

CASE REPORT: INTRAOPERATIVE ENTEROSCOPY IN THE DIAGNOSIS OF A CASE OF GASTROINTESTINAL BLEEDING

RHAISSA ALVARENGA DE TOLEDO¹; ISABELLE MARTINS NÓBREGA¹; ANDRESSA OLIVEIRA PEREIRA¹;
LEONARDO ETERNO MEDEIROS DOS SANTOS²

1. Hospital de Urgências de Goiás, Goiânia - GO
2. Hospital Estadual de Aparecida de Goiânia - GO

ABSTRACT

The article in question describes a clinical case of gastrointestinal bleeding originating from the small intestine, a condition that requires challenging diagnostic strategies, especially in patients within the public healthcare system. The case report details the patient's clinical presentation and the complementary diagnostic sequence involved in elucidating the condition, employing intraoperative enteroscopy to identify the probable site of bleeding for a definitive surgical approach. During the surgical procedure, the surgeons were able to perform an assessment that few emergency centers would allow, by mobilizing the digestive endoscopy and digestive surgery team for the intraoperative enteroscopy. The objective of the case report is to provide a detailed description of a specific clinical case, demonstrating the clinical presentation, diagnosis, treatment, and progression of this condition, with emphasis on the diagnostic challenge for adequate treatment. Finally, the final considerations, the results were analyzed in light of the medical literature and discussed in terms of diagnosis, therapeutic management, and specific challenges encountered during the patient's treatment.

Keywords: Intraoperative Enteroscopy; Intraoperative; Surgery; Case report.

INTRODUCTION

In patients with gastrointestinal bleeding, approximately 5-10% will not have an identified source with standard endoscopic and radiographic evaluation. In about 75% of these patients, the source is in the small intestine¹. The most common initial step in evaluating suspected small intestine bleeding is capsule endoscopy, provided that the initial upper endoscopy and colonoscopy are complete and have good visualization. However, capsule endoscopy is not available in the SUS procedure table, making intraoperative enteroscopy an alternative for investigating these cases.

OBJECTIVE

The present work aims to share the experience of the General Surgery Department at the Hospital de Urgências de Goiás - HUGO.

METHOD

The patient J.L.S, a 73-year-old man, was selected based on clinical presentation and diagnosis. Data were collected from the patient's medical history, including reported symptoms, laboratory test results, imaging findings, and information about the surgical procedure.

The patient's previous exams were reviewed, and the clinical case was thoroughly described,

including the patient's medical history, physical findings, results of previous tests, and intraoperative findings. The collected data were analyzed in light of relevant medical literature, discussing the symptoms, diagnosis, treatment, and outcomes of the case in question.

CASE REPORT

A 73-year-old male patient was admitted to the emergency department due to gastrointestinal bleeding, with a reported history of episodes of melena and enterorrhagia. He was hemodynamically unstable, requiring vasoactive drugs and mechanical ventilation. A transfusion of 3 units of packed red blood cells (PRBC) and 2 units of fresh frozen plasma (FFP) was performed. An upper endoscopy (EGD) was conducted, revealing moderate enanthematous gastritis. A contrast-enhanced abdominal CT scan showed colonic diverticulosis, blurring and densification of mesenteric fat, and a small amount of fluid in the peritoneal cavity. A colonoscopy was not performed due to the patient's hemodynamic status.

He evolved with no further episodes of melena or enterorrhagia, and on the 3rd day of hospitalization, he presented with hypovolemic shock, requiring a massive transfusion protocol (4 units of PRBC, 4 units of FFP, and 4 units of platelets). A new upper endoscopy (EGD) was indicated in the operating room, along with exploratory laparotomy and intraoperative enteroscopy to investigate the source of bleeding. The preoperative endoscopy did not reveal any lesions that would explain the condition. During the cavity inventory, a change in the color pattern of the content, suggestive of hematin, was observed 2 meters from Treitz and 20 cm from the ileocecal valve upon transillumination. An enterotomy was performed in this segment for intraoperative enteroscopy, which revealed multiple diverticula in the distal ileum, with no active bleeding but with hematin present and a large amount of retained melena in the cecum. A right hemicolectomy, resection of 20 cm of ileum, and double-barrel ileotransversostomy were performed. The patient showed progressive hemodynamic improvement and was discharged after 12 days. Pathological analysis was negative for malignancy. He underwent intestinal reconstruction 8 months later and is under follow-up with no new episodes of gastrointestinal bleeding.

