Case Report / Olgu Sunumu

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Consider Eating Disorders in the Differential Diagnosis of Acute Abdomen in the Ages of Adolescence

Adölesan Yaşlarında Akut Batın Ayırıcı Tanısında Yeme Bozukluğu Düşünün

Gamze Gürsoy[1], Elif Akçay[2], Demet Taş[1], Alkım Öden Akman[1]

[1]University of Health Sciences Turkey, Ankara City Hospital, Clinic of Pediatrics, Adolescent Medicine, Ankara, Turkey
[2]University of Health Sciences Turkey, Ankara City Hospital, Clinic of Child Adolescent Phsyciatry, Ankara, Turkey

Abstract

An adolescent girl applied to the pediatric emergency outpatient clinic with a complaint of acute abdomen. On abdominal ultrasonography, it was suspected of intussusception. However, when her medical history was expanded, it was discovered that she had a recent eating episode followed by multiple vomiting and had lost weight because of an intense food restriction causing severe constipation. Briefly, we presented an adolescent eating disorder patient who clinically mimics acute abdomen due to secondary hypokalemia, hypomotility, and constipation.

Keywords: Adolescent, eating disorder, acute abdomen

Öz

Akut karın şikayeti ile çocuk acil polikliniğine başvuran ve karın ultrasonografisinde invajinasyon şüphesi olan bir kız ergenin tıbbi öyküsü derinleştirildiğinde, yakın zamanda bir yeme atağının ardından çoğul kusma ve ciddi kabızlığa neden olan şiddetli besin kısıtlaması ile kilo verdiği öğrenildi. Özetle; sekonder hipokalemi, hipomotilite ve kabızlık sonucu klinik olarak akut batını taklit eden bir ergen yeme bozukluğu olgusu sunuldu.

Anahtar Kelimeler: Ergen, yeme bozukluğu, akut abdomen

Introduction

Acute abdomen is a medical emergency characterized by severe pain in the abdomen with a recent start. It is a common complaint in pediatric emergencies that can sometimes be a dramatic clinical condition. Mostly minor self-limiting medical reasons cause pain, but also life-threatening surgical/medical conditions can occur. Abdominal discomfort can be caused by a variety of systemic and local reasons. Diagnosis can be different between ages. For school children, urinary tract infection, appendicitis, acute gastroenteritis, Meckel's diverticulitis, pancreatitis, cholangitis, testicular torsion/ovarian torsion, inflammatory bowel disease, and trauma are one of the most common causes.[1]

Eating disorders are serious, potentially life-threatening illnesses afflicting individuals throughout their lifespan, with a particular impact on both the physical and psychological development of children and adolescents. It has been observed that the age of onset is more common in late adolescence and females than males. Childhood obesity, female gender, mood disorders, character traits (impulsive, perfectionist), history of abuse, and family weight concerns are possible risk factors for the disease. Most hospital admissions are not based on the eating disorder but because of medical complications related to the eating disorders (such as amenorrhea, hair loss, constipation, syncope, general weakness, and abdominal pain). Therefore, pediatricians should consider eating disorders in the differential diagnosis of such symptoms mimicking organic diseases in the adolescent age group (inflammatory bowel disease, celiac disease, surgical causes).[2,3]

Patients with eating disorders present gastrointestinal disturbances such as postprandial fullness, abdominal distention, abdominal pain, gastric distension, and early satiety, with altered esophageal motility, postprandial

Address for Correspondence/Yazışma Adresi: Alkım Öden Akman, University of Health Sciences Turkey, Ankara City Hospital, Clinic of Pediatrics, Adolescent Medicine, Ankara, Turkey
E-mail: alkimakman@gmail.com **ORCID ID:** orcid.org/0000-0001-8080-7127
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distress syndrome, superior mesenteric artery syndrome, irritable bowel syndrome, and functional constipation. In addition, binge eating may cause acute gastric dilatation and perforation, while self-induced vomiting can lead to dental caries, salivary gland enlargement, gastroesophageal reflux disease, and electrolyte imbalance.[4]

If the symptoms are thought to be suspicious, the history should be deepened in this adolescent age group, and nutritional patterns, excessive weight loss in the short term, inappropriate diets, and body image should be questioned. In our manuscript, we present a patient who was examined in our pediatric emergency department with the diagnosis of acute abdomen; invagination was found in the abdominal ultrasound. After taking anamnesis in-depth, her excessive weight loss history has learned, and she was diagnosed with "anorexia nervosa (AN)."

