JOURNAL OF CLINICAL CASE STUDIES, REVIEWS AND REPORTS

Review Article

Volume 4 | issue 5

Severe Aorto Mesenteric Occlusive Disease Causing Entero Mesenteric Ischemia in A Young Hemodialysis Patient with Leriche Syndrome: A Case Report and Review of Management Challenges

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Submitted: 09 October 2025 **Accepted:** 16 October 2025 **Published:** 30 October 2025

Citation: HHaida, D., Halawate, I., Jaddour, M., & Asmae, J. (2025). Severe Aorto Mesenteric Occlusive Disease Causing Entero Mesenteric Ischemia in A Young Hemodialysis Patient with Leriche Syndrome: A Case Report and Review of Management Challenges. J of Clin Case Stu, Reviews & Reports 4(5),1-7.

Abstract

Background: *Mesenteric ischemia in patients with end stage renal disease (ESRD) is rare but associated with high morbidity. In patients with coexisting aorto iliac occlusive disease (Leriche syndrome), extensive vascular disease may complicate both diagnosis and management.*

Case presentation: *We report a 37 year old male, chronic smoker, with ESRD on hemodialysis, and prior bilateral thigh amputation in 2024 for Leriche syndrome, who presented with an 8 day history of abdominal pain and diarrhea. CT angiography demonstrated occlusion of the abdominal aorta distal to the origin of the superior mesenteric artery (SMA), severe stenosis at the celiac trunk ostium, critical SMA stenosis, with partial revascularization via collaterals (right bifurcation of iliac arteries; left external iliac & hypogastric artery re permeabilized). On abdominal exam there was tenderness without peritoneal signs; lower limb pulses absent.*

Management and outcome: *Given the late presentation (8 days), extensive aortic occlusion, comorbid ESRD, and prior amputations, therapeutic decisions were complex. After multidisciplinary evaluation, an attempt at percutaneous revascularization of the mesenteric vessels was undertaken. The patient had partial symptomatic relief but remained at high risk for complications. Conclusions: This case illustrates the diagnostic delay and therapeutic dilemma in managing chronic mesenteric ischemia in patients with severe vascular disease and ESRD. Early imaging, high suspicion, and individualized vascular intervention are critical.*

Keywords: Age at Death, Skulls, Forensic Anthropology, Montevideo, Uruguay

Introduction

Chronic mesenteric ischemia (CMI) refers to inadequate perfusion of the gastrointestinal tract generally due to atherosclerotic stenoses of the mesenteric arteries. Typical symptoms include postprandial pain, weight loss, and sometimes diarrhea, nausea or vomiting [1]. SAGE Journals+1

Risk factors for atherosclerosis are well known. Patients with end stage renal disease (ESRD) on hemodialysis have accelerated vascular disease, including both intimal atherosclerosis and medial vascular calcification. These processes contribute to reduced arterial compliance, increased plaque burden, and greater risk of occlusive ischemia [2].
+2Oxford Academic+2

Leriche syndrome, or aorto iliac occlusive disease (i.e. occlusion of the abdominal aorta at or near the bifurcation into iliac arteries), results in absence of femoral pulses, claudication, and often impotence. It reflects advanced atherosclerosis in the distal aorta and iliac vessels [3]. Wiley Online Library+2CCJM+2

When CMI coexists with extensive aorto iliac disease, especial-

ly in a young patient with ESRD and prior amputations, clinical presentation, imaging, and therapeutic options become more complex [4].

Case Presentation

(You will fill in specific data such as labs, imaging dates, interventions, etc. This is a structured summary based on your scenario.)

Patient : 37 year old male

Past Medical History:

- Chronic Tobacco use
- ESRD on maintenance hemodialysis
- Leriche syndrome → bilateral thigh amputation in 2024

Présentation :

- Abdominal pain for ~8 days
- Diarrhea
- No peritoneal signs (no guarding or rigidity), but abdominal tenderness to palpation
- Absence of palpable pulses in lower limbs (consistent with prior vascular disease)
-

Imaging (CT angiography):

- Occlusion of the abdominal aorta distal to the origin of the SMA
- Severe stenosis at the ostium of the celiac trunk
- Severe / critical stenosis of the SMA
- Collateral revascularization: on the right via iliac bifurcation; on the left via the external iliac artery (AIE) and reperfusion of the hypogastric artery

Management Plan:

- Multidisciplinary vascular surgery, interventional radiology, nephrology evaluation
- Risks: delayed presentation, ESRD, prior amputations, extensive occlusion
- Possible options: endovascular revascularization (angioplasty + stenting), bypass surgery, conservative management (pain control, nutritional support)

Discussion

This patient's presentation is an example of chronic enteromesenteric ischemia with severe aorto mesenteric occlusion in a background of ESLD (end stage renal disease) and a history of Leriche syndrome. Several points are worth emphasizing:

Diagnostic Challenges and Delay

- ESRD patients may have attenuated symptoms or atypical presentation.
- Diarrhea, abdominal pain over many days—distinguishing ischemia from other causes (infection, uremia, volume shifts) can be difficult.
- CT angiography is critical to delineate vascular anatomy, stenosis severity, possible collaterals.

