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Case Report

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Organic or Psychiatric Disease? A Misdiagnosed Superior Mesenteric Artery Syndrome

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Abstract

Superior mesenteric artery syndrome (1-4) is a rare disorder characterised by a compression of the duodenum because of the reduced angle between the aorta and superior mesenteric artery. The disease is clinically characterised by abdominal pain, lack of appetite, vomiting and anorexia; some of these symptoms also characterise eating disorders. We report a case of a young female patient presenting with abdominal pain, loss of appetite and chronic loss of weight which led to misdiagnosis of anorexia nervosa; ultrasound with echo color Doppler methodology has subsequently allowed the correct diagnosis.

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Case Report

A 21-year-old woman had a history of abdominal pain since the age of 18, which started after an extreme diet following a moderate weight gain following which she had lost 11 kg; during the diet she reported irritability, mood disorders, asthenia, epigastrum postprandial abdominal pain, constipation or diarrhoea. Blood tests to exclude liver, kidney, autoimmune and celiac diseases as well as instrumental tests (abdominal ultrasound, esophagogastroduodenoscopy), were performed .

After medical assessments and a diagnosis of psychosomatic illness, she was prescribed several drugs acting on the central nervous system (CNS) (benzodiazepines, sulpiride) and antispasmodics mebeverine, trimebutine) without benefit; the early postprandial (15–30 minutes after a meal) pain decreased without ceasing altogether. As, however, this pain underwent a marked improvement when the patient was taking small meals, she consequently kept on this diet dividing daily food into five to six mainly solid or semi-solid small daily meals. Nevertheless, because further weight loss was reported in the following months and since this was associated with a progressive rejection of meals, and also considering the onset of sporadic amenorrhea, the patient underwent a neuro-psychiatric assessment. In fact she was diagnosed as having an eating disorder and prescribed antidepressant drugs (selective serotonin reuptake inhibitors), and support with individual and family psychotherapy was started. In spite of all of this, the patient had no benefit, as the pain, although attenuated in intensity, persisted when she ate regular meals. New blood tests and abdominal ultrasounds were performed, but no organic diseases affecting the abdominal organs were found. She was diagnosed with presumably, an 'eating disorder in borderline avoidant personality', and she was treated with Olanzapine.

Because the abdominal pain and vomiting does not improve despite treatment, the psychological and psychiatric examination questioned the previous diagnosis of an eating disorder and new surveys were planned. At admission to our hospital , blood tests showed iron deficiency anaemia (25µg/dL with normal values of 30-170); plasma liver and kidney function tests were normal. Esophagogastroduodenoscopy does not demonstrate lesions of the gastric and duodenal wall or obvious signs of extrinsic compressions; abdominal ultrasounds (5) highlighted the possibility of a pathological aorto-mesenteric angle; this was confirmed by an echo-Doppler (photo 1: A-B). For this reason, an abdomen CT (6) scan with contrast was carried out. The outcome showed a constriction of the third portion of the duodenum (photo 2: A-B) that was hypertrophic and dilated above the stenosis due to the attempt to bypass the stenosis caused by the reduction in the aorto-mesenteric angle by the duodenal muscles. It was also possible to highlight a pathological vascular angle (21°) formed by the protrusion of the mesenteric artery and the abdominal aorta, which was clinically compatible with the superior mesenteric artery syndrome (SMAS).

Once the diagnosis of SMAS was made, the patient was sent (7-8) to the vascular surgery department where she underwent a duodenojejunostomy by-pass with laparoscopic surgery, which avoided compression of the narrow duodenal segment. Six months after the operation, the patient started a specific diet and she progressively gained weight; she attended psychological counselling sessions and she was not prescribed psychiatric drugs. The pain disappeared, although the feeling of a slight postprandial discomfort is still there.

Discussion

Superior mesenteric artery (SMA) syndrome (or aorto-mesenteric compass syndrome or Wilkie's disease) is a relatively rare condition caused by short Treiz's ligament, or by an unusually low origin of the superior mesenteric artery. The retroperitoneal fat and lymphatic tissue push the mesenteric artery away from the aorta. It has reported that conditions reducing the distance and decreasing the angle between the SMA and aorta may compress the horizontal segment of duodenum. The diagnosis of the SMA syndrome is challenging and often delayed due to its insidious presentation. High clinical suspicion is warranted and diagnosis is based on clinical evidence supported by radiological findings. (9)Superior mesenteric artery syndrome or Wilkie syndrome (1-4) usually develops in

association with corrective spinal surgery, weight loss, and eating disorders or psychological conditions, including anorexia nervosa and drug abuse. Regardless of the etiology, once the condition becomes established, recurrent vomiting leads to weight loss with further exacerbation of the emesis. Parenteral nutrition or enteral feeding with a jejunal tube may be useful in increasing body weight, which is associated with symptom relief. In patients with a short history of SMA syndrome, conservative management has reasonable prospects for success; however, in chronic patients it is often associated with prolonged therapy and a low success rate.

Anorexia nervosa (AN), together with bulimia (10-12) is one of the most frequent eating disorders in young people, also defined as psychogenic eating disorders; in Western industrialised countries, these disorders are a real health emergency. Eating disorders, characterised by the refusal of food and the obsessive fear of getting fat, are mainly dysfunctions of eating behaviour and/or behaviours aiming at controlling body weight.

Depression, anxiety, personality disorder, and obsessive-compulsive disorders are the psychiatric symptoms reported by several authors in patients with eating disorders.

Loss of weight, nausea, vomit, abdominal pain, and lack of appetite were reported by our patient, together with a depressive-anxious condition, probably due to the chronic condition of the patient. All of these considera-tions led to the hypothetical and wrong diagnosis of anorexia, although we needed further diagnostic criteria such as amenorrhea, age of onset, personality disorder diagnosis, and compulsive-obsessive disorder, which were not taken into consideration.

Conclusion

Notwithstanding the few cases of SMAS reported in literature, we may conclude that: Medical problems (13) that arise due to severe restricting and/or purging may be misdiagnosed or sub-optimally treated, from outpatient clinics to top medical hospitals. A symptom may be presumed to be a psychological manifestation of the eating disorder and inappropriately dismissed for further medical evaluation. Warning sign must be taken into account (amenorrhea, excessive, rigid exercise regimen--despite weather, fatigue, illness, or injury, the need to "burn off" calories taken in, development of food rituals, preoccupation with weight, food, calories, fat grams, and dieting, refusal to eat certain foods, progressing to restrictions against whole categories of food

A careful evaluation of the pain dyspeptic symptoms in young patients is recommended especially after a crash diet and severe weight loss resulting from a voluntary diet with aesthetic purposes and abdominal surgery. This assessment is also strongly needed in anorexic patients with postprandial pain and weight loss.

The severity and the clinical expression of SMAS may vary, depending on the degree of the aorto-mesenteric angle. This may lead to a wrong diagnosis, especially during an asymptomatic interval. Furthermore, SMAS may be the cause of eating disorders, but it may also be the result of an eating disorder with a loss of weight.

The incidence of reduction in the aorto-mesenteric angle and the SMAS may be underestimated, especially in patients with eating disorders.

The colour Doppler ultrasounds allow for an early diagnostic of reduced aorto-mesenteric angle (6,14). This is a swift, repeatable, non-invasive, low cost and easy-to-perform procedure; furthermore, it keeps the radiation exposure to a minimum level, making it a suitable diagnostic procedure for young patients.

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