

# Aorto-mesenteric Bypass for the Treatment of Chronic Mesenteric Ischemia

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## ABSTRACT

Chronic mesenteric artery disease has a much lower incidence than the acute one, but it raises the same problems in terms of patient survival. The long-term outcomes for open surgery are crucial for the right choice of a particular technique. We present the case of a 39-year-old female patient with a history of total nephrectomy, chronic kidney failure, and hypertension, who presented in the Emergency Department with abdominal pain with high intensity, for which she was admitted to the General Surgery Department. Abdominal computed tomography angiography was performed, which indicated the diagnosis of partial upper mesenteric artery stenosis. The patient underwent surgery, during which a retrograde aorto-mesenteric bypass with a Gore-Tex 5 mm diameter prosthesis was performed. In situations where the endovascular approach fails or has no indication (multiple incidence lesions from the origin of the superior mesenteric artery), open surgery is the indication in chronic mesenteric ischemia.

**Keywords:** chronic mesenteric ischemia, revascularization, bypass

## INTRODUCTION

Chronic mesenteric ischemia can result from embolic or thrombotic events, trauma, and distal thoracic or abdominal aortic coarctation. It is an uncommon cause of acute abdomen, accounting for less than 1 in every 1000 hospital admissions, being associated with an increased mortality.<sup>1,2</sup> More than 90% of cases of chronic mesenteric ischemia develop due to atherosclerotic disease that affects the origins of the visceral vessels.<sup>1-3</sup> Early diagnosis and treatment are essential.<sup>2-4</sup>

We present a case of chronic mesenteric ischemia, highlighting the importance of early recognition and timely revascularization.

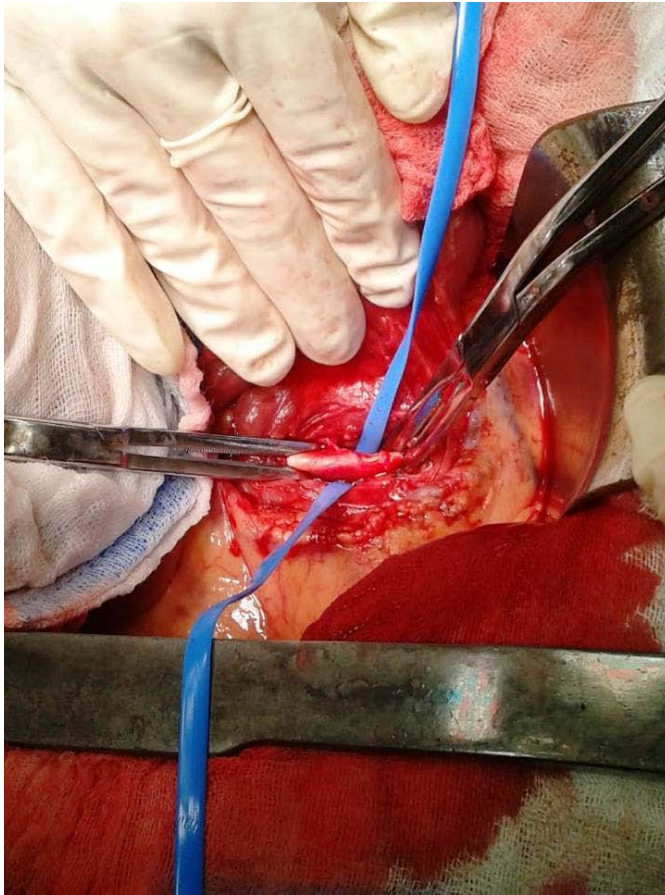
## CASE REPORT

We present the case of a 39-year-old female patient who presented in the Emergency Department for acute abdominal pain, nausea and vomiting, for which she was admitted to the General Surgery Department.

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**FIGURE 1.** Superior mesenteric artery prepared for bypass



**FIGURE 2.** Aorto-mesenteric bypass with 5 mm Gore-Tex prosthesis (final aspect)

Her past medical history included a total nephrectomy, with secondary chronic kidney failure. Also, she had a risk factor for developing atherosclerosis, due to chronic tobacco use.

On admission, she was hypertensive, but observations were otherwise normal. An abdominal computed tomography angiography (CTA) was performed, which demonstrated a partial upper mesenteric stenosis. We performed a retrograde aorto-mesenteric bypass (Figure 1) with a Gore-Tex prosthesis of 5 mm diameter (Figure 2). Evolution was favorable, and the patient was discharged 6 days after surgery.

The patient remains asymptomatic and continues to be kept under surveillance, with constant follow-up visits.

The patient agreed to the publication of her data and the manuscript was written in accordance with the ethical principles stated in the Declaration of Helsinki.

## DISCUSSIONS

Chronic mesenteric ischemia is the most common vascular disorder involving the intestines. The increased utiliza-

tion of CTA and magnetic resonance angiography (MRA) has increased the recognition of atherosclerotic mesenteric stenoses.<sup>3-5</sup> In our case, we performed an abdominal CTA, in which a partial upper mesenteric stenosis was highlighted.

Open mesenteric revascularization has evolved in the last years and represents the standard method compared to endovascular techniques,<sup>6,7</sup> having low mortality rates and providing excellent long-term primary patency rates.<sup>7,8</sup>

Choosing the technique (reimplantation, endarterectomy, antegrade or retrograde by-pass) is at the discretion of the surgeon, depending on the lesions. Antegrade bypass is more frequently performed because in the overpass portion the aorta is more commonly not affected by atherosclerosis. In contrast, the retrograde technique implies an easier exposure of the in-flow vessel. We performed a retrograde aorto-mesenteric bypass with a Gore-Tex prosthesis of 5 mm diameter. The postoperative evolution was favorable, with no complications on the short- and long-term follow-up.

## CONCLUSIONS

In situations where the endovascular approach fails or has no indication, such as multiple lesions initiating from the origin of the superior mesenteric artery, open surgery is the indication in chronic mesenteric ischemia.

## CONFLICT OF INTEREST

The authors declare no conflict of interests.

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