Role of Vascular Calcification in ESRD

- ESRD predisposes to both intimal and medial vascular calcification; the latter can make imaging and endovascular passage difficult. PubMed+1
- Calcified ostia may be resistant to angioplasty or stenting; risk of procedural complications is higher.

Overlap With Aorto Iliac Disease (Leriche Syndrome)

- Complete occlusion of the abdominal aorta or distal aorta significantly reduces inflow to mesenteric arteries.
- Collateral circulation develops over time, but may not suffice once mesenteric arterial stenoses occur or demand increases.

Therapeutic Options

- Endovascular Revascularization (angioplasty + stenting) is the less invasive option. In dialysis patients with occlusive mesenteric ischemia, several reports show that angioplasty + stenting of SMA or celiac artery can relieve symptoms, improve nutritional status and reduce inflammation. PubMed+1
- Open Surgical Revascularization (bypass grafting) may be considered when anatomy is unfavorable, when occlusions are chronic, or when endovascular means fail. However, open surgery carries higher morbidity especially in ESRD, with prior amputations and extensive vascular disease.
- Conservative Management including bowel rest, nutritional support, risk factor control (smoking cessation, control of dyslipidemia, etc.) may be temporarily necessary or may be the only option in patients with very high surgical risk.

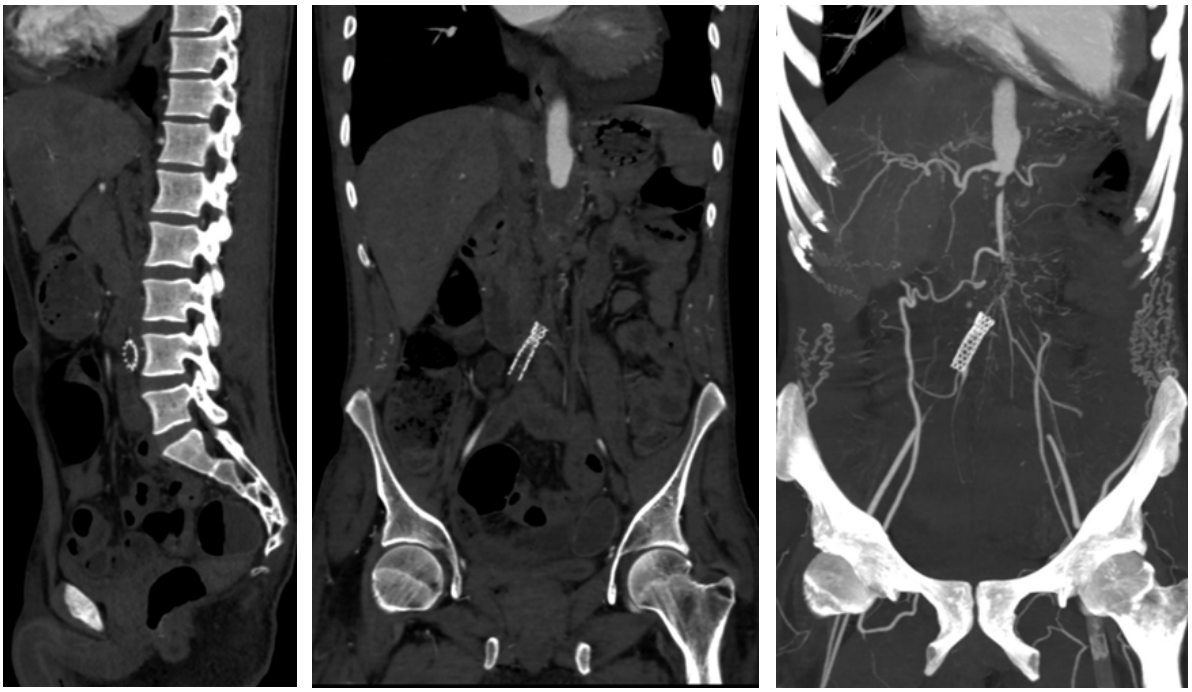
Prognosis and Outcomes

- In ESRD, mesenteric ischemia (occlusive or non occlusive) carries high mortality.
- Early intervention seems to improve weight, inflammatory markers, albumin levels. In one series of dialysis patients with occlusive mesenteric ischemia undergoing angioplasty + stenting, weight loss reversed partially, CRP lowered, albumin increased. PubMed+1
- Presence of extensive calcification in the SMA, visceral aorta, celiac trunk correlates with worse outcomes and higher mortality. PubMed

