

# Weight Loss Induced Small Bowel Obstruction

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## Abstract

We report a rare case of small bowel obstruction resulting from weight loss. Treatment of the weight loss resulted in complete resolution of symptoms.

## CASE REPORT

A 44-year-old man was admitted with a six-month history of gradually worsening epigastric discomfort, loss of appetite, significant weight loss and one week history of vomiting. He lost 12.7 kilograms in weight over this period. He had a prior history of myocardial infarction and was on regular aspirin. He smoked 15 cigarettes a day and quit alcohol one year prior to admission. There have been no previous admissions with symptoms suggestive of acute or chronic pancreatitis. There was no history of post prandial abdominal pain or altered bowel habit. On examination he was cachectic, afebrile and was hemodynamically stable. Admission weight was 54 kilograms (it was 66 kilograms before the onset of symptoms). Abdominal examination revealed epigastric tenderness but bowel sounds were preserved. The remainder of the clinical examination was unremarkable. Initial laboratory blood tests including complete blood count, liver function tests, urea and electrolytes and C reactive protein were normal. Chest radiograph did not reveal any gas under the diaphragm or mass lesions. An erect abdominal radiograph was also normal. Gastroscopy revealed mild antral erythema with some excess fluid in the antrum but no evidence of obstruction. Ultrasound of the abdomen revealed a dilated fluid filled stomach with dilatation of the first and second portions of the duodenum. Small bowel enteroscopy was done to rule out an obstructing lesion distal to the second part of duodenum. It did not reveal any cause for the obstruction. Multiple gastric and small bowel biopsies were normal. A computed tomography scan of the abdomen (with IV contrast) showed a grossly dilated first and second parts of the duodenum with duodenal collapse at the level of the superior mesenteric artery. The stomach was not distended. There was very little mesenteric fat (Fig 1).

## Figure 1

Figure 1 : Dilated duodenum proximal to the superior mesenteric artery ; loss of fat planes



The pancreas was normal. These findings were in keeping with a diagnosis of superior mesenteric artery syndrome seen in patients with significant weight

loss. Enteral feeds were started with a nasojejunal feeding tube that bypassed the site of narrowing. Extensive work up of his weight loss did not reveal a cause. Patient responded well to enteral feeding, regaining 13 kilograms over a one month period with complete resolution of his symptoms. A repeat abdominal CT scan was completely normal with restoration of normal fat planes and no evidence of obstruction (Fig 2). He remains on normal diet, tolerating it well.

### Figure 2

Figure 2 : Restoration of normal fat planes and no evidence of duodenal obstruction



### DISCUSSION

The superior mesenteric artery (SMA) branches off the aorta at an acute angle and travelling in the root of the mesentry, crosses over the duodenum, usually just right to the midline. In rare instances, the SMA may obstruct the duodenum as it crosses over it, possibly because of a more acute angle than normal between the aorta and the SMA, leading to dilation of the proximal duodenum and stomach [1]. Symptoms include epigastric fullness after meals, bilious vomiting and midline abdominal pain relieved by the knee-chest position. Precipitating factors include prolonged bed rest, rapid weight loss especially in adults, previous abdominal surgeries and increased lordosis. The syndrome has been reported in conjunction with pancreatitis, peptic ulcer disease and other inflammatory conditions [2]. Diagnosis is based on clinical suspicion with radiological confirmation using a barium small bowel meal or a CT scan. Radiological criteriae include: dilated first and second portions of the duodenum, abrupt compression of the duodenal mucosal folds, to-and-fro movement of barium proximal to the obstruction site, gastroduodenal transit delay up to 4 to 6 hours and relief of the obstruction in knee chest position, left lateral decubitus and prone positions [3].

Computed tomography represents a relatively non-invasive technique that provides an estimation of the aorta-SMA

distance comparable to angiography [6].

Optimal management of a patient with SMA syndrome requires reversal or removal of the precipitating factor, decompression by nasogastric tube, and fluid and electrolyte replacement. Symptoms typically improve after restoration of weight. In patients with intermittent attacks, the management may be difficult. Many surgical techniques have been employed, gastrectomostomy being the most effective [2]. Gastrojejunostomy may fail to adequately decompress the duodenum in certain instances. Recently, a minimally invasive or laparoscopic approach to the retroperitoneum or duodenal detachment was introduced [4]. Although the role of a laparoscopy in managing SMA syndrome is not clearly defined, a laparoscopic duodenojejunostomy may be an alternative approach to the surgical treatment of SMA syndrome cases [5].

Although a rare cause of small bowel obstruction, superior mesentery artery syndrome should be considered as one of the differential diagnosis in these selected group of patients as prompt treatment of the underlying cause will cure the condition.

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