

INVITED COMMENTARY

Isolated Dissections of Mesenteric Arteries. What we Know and What we Don't Know

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It has been well documented in the literature that isolated dissections of the mesenteric arteries (IMAD) have predominantly a benign course compared to other potentially catastrophic causes of acute mesenteric ischemia, such as embolism or acute thrombosis.¹ In the majority of asymptomatic cases, diagnosis of the dissection is an incidental finding.¹ We know that the disease is rare in Europe, but not so uncommon in East Asia.^{2,3}

In this interesting and challenging paper, Nana et al.⁴ reported on the experience of treating isolated visceral artery dissections in two Greek vascular centres. The authors analyzed the outcomes of 14 patients with the disease. Interestingly, 2 out of 11 symptomatic patients (18%), initially treated with optimal medical treatment, were clinically deteriorated and treated endovascularly with stenting. The authors concluded that conservative treatment seems to be a safe option, while an endovascular procedure could be attempted in patients with persistent symptomatology.⁴ The results of this study come to confirm the existing guidelines. The current guidelines recommend conservative treatment with antiplatelet therapy and control of hypertension in patients with asymptomatic IMAD (Class IIa, Level C) and antiplatelet therapy or heparin until symptoms resolve (Class IIa, Level C) in patients with symptomatic IMAD.⁵ Endovascular revascularization should be considered in patients with a symptomatic IMAD not responding to medical management and with a suspicion of bowel ischemia (Class IIa, Level C).⁵

Three interesting points have been raised by this study and should be highlighted:

1. Isolated dissections of the mesenteric arteries (IMAD) have predominantly a benign course. This is because in the majority of patients with IMAD, the dissection plane leads to a dissected compromised true lumen

with incomplete vessel occlusion, that may produce intermittent symptoms of bowel malperfusion.¹ The majority of patients under optimal conservative treatment show an uncomplicated stable course with encouraging prognosis. Three meta-analyses documented that initial conservative treatment appeared safe and effective in more than 80-90% of symptomatic patients.¹⁻³

2. We know that a critical subgroup of symptomatic patients, initially treated with conservative treatment, will require conversion to either endovascular or open procedures due to consistency of symptoms or deterioration of clinical condition.¹ In a recent meta-analysis, resolution of symptoms was observed in 100% for those treated with open procedure and 88.8% for those treated endovascularly, underlining the undoubted primary role of open reconstruction in certain cases.¹ The pooled rate of bowel ischemia in patients treated conservatively was 3.75%, showing that the disease has a sneaky character if left misdiagnosed or underestimated. If bowel infarction and sepsis occur, the mortality rate is 50 to 60%.⁶ Current guidelines suggest that patients with a symptomatic IMAD and with a suspicion of bowel ischemia should be considered for endovascular revascularization⁵ but doesn't elucidate and mention in which patients the open repair should be offered as a first or alternative option. Resection of the dissective membrane from the origin of the SMA with selective embolectomy of the arcade arteries and reconstruction with vein patch, remains an important option in cases of extended lesions of the SMA with distal embolism.^{7,8}
3. What we also don't know so clearly is the identification of the predicting factors of the disease which will lead to symptoms and finally to bowel ischemia or aneurysmatic expansion and rupture. The vascular remodeling of the visceral artery is an important factor related to the short- and long-term clinical outcome. Various classifications have been proposed to describe the morphometric characteristics of the dissected segment of the superior mesenteric artery (SMA). The Sakamoto classification was the first one and more simple which attempted to analyze the presence of false luminal flow and true lumen paten-

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cy at the dissected segment.⁹ The classification proposed by Yun added the type of complete thrombosis of the dissected SMA.¹⁰ Some studies suggest that limited dissection with re-entry, corresponding to type I lesions according to the Sakamoto and Yun classifications, is the most favorable type and can be treated sufficiently with optimal medical therapy because it is not associated with changes in CT findings or presence of symptoms in follow up.^{9,11} Clinical symptoms seem to be associated with the length of dissection and the degree of true lumen stenosis.¹¹ The “cul-de-sac” shaped false lumen (Type II according to Sakamoto and Ila according to Lun) without re-entry, has been associated with aneurysmal formation.¹¹ A patent false lumen and aneurysmal formation on an initial CT scan have been identified as negative factors that affect the favorable remodeling of the SMA.¹²

In conclusion, the level of evidence for the current guidelines is C and the clinical decision making recommendations come exclusively from observational studies. Grey zones exist and issues that we don't know regarding this sneaky disease need to be clarified with more evidence and data in future studies. The subgroup of patients that will be benefited from open repair as a first option should be defined. Identification of the prognostic factors that lead to a favorable SMA remodeling and clinical outcome is important. In case of an unfavorable SMA remodeling, a close follow-up protocol is necessary. The duration and frequency of follow-up with imaging and the antithrombotic therapy need to be also better defined.

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