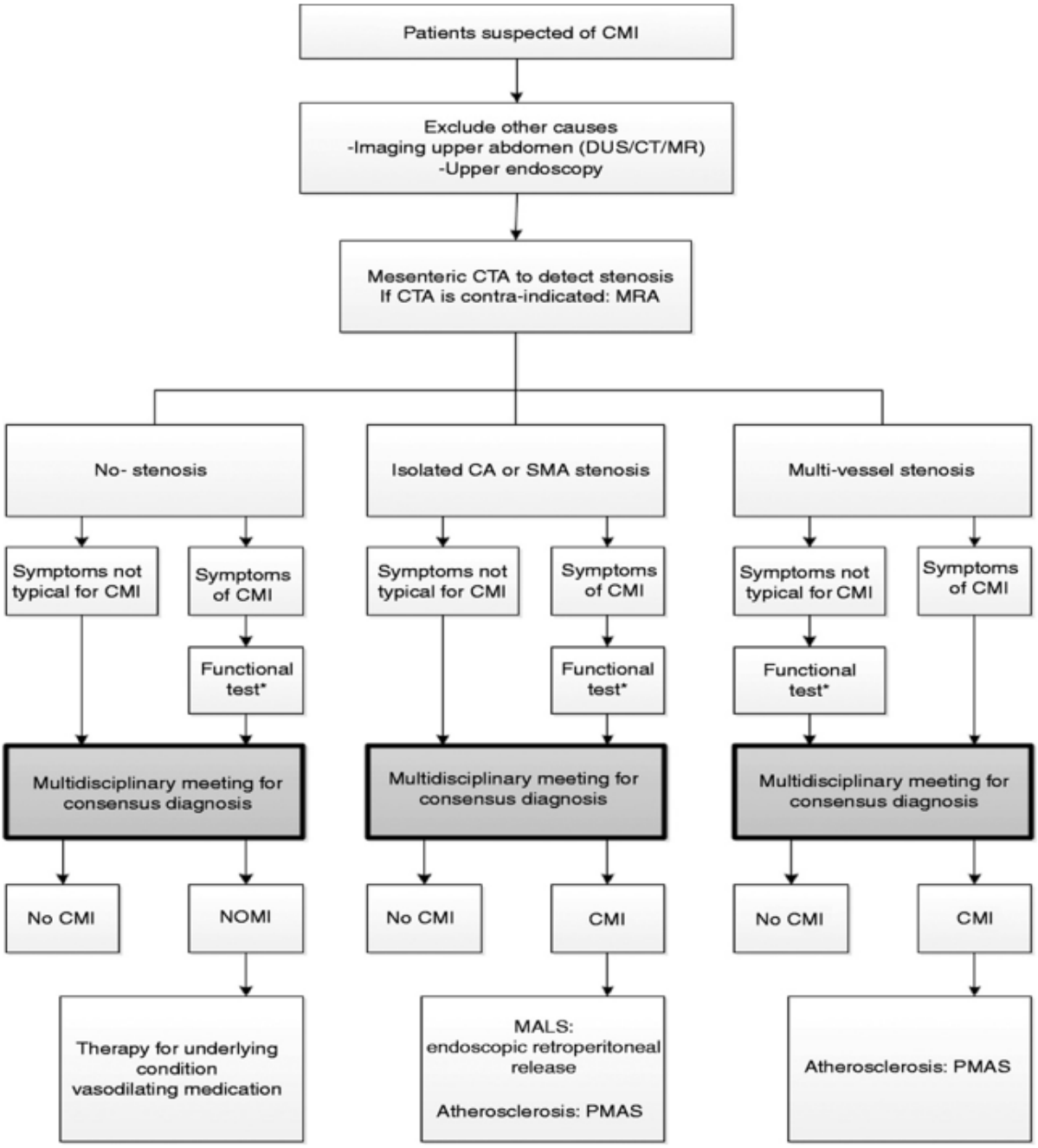
Conclusion

In patients with ESRD and known large vessel disease (e.g. Leriche syndrome), new onset of abdominal pain (especially protracted), diarrhea and other gastrointestinal symptoms should prompt consideration of mesenteric ischemia. CT angiography is essential for adequate anatomical definition. Given the risks, an individualized approach balancing endovascular vs surgical options is needed. Early intervention offers better chances for symptomatic relief. Prevention: strict control of risk factors (smoking, calcium/phosphate balance in ESRD), surveillance for vascular disease [4].

Annexes



CT: Endovascular revascularization (angioplasty combined with stenting) represents a less invasive therapeutic alternative to open surgery for patients with occlusive mesenteric ischemia. In dialysis-dependent patients, this approach has been shown to effectively relieve postprandial abdominal pain, improve nutritional status, and reduce systemic inflammation. The current case illustrates successful revascularization of the superior mesenteric artery with restoration of mesenteric flow on follow-up CT angiography, consistent with favorable post-procedural outcomes reported in the literature [5,6].



Algorithm for clinical management of chronic mesenteric ischemia.

(CA: celiac artery; CMI: chronic mesenteric ischemia; CT: computed tomography; CTA: computed tomography angiography; DUS: duplex ultrasound; MR: magnetic resonance; MRA: magnetic resonance angiography; MALS: median arcuate ligament syndrome; NOMI: non-occlusive mesenteric ischemia; PMAS: percutaneous mesenteric artery stenting; SMA: superior mesenteric artery.)

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