psychiatric (hospital) care is not uncommon and has been reported to last up to 9 months in these children. Interestingly, most of the presented 16 patients diagnosed primarily as having an eating disorder and later demonstrated to have achalasia were unconvinced that they have an eating disorder, showed an undistorted attitude toward eating, and did not find their weight loss or low weight desirable.

We conclude that the exclusion of organic disease must be a priority, even if a psychotherapeutic intervention may be needed in the global care of eating disorder patients. Esophageal achalasia should be considered in anyone presenting with difficulty swallowing or dysphagia, even if other features suggest anorexia nervosa or bulimia nervosa. The clinical evaluation of patients with symptoms suggestive of eating disorders should include the taking of a thorough history regarding swallowing and vomiting to recognize a possible esophageal motor disorder. Barium swallow examination, endoscopy, and esophageal manometry should be performed in patients whose symptoms are indicative of disordered esophageal motor function.

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References