Case Report

A 16-year-old female adolescent was admitted to the pediatric emergency outpatient clinic with abdominal pain. Her body weight was: 31.5 kg [standard deviation (SD) score: -5.05], and her height was: 157 cm (SD Skor -0.91). The patient's vital values were between normal ranges. On physical examination, the patient was cachectic, had right lower quadrant tenderness, and defense was found on abdominal examination. No additional pathology was observed in other systemic examinations. The patient was prediagnosed with an acute abdomen in the emergency department, and her further examinations were planned. In abdominal radiography, there was no pathology observed. However, in her abdominal ultrasound, imagining "invagination between the ileo-ileal loops along a 2 cm segment with a size of 17x22 mm" was observed. In addition, the appendix is visualized with an unclear end in the right lower quadrant; it is measured in a diameter of 4 mm, its lumen is compatible with appendicolith, and the ovaries could not be visualized.

In Table 1 patient's initial blood test results are listed. In complete urinalysis: Urine density 1038, leukocyte esterase +2, urine leukocyte count was 36, and urine culture had no growth. In the patient's biochemistry analysis, potassium was measured as 2.9 mEq/L, and other analyzes were within the normal range.

The home, eating, education/employment, activities, drugs, sexuality, suicide, and safety interview,[5] it was revealed that her parents were divorced, and she was living with her father with three siblings and her mother's receiving psychiatric treatment. It was learned that she generally did not feel comfortable at school and had difficulty socializing; she did not have any plan and goals for the future. She had started to lose weight 12 months ago; initially, she reduced the number of meals while not being satisfied with her appearance. In her feeding anamnesis, she restricted her diet increasingly during her weight loss; her targeted calorie was close to 100 kcal per day for the last few months, even though she liked her appearance more after losing weight was learned. Also, it was learned that she has been eating oatmeal one meal a day, suffering from constipation for months, has not had a period for one year, and has orthostatic complaints. She continued calorie restriction, and the patient lost 22 kilos in 12 months (from 52 kg to 30 kg). She had attempted suicide by drinking paracetamol four months ago and was evaluated by a child psychiatrist after a suicide attempt, but she did not do her follow-up.

A control abdomen ultrasound was taken in the emergency department, and no obvious invaginated segment was observed. With these findings, the acute abdomen was excluded from the diagnosis. With deepened anamnesis in the foreground, secondary gastrointestinal medical complications of an eating disorder were considered.

While in pediatric emergency service, she was consulted by child and adolescent psychiatry again

Psychiatric Evaluation

In her psychiatric evaluation, she was conscious, cooperative, and oriented. The patient was able to establish a relationship with her child psychiatrist. Her mood was euthymic, and her affect was in the normal range. There was no suicidal ideation. Psychomotor activity was decreased due to her physical health. However, attention and memory examinations were

Table 1. Initial laboratory values in pediatric emergency

Parameters	Value	Normal range
WBC	6.05x10^9/L	4.5-11.4 10^9/L
Hemoglobin	11.4 g/dL	12.5-16 g/dL
Platelet	282x10^9/L	170-400x10^9/L
Erythrocyte sedimentation rate	15 mm/hour	0-20 mm/hour
Creatinine	0.65 mg/dL	0.6-1.0 mg/dL
Urea	34 mg/dL	11-39 mg/dL
Glucose	75 mg/dL	70-99 mg/dL
Sodium (Na)	137 mEq/L	132-146 mEq/L
Calcium (Ca)	8.6 mg/dL	9.1-10.3 mg/dL
Phosphorus (P)	3.5 mg/dL	3.1-5.3 mg/dL
Potassium (K)	**2.9 mEq/L**	**3.5-5.5 mEq/L**
Chlorine (Cl)	99 mEq/L	99-109 mEq/L
ALT	19 U/L	0-29 U/L
AST	21 U/L	0-25 U/L
CRP	<0.05 g/L	0-0.005

WBC: White blood cell, CRP: C-reactive protein, ALT: Alanine aminotransferase, AST: Aspartate aminotransferase

normal. She had perfectionist thoughts and preoccupation with dieting, losing weight, and body image. She has been regularly binge-eating or purging during the last three months. She did not want to vomit but could not control her urge to vomit after binge attacks 1-2 times a week. Thus, she was diagnosed with AN binge-eating/purging type. There was no comorbid psychiatric diagnosis of eating disorder according to the fifth edition of the diagnostic and statistical manual of mental disorders criteria in her psychiatric assessment.[6] As a result, the patient was given fluoxetine 20 mg/day, and cognitive-behavioral therapy sessions were scheduled weekly.