Figures 1 and 2: Preoperative endoscopy showing findings suggestive of hematin upon transillumination in the distal ileum (20 cm from the ileocecal valve).

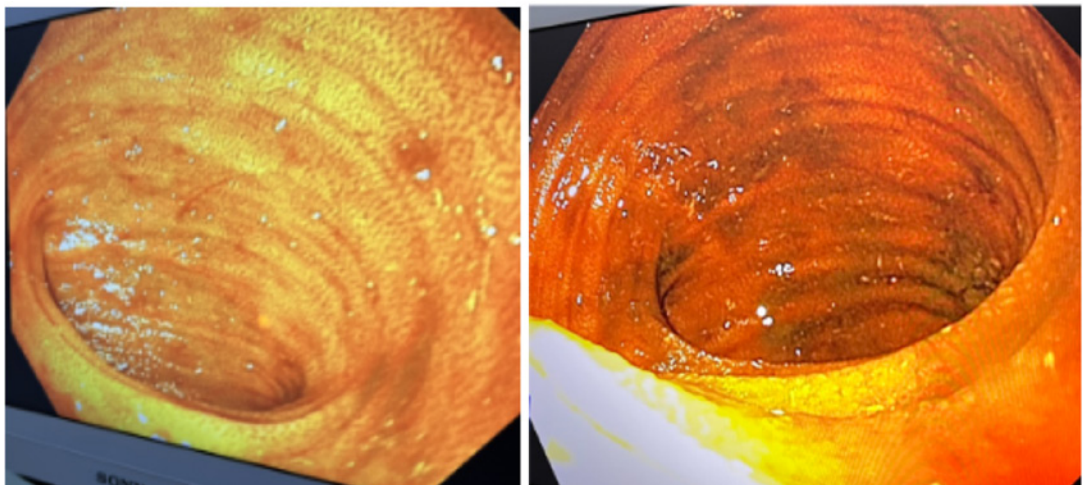


Figure 3: Intraoperative enteroscopy traversing the entire length of the small intestine.



Figure 4: Surgical specimen - right hemicolectomy and enterectomy.



DISCUSSION

Most cases previously referred to as obscure bleeding are more accurately categorized as suspected small bowel bleeding. The evaluation of suspected small bowel bleeding involves a thorough search for the cause of the bleeding, guided by the clinical history, physical findings, and results of any previous evaluations. Additional tests that may be indicated include wireless video capsule endoscopy, deep small bowel enteroscopy, radiographic imaging (CT enterography, CT angiography [CTA], or MR enterography), and intraoperative enteroscopy².

The frequency of missed lesions during upper gastrointestinal endoscopy or colonoscopy was examined in a study of 317 patients who underwent capsule endoscopy due to suspected small bowel bleeding. A bleeding source outside the small intestine was found in 11 patients (4%). The bleeding origin was found in the upper gastrointestinal tract in four patients, with lesions including gastric cancer (one patient) and angioectasia of the stomach or duodenum (three patients, including one case of GAVE). In seven patients, the source of bleeding was identified in the colon. Lesions found in the colon included colon cancer (three patients), angioectasias (two patients), diverticulum (one patient with evident bleeding), and Crohn's disease colitis (one patient)³.

In patients with negative capsule endoscopy and CT enterography results and ongoing bleeding, the next step in evaluation is usually deep small bowel enteroscopy, if available. Intraoperative enteroscopy is an option if deep small bowel enteroscopy or push enteroscopy does not reveal a source of bleeding, if there is massive bleeding with hemodynamic instability, or if there are contraindications to deep small bowel enteroscopy, such as dense abdominal adhesions⁴.

