

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Vascular Diseases Quiz – Case 8

A 47 year-old female was admitted for intermittent colicky epigastric pain, often worse postprandially, poor appetite, diarrhoea, and weight loss of 13 kg during the last 15 months. Her past medical history was notable for chronic renal insufficiency under hemodialysis and a right above the knee amputation due to peripheral arterial disease. Blood chemistry and hematology tests were unremarkable. Oesophagogastroduodenoscopy (OGDs), colonoscopy, barium studies, and abdominal computed tomography (CT) were normal. Owing to her severely cachectic appearance and the persistence of symptoms, the diagnosis of chronic mesenteric ischemia was entertained. Mesenteric angiography revealed two tight stenoses at two branches of the superior mesenteric artery (SMA) (fig. 1A). Percutaneous balloon angioplasty and stenting was successfully performed at both lesions under local anesthesia and adequate caliber and flow was restored to both SMA branches (fig. 1B). The patient's symptoms abated after the operation. Four months postoperatively, the patient remains symptom-free and has gained 6 kg.

Comments

The causes of chronic mesenteric ischemia (CMI) include a variety of conditions. In more than 90% of the cases, CMI is of atherosclerotic origin. Well-known risk factors for atherosclerosis are also applicable to CMI such as hyperlipidemia, diabetes, and smoking. These conditions are more common in men than in women however, the majority of those suffering from CMI are elderly women. Apart from atherosclerosis, other non-atheromatous conditions are also implicated. These include Takayasu arteritis, celiac artery diaphragmatic compression, dysplastic lesions, thromboangiitis obliterans, and radiation-induced vascular injury.

A gradual reduction of blood flow to the intestines occurs in CMI. In the postprandial phase, blood flow to the intestines increases up to 40% compared with fasting phase. Therefore, symptoms of ischemia develop when the demand increases such as after eating. Any one of the three main mesenteric arterial branches may be occluded; however, the superior mesenteric and celiac arteries are more commonly affected than the inferior mesenteric artery.

As already noticed, CMI occurs most commonly in the postprandial period. Recurrent symptoms may progress into sitophobia with subsequent weight loss. Most commonly abdominal pain occurs 15–60 minutes following ingestion of a meal and may last from

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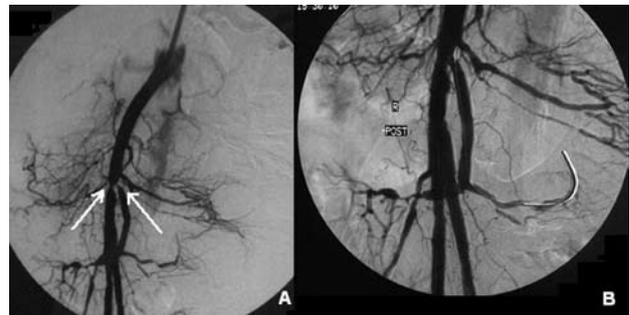


Figure 1. Selective digital subtraction angiography demonstrating A) 2 tight stenoses (arrows) at two branches of the superior mesenteric artery causing abdominal angina B) restoration of adequate caliber and flow after percutaneous angioplasty and stenting.

1–4 hours. Weight loss can average 10–15 kg and is primarily the result of reduced food intake to avoid intestinal angina. As the occlusion progresses, chronic dull abdominal pain may develop as well. Additionally, CMI involving the celiac arterial distribution may result in disorders such as gastroparesis, gastric ulceration, and gallbladder dyskinesia. Physical examination is usually unremarkable except for pain that is out of proportion to the exam. Sometimes, an epigastric bruit may be audible. Basic laboratory tests of blood chemistry and hematology are also usually unremarkable.

The diagnosis of CMI has traditionally been accomplished by invasive catheter arteriography. This is an invasive procedure that involves accessing arterial blood flow peripherally and advancing a catheter into the vessel. Injection of contrast can be examined fluoroscopically to detect vascular disease. However, in recent years, many non-invasive diagnostic modalities have become available including duplex ultrasonography, computerised tomography angiography and magnetic resonance angiography.

In most cases, the treatment of chronic mesenteric ischemia is not considered urgent. Nevertheless, definitive therapy is usually preferred to minimise the potential for serious clinical consequences such as acute bowel infarction. Surgery including either endarterectomy or vascular bypass has been the traditional management for CMI with a primary graft patency of more than 90% at 5 years, but perioperative mortality and morbidity rates ranging from 0 to 17% and 19–54% respectively. In the last two decades, minimally invasive endovascular therapy has emerged as an alternative approach for CMI. Short term results are similar to conventional surgical therapy with primary assisted patency of 97% at 1 year, but significantly lower perioperative morbidity and mortality compared to surgery.

Although rare, CMI represents a significant cause of abdominal pain. Recognition and management of CMI is of great importance in order to avoid complications of the illness and its potential to

progress into acute intestinal infarction. Traditionally, patients with CMI have undergone surgical bypass or endarterectomy with fairly good outcomes. The use of percutaneous revascularization in the mesenteric circulation has been reported in small series with relatively short follow-up. Preliminary results have shown that balloon angioplasty and stenting yields a high procedural success, with low morbidity and mortality rates, suggesting that endovascular therapy is an important alternative treatment to surgical revascularization in selected patients.

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