Treatment and Clinical Follow-up

During the 7-day hospitalization, the patient was monitored for 24 hours. Daily serum electrolytes and complete urine analysis were observed. In addition, the patient's daily calorie was adjusted with daily weight and followed for refeeding (Table 2).

Potassium value returned to normal in daily electrolyte follow-up. In the first week of refeeding follow-up, the decreased serum phosphorus value returned to normal values with the support of oral phosphate solution. The patient's discharge weight was: 36,2 kg. The first week weight after discharge was 42,4 kg, and the second week was 46,5 kg. Due to rapid weight gain, she arranged the diet with a dietitian. Repeated liver function tests were normal. The patient continues to be followed up by the child psychiatry and adolescent medicine department regularly. Fluoxetine dose was increased to 40 mg, and olanzapine 2.5 mg was added during psychiatric follow-ups.

Discussion

An adolescent girl who applied to the emergency department with complaints mimicking acute abdomen and was diagnosed as having an eating disorder is presented in our case. The incidence of AN has shown an increasing trend over the century, and the lifetime prevalence of AN is 4% in female patients and 0.3% in male patients.[2] Among the complications of AN, abdominal pain, vomiting, and constipation can be seen, and electrolyte imbalances can increase the symptoms.[4]

The mechanism of gastroparesis in individuals with AN and blumia nervosa is not well understood and likely multifactorial. Smooth muscle atrophy may result from protein malnutrition. Metabolic and hormonal imbalance can develop due to poor nutrition, centrally mediated stress reactions, vomiting, or laxative abuse. Gastric dysrhythmia resulting from impaired autonomic function may produce antral hypomotility with a delay in the grinding of solid food before transport into the duodenum.[7-9]

Patients suffering from AN can have multiple gastrointestinal tract symptoms, such as oral complaints, increased esophageal sphincter tone, slower gastric emptying, gastric dysmotility, gastric dilatation, and resulting gastric necrosis, perforation may occur; also lower intestinal motility may be affected.[10,11]

Invagination means the penetration of an intestinal segment into the adjacent intestinal segment, and ileocolic intussusception is the most common type in pediatric patients. The etiology is usually idiopathic in childhood and may result from anatomical and infectious causes later.[12] Patients diagnosed with AN may suffer from gastrointestinal complaints, delayed gastric emptying, and false obstructions.[4,7] Ileo-ileal intussusception is more likely to

Table 2. Daily electrolytes of the patient/treatment

Emergency service Day 0	***Potassium: 2.9 Body weight: 31.5 kg**	**IV hydration + 40 meq/Lt KCl infusion**
Hospitalization Day 0	**Potassium: 3.1**	IV hydration + 20 meq/Lt KCl infusion
Day 1	**Potassium: 2.9 *Phosphorus: 2.2**	IV hydration + 30 meq/Lt KCl infusion and 1 cc/kg/day oral neutral phosphate solution per oral
Day 2	Potassium: 4.3 **Phosphorus: 2.8** Body weight: 33 kg	Parenteral therapy was discontinued and potassium therapy was started enterally
Day 3	Potassium: 3.7 **Phosphorus: 2.9** Body weight: 35.7 kg	Continuation of oral potassium + oral phosphate therapy
Day 4	Potassium: 4.0 Phosphorus: 3.9	Neutral phosphate treatment started to be gradually reduced
Day 6	Potassium: 4 Phosphorus: 4.1 Body weight: 36.2 kg	Oral potassium and phosphate therapy was discontinued
First week control after discharge	Potassium 3.7 Body weight: 42.4 kg	

*Normal range: Potassium: 3.5-5.5 mEq/L, phosphorus: 2.9-4.8

resolve spontaneously, especially for the short intussusceptum. In our case, the spontaneous recovery of intussusception can be explained in this way. Although there is limited information about intussusception due to eating disorders in the literature, AN may be a facilitating factor for intussusception, and early diagnosis is important regarding the risk of operations.[13-15] The reason for presenting this case is that patients with AN mostly apply for healthcare not because of the disorder but for their complications. These complications may mimic other diseases and suggest another underlying organic cause, which may cause unnecessary further investigation and wrong treatment approaches in patients. Rapid weight loss should be questioned in the anamnesis in a patient with an acute abdomen in the adolescent age group, and the diagnosis of AN should be considered in the differential diagnosis.

Ethics

Informed Consent: The authors claim to have all necessary patient consent papers. The patient(s) has/have provided their agreement in the form of their clinical information to be published in the journal. The patients know that their names and initials will not be published and that anonymity cannot be guaranteed while every effort will be taken to keep their identities hidden.

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Authorship Contributions

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