Intraoperative enteroscopy involves inserting an endoscope through an enterotomy site, either via oral or rectal approach during surgery. The surgeon telescopes the intestine over the endoscope, allowing inspection of the entire length of the small intestine in over 90% of patients. Although generally avoided, intraoperative enteroscopy may be the only option in patients with significant and ongoing bleeding where no bleeding source has been identified through less invasive methods⁵. The diagnostic yield ranges from 60% to 88%, with rates of recurrent bleeding ranging from 13% to 60%⁶.

In a study that used intraoperative enteroscopy in patients with bleeding or anemia, the diagnostic yield was 69%. Segmental resection was performed in 90% of these patients, with a symptom recurrence rate of 20%. No severe complications were reported. It should be understood that the safe insertion of an endoscope through an enterotomy is limited by the endoscope's curvature radius and the length of the mesentery. It is much safer, if a complete examination of the small intestine is needed, to perform one or more enterotomies rather than stretching and tearing the mesentery and its vessels⁷.

REFERENCES

1. Tee HP, Kaffes AJ. Non-small-bowel lesions encountered during double-balloon enteroscopy performed for obscure gastrointestinal bleeding. *World J Gastroenterol.* 2010;16(15):1885-9.
2. Gerson LB, Fidler JL, Cave DR, Leighton JA. ACG clinical guideline: diagnosis and management of small bowel bleeding. *AM J Gastroenterol.* 2015 Sep;110(9):1265-87.
3. Vlachogiannakos J, Papaxoinis K, Viazis N, Kegioglou A, Binas I, Karamanolis D, Ladas SD. Bleeding lesions within reach of conventional endoscopy in capsule endoscopy examinations for obscure gastrointestinal bleeding: is repeating endoscopy economically feasible? *Dig Dis Sci.* 2011 Jun;56(6):1763-8.
4. Zaman A, Sheppard B, Katon RM. Total peroral intraoperative enteroscopy for obscure GI bleeding using a dedicated push enteroscope: diagnostic yield and patient outcome. *Gastrointest Endosc.* 1999 Oct;50(4):506-10.
5. Ress AM, Benacci JC, Sarr MG. Efficacy of intraoperative enteroscopy in diagnosis and prevention of recurrent, occult gastrointestinal bleeding. *AM J Surg.* 1992 Jan;163(1):94-8.
6. Raju GS, Gerson L, Das A, Lewis B, American Gastroenterological Association. American Gastroenterological Association (AGA) Institute medical position statement on obscure gastrointestinal bleeding. *Gastroenterology.* 2007 Nov;133(5):1694-6.
7. Green J, Schlieve CR, Friedrich AK, Baratta K, Ma DH, Min M, Patel K, Stein D, Cave DR, Litwin DE, Cahan MA. Approach to the diagnostic workup and management of small bowel lesions at a tertiary care center. *J Gastrointest Surg.* 2018 Jun;22(6):1034-42.

Rhaissa Alvarenga de Toledo
<https://orcid.org/0009-0007-0207-3245> - <http://lattes.cnpq.br/5427188274756071>

Isabelle Martins Nóbrega
<https://orcid.org/0009-0001-1554-2895> - <http://lattes.cnpq.br/4446684606831297>

Andressa Oliveira Pereira
<https://orcid.org/0009-0003-0119-6869> - <http://lattes.cnpq.br/7490323156974864>

Leonardo Eterno Medeiros dos Santos
<https://orcid.org/0009-0007-7088-6475> - <http://lattes.cnpq.br/1872530074506390>

ENDEREÇO

RHAISSA ALVARENGA DE TOLEDO
Av Afonso Pena, qd A, It 1-13, red Kalahari apt 1402 t 3
E-mail: rhaissaalvarengat@gmail.com

Revisão Ortográfica: Dario Alvares

Recebido: 09/06/24. Aceito: aprovado 14/08/24. Publicado em: 06/09/24.