Acute mesenteric ischemia in a young patient

Isquemia mesentérica aguda en paciente joven

Julio César Cuevas*

Hospital Regional de Caazapá. Caazapá, Paraguay

ABSTRACT

Acute mesenteric ischemia is a consequence of the sudden interruption of the blood supply to the intestine, if left untreated, it leads to complications and irreversible damage such as necrosis of the intestinal wall and death. The various causes and non-specific clinical symptoms make diagnosis difficult, resulting in late diagnosis and late therapeutic intervention. It constitutes a great clinical challenge since the guidelines for the therapeutic management of these patients are not defined. The clinical case of a young patient with abdominal pain secondary to mesenteric ischemia is presented.

Key words: Mesenteric ischemia, acute abdomen, laparotomy.

RESUMEN

La isquemia mesentérica aguda es consecuencia de la interrupción repentina del suministro de sangre al intestino, de no tratarse, da lugar a complicaciones y daños irreversibles tales como la necrosis de la pared intestinal y la muerte. Las diversas causas y los síntomas clínicos inespecíficos dificultan el diagnóstico, lo que resulta en un diagnóstico tardío y una intervención terapéutica tardía. Constituye un gran desafío clínico ya que no están definidas las pautas para el manejo terapéutico de estos pacientes. Se presenta el caso clínico de un paciente joven con dolor abdominal secundario a isquemia mesentérica.

Palabras claves: Isquemia mesentérica, abdomen agudo, laparotomía.

INTRODUCTION

Mesenteric ischemia is frequently defined as a group of symptoms which result in a chronic occlusion of the mesenteric vessels that irrigate the intestines. This initially leads to cellular damage, tissue death due to ischemia and later secondary inflammation. In untreated cases, mesenteric ischemia leads to a potentially deadly intestinal necrosis [1].

Although mesenteric ischemia's incidence is relatively low (0.09-0.2% out of every acute surgical case) it should always be excluded as differential diagnostic due to the reported high mortality (50-80%) [1]. The condition exponentially increases with age and has no gender predilection [2].

Acute mesenteric ischemia's occlusive causes include mesenteric artery embolism (50% of cases), mesenteric artery thrombosis (15-25%) and celiac trunk thrombosis (5-15%). The diverse causes and unspecific clinical symptoms difficult diagnosis, which regularly results in late diagnosis and therapeutic intervention. It represents a great clinical challenge given that there are no clear guidelines for the therapeutic treatment of these patients [1].

Acute mesenteric ischemia constitutes an abdominal urgency, due to the scarce time between the vascular flux's decrease to the intestinal loops and the irreversible instauration of an intestinal necrosis [3].

Usual clinical presentation consists of abdominal pain, reaching a 94% incidence. In sudden onset cases, in its early form, it could preset with vomiting (38%), diarrhea (31%) and occasionally bloody stools [4].

There are no specific laboratory tests for the disease. Leukocytosis, increased levels of lactate dehydrogenase serum, amylase serum, creatine phosphokinase, alkaline phosphatase and metabolic acidosis. Imagery studies are the most useful complementary exams for diagnosis, amongst them angiography and multi-slice CT scan with venous contrast [4].

Handling implies initial reanimation (fluid therapy with crystalloids and blood products), afterwards a laparotomy must be performed, followed by an evaluation of every necrotic area of the intestine to be dried out [5].

The advancement in the knowledge of acute mesenteric ischemia's pathophysiology, diagnostic and treatment has saved lives and preserved intestinal function in a great number of patients suffering from mesenteric ischemia, specially in highly specialized centers [6].

CLINICAL CASE'S PRESENTATION

Male patient, 43 years old, admitted into service due to 18-hour evolutive abdominal pain, of sudden onset, great intensity, stinging type, initiated in the periumbilical region to later be generalized. Accompanied by nausea and alimentary-content vomiting, on several occasions. Denies fever and other symptoms. As relevant history, has had laparotomy due to piercing abdomen trauma 6 years back.

