Summary

Abdominal angina is an uncommon and under recognized syndrome caused by repeated episodes of postprandial intestinal ischemia. Although it usually does not require emergency therapy, it can lead to marked weight loss and significantly impair the quality of life. Furthermore, there are substantial risks of progressive occlusion or acute thrombosis of one of the involved vessels. Mesenteric artery stenosis seems to be much more common than clinically recognized symptomatic mesenteric ischemia. This probably depends on the development of extensive collateral circulation, so that stenosis becomes clinically significant only if at least 2 of the 3 major splanchnic vessels (celiac, superior, and inferior) are involved.

Most patients with CMI are older than 60 years, and women are affected three times more often than men. The classical picture is the clinical triad of post-prandial upper abdominal pain, weight loss and an epigastric bruit.

Its pathophysiology remains poorly understood. In particular, the relation between symptoms and arterial lesions is unclear. The most common cause of chronic intestinal ischemia is atherosclerotic occlusion or severe stenosis of the mesenteric arteries. A low insertion of the MAL or a high origin of the celiac or renal artery may be a cause. The occurrence of ischemia may be a multifactorial event determined by the pace of lesion progression, the ability of the individual patient to develop collateral vessels and the site of the lesion.

There is no specific diagnostic test, and the diagnosis continues to rest on clinical grounds. Conventional angiography is rivaled by highly accurate noninvasive imaging modalities such as CTA and MRA.

Ultrasound is an excellent noninvasive means of accurately detecting mesenteric stenosis in CMI. Established criteria for the diagnosis of sever stenosis rely on peak systolic velocity, exceeding 275 cm/s for the SMA and 200 cm/s for the celiac artery. CT Angiography in addition to its minimal invasiveness, CT has 2 other advantages compared with conventional angiography in examining patients with suspected ischemia.

(1) It can visualize structures surrounding arteries, detecting ischemic changes in the affected small bowel loops and mesentery.

(2) It can evaluate the etiology of mesenteric ischemia, distinguishing atherosclerotic plaques, thrombus occlusion, or tumor invasion.

MRA techniques, particularly contrast-enhanced MRA, have shown great promise at producing highly detailed images of the proximal mesenteric vasculature. Tonometry is based on a general physiological principle that during ischemia, anaerobic metabolism leads to increased production of acids, which are buffered locally by bicarbonate ions, leading to increased carbon dioxide tension (PCO2) in the tissue. Erosive ischemic gastric ulcerations and gastro-duodenitis noted on upper endoscopy have been described in association with CMI. Visible Light Spectroscopy can measure mucosal perfusion in the gastrointestinal tract.

Treatment is required for patients with symptomatic CMI. The goals of treatment are to ensure symptom resolution, to correct nutritional status and to prevent intestinal infarction. The main factors in determining the choice of technique are: The type and location of arterial lesions, general status of the patient and experience of the surgeon. Operative intervention via bypass procedures or endarterectomy provides lasting results, but may be associated with considerable postoperative morbidity and mortality. Endovascular treatment has been advocated for

high-risk patients and for patients with vague symptoms and a doubtful diagnosis. Balloon angioplasty is now the method of choice for the treatment of stenosis of the visceral arteries. Endovascular treatment with angioplasty and/or stenting can be performed with less morbidity, but the results are not as durable and symptoms recur at a higher rate than with surgical intervention.