Superior Mesenteric Artery Syndrome

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The patient was a 22-year-old woman with a 10-year history of anorexia nervosa restricting subtype who had been diagnosed with superior mesenteric artery (SMA) syndrome (Figure 1). She reported diffuse abdominal pain and nonvolitional vomiting shortly after food consumption, which was contributing to further weight loss. With nutritional rehabilitation, which initially included increased amounts of liquid supplements and eventual tolerance of a regular oral diet, she achieved a body mass index of 20.08 kg/m², with near resolution of her gastrointestinal (GI) symptoms and computed tomography findings no longer meeting criteria for SMA syndrome (Figure 2).

Superior mesenteric artery syndrome is a frequently overlooked cause of abdominal pain and emesis associated with food consumption in patients who have lost substantial weight. Superior mesenteric artery syndrome results from the compression of the horizontal duodenum between the SMA and the aorta owing to atrophy of the mesenteric fat pad resulting from weight loss. Diagnosis can be made functionally with upper GI series or with computed tomography angiography or magnetic resonance angiography; an aortomesenteric angle less than 25° or an aortomesenteric distance less than or equal to 8 mm are the most frequently cited diagnostic criteria. Patients may be referred for surgical intervention, but surgery should never be first-line treatment.

**FIGURE 1.** Before weight restoration (body mass index, 16.6 kg/m²). SMA = superior mesenteric artery.

**FIGURE 2.** After weight restoration (body mass index, 20.08 kg/m²; aortomesenteric distance, 4.72 mm; aortomesenteric distance, 8.05 mm). SMA = superior mesenteric artery.
as duodenal compression and, hence, the GI symptoms resolve with even modest weight restoration and reconstitution of the mesenteric fat pad (see Figures 1 and 2). Options for nutritional rehabilitation can include increased liquid supplements, enteral nutrition bypassing the duodenal compression, or total parenteral nutrition in extreme cases.

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