Upon physical examination, abdomen shows to be distended, asymmetric besides a medium supraparainfraumbilical scar. Tense, slightly depressing, painful upon deep touching, muscular defense and perceptible peritoneal irritation in all quadrants. Acute surgical abdomen of to-be-determined origin is stablished.

* On-call surgeon, Hospital Regional de Caazapá
Corresponding author: Dr. Julio César Cuevas
Email: cesarjuly87@gmail.com - Address: Hospital Regional de Caazapá. Caazapá, Paraguay
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Nasogastric tube is installed, with intestinal liquid exit of porraceous appearance in scarce quantities.

Hemodynamically unstable patient, tachycardic with hypertension tendency, laboratory check is performed which reveals ranged leukocyte count with slight neutrophilia (9900, 74%). Simple abdomen tomography yields edematous thin loops with bowel sounds and free liquid in the abdominal cavity.

Patient reports generalized abdominal pain with muscular defense and peritoneal irritation hence an exploratory laparotomy is decided upon, yielding thin loop-leveled acute mesenteric ischemia, serosanguineous liquid in cavity, necrotic thin loops with a transition zone 100cm from the Treitz angle ***(see Figure 1).***

A resection of the affected jejunum-ileum is performed, along with an ileostomy with distal lump closure, washing and drying.

Patient is transferred to intensive care unit immediately after operation, hemodynamically stable, intubated to mechanically assisted breathing, with inotropic support [noradrenaline drip (NAD)]. Arterial blood gas revealed pH 7,17; EB-14, HCO3-13; 100% O2 saturation. Proper postoperative evolution, patient is transferred to hall.

Patient presented favorable evolution, after inner half correction and antibiotic therapy covering abdominal focus, is discharged after seven days with ambulatory follow-up plans.

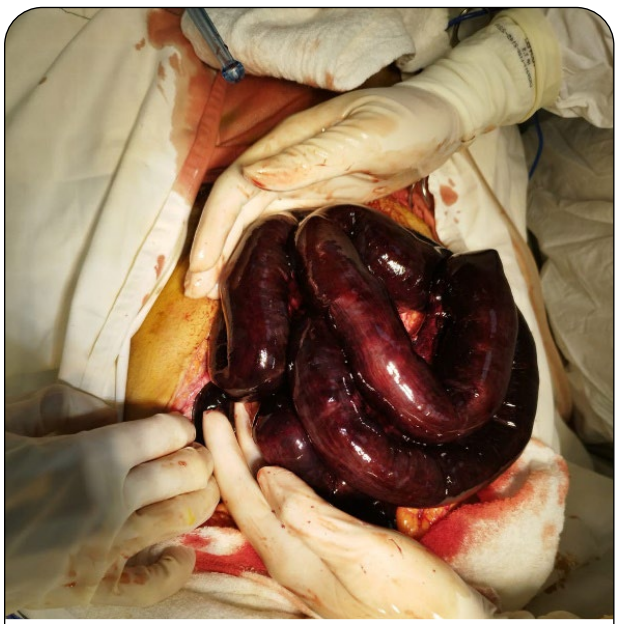

Figure 1. Macroscopic image of necrotic thin loops.

DISCUSSION

Acute mesenteric ischemia must be suspected in patients with acute abdominal pain who don't have a clear diagnosis, particularly when the pain is disproportionate with regards to the physical exam's findings [7].

Early diagnosis is vital for a successful treatment. For the treatment's planification, it's also important to distinguish between reversible intestinal ischemia and unreversible transmural intestinal necrosis [8].

It's recognized that acute mesenteric ischemia predominantly presents itself in patients whose age is greater to the fifth decade of life and with risk factors, however, it's a differential diagnosis to consider in patients with an acute abdomen and no certain diagnosis, and in which we cannot delay therapeutic treatment due to the inversely proportional survival of early diagnosis.

The presented case reflects that acute mesenteric ischemia, although rare in young patients, its unstable course or with peritonitis abdomen implies immediate surgical intervention through a laparotomy, which cannot be delayed regardless of its etiology.

Conflict of interest
The author declares no conflict of interest.

Ethical considerations
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Author's contribution
The author performed the description and correction of the clinical case.

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