



An Unusual Cause of Acute Abdominal Pain: Spontaneous Celiac Artery Dissection

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CASE PRESENTATION

A 54-year-old male with history of hypertension and hyperlipidemia presented with sudden onset of severe non-radiating upper abdominal pain associated with nausea and diaphoresis. He denied having any prior episodes of abdominal pain of this severity. He was on lisinopril, omeprazole and pravastatin. He had history of alcohol use limited to weekends but denied tobacco or illicit drug use. On arrival, his vital signs were notable for elevated blood pressure of 156/90mmHg, and heart rate of 87/min. Physical examination was remarkable for severe tenderness in the epigastrium without any abdominal guarding or rebound tenderness. Initial labs were remarkable for AST 79 IU/L (10-42), ALT 99 IU/L (6-45) and CRP 19.9 mg/L (0-10). CT scan of the abdomen and pelvis with contrast showed short segment dissection and pseudoaneurysm of the proximal celiac artery (Fig 1).

Repeat imaging two days later showed stable findings. Vascular surgery was consulted who recommended conservative management. An extensive infectious and autoimmune workup was negative. Blood cultures were positive for *Escherichia coli*. He improved with ciprofloxacin, intravenous fluids, and pain management.

DISCUSSION

The celiac artery is the first major branch of the abdominal aorta, arising at the level of T12. It supplies the structures of the primitive foregut through its three branches – left gastric, splenic, and common hepatic arteries. The

Abstract

Isolated celiac artery dissection was first reported in 1959 and remains a rare phenomenon. Celiac artery dissection may occur in conjunction with aortic dissection or as an isolated event. Its incidence is less than superior mesenteric artery (SMA) dissection. Patients with isolated celiac artery dissection tend to be less symptomatic due to celiac artery communication with SMA. Here, we describe a middle-aged male with hypertension who presented with acute abdominal pain, and was found to have isolated, spontaneous celiac artery dissection.



Fig 1. CT abdomen pelvis with contrast showing short segment dissection and pseudoaneurysm measuring 1.2 cm of the proximal celiac artery.

mean age of diagnosis of celiac artery dissection is 55 years with a male predominance ratio of about 5:1.¹ Although rare, this condition is associated with 15–40% mortality risk. The risk factors include hypertension, atherosclerosis, fibromuscular dysplasia, medial cystic necrosis, segmental arterial mediolysis, trauma, and connective tissue diseases among others.² CT scan findings usually include intimal tear, which is pathognomonic, or a mural thrombus. Perivascular fat infiltration is indicative of its acuity and predilection for extension of isolated celiac artery dissection into other adjacent vessels.

The major management principles are dependent on preventing or limiting the extent of malperfusion and blunting associated sympathetic hyperactivity effect on vasculature by ensuring adequate pain control and use of appropriate antihypertensive agents. Asymptomatic cases are managed with measures to prevent malperfusion by ensuring adequate blood pressure control and the use of antiplatelet agents. Preferred antihypertensives are beta-blockers and, if needed, alpha-blockers. Anticoagulants are used in patients with mural thrombi for a duration of three to six months. Symptomatic patients who have evidence of bowel ischemia are managed with bowel rest, intravenous fluids, antihypertensives, and anticoagulation.³ Antibiotics are sometimes initiated in cases of secondary bacterial infection. A repeat imaging study is required within 48 hours and per the clinical course. Definitive management requires either open surgical management or endovascular repair with stent placement. The complications of celiac artery dissection include malperfusion syndromes with ischemic events, free wall vessel rupture, and secondary aneurysm formation.

Physicians must be aware of unusual causes of acute abdominal pain such as celiac artery or SMA dissection to initiate appropriate therapy in a timely manner. Early diagnosis is helpful in getting appropriate vascular surgical consultants on board to co-manage the patient. These patients require close outpatient follow up with repeated imaging to assess for resolution or secondary aneurysm formation, which may require elective intervention.

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