A 17 year old presented with a 60-lb weight loss over a 6-month period. The patient admitted to a 1000 calorie-per-day diet and bouts of purging. Subsequently, early satiety and spontaneous postprandial emesis developed. Examination demonstrated a cachetic adolescent with tachycardia and a mildly tender abdomen. Laboratory evaluation showed elevated amylase and lipase, contraction alkalosis, and prerenal azotemia. Computerized tomography demonstrated marked distention of the stomach (red arrow) with narrowing of the space between the superior mesenteric artery and the aorta (blue arrow), causing obstruction of the third portion of the duodenum (green arrow), consistent with superior mesenteric artery syndrome. In certain individuals who experience acute weight loss, deterioration of the fat pad surrounding the superior mesenteric neurovascular pedicle leads to duodenal compression. Refeeding often relieves the obstruction, though in a minority of cases surgery is required. In this case nutritional supplementation and psychiatric intervention led to regained weight and full resolution of symptoms.