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Rodrigo Quera*, Andrea Córdova, Paulina Núñez, Christian von Muhlenbrock

Centro de Enfermedades Digestivas, Clínica Universidad de los Andes, Universidad de los Andes, Santiago, Chile

* Corresponding author.

E-mail address: rquera@clinicaauandes.cl (R. Quera).

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Barium enema: Compassionate therapy for refractory colonic diverticular bleeding?



Enema de bario: ¿terapia de uso compasivo para la hemorragia diverticular colónica refractaria?

A 67-year-old man with a history of arterial hypertension and religious orientation of Jehovah's Witness, and refusing to receive red cell concentrate (RCC) transfusions, was admitted for acute lower gastrointestinal haemorrhage (LGH). By performing an initial colonoscopy, the LGH was associated with a sigmoid diverticular origin, without locating any specific bleeding point for treatment. Because of exteriorization persistence, an abdominal angiography computed tomography (angioCT), an arteriography, and a second colonoscopy were performed, with no possibility of therapeutic application. Haemoglobin (Hb) levels progressively decreased to 4.2 g/dL. After compassionate administration of a barium enema, no new episodes of bleeding were reported, allowing discharge of the patient 12 days' post-enema, with an Hb level of 6.4 g/dL. At 88 months of follow-up, no new LGH episodes had been detected.

A 91-year-old woman with a history of hypertension, congestive heart failure, and atrial fibrillation on antiplatelet treatment was admitted for acute painless LGH, with initial haemodynamic instability. An angioCT was performed, visualizing multiple diverticula in the whole colonic tract, with an active bleeding point in the cecum. The patient did well and arterial blood pressure values returned to normal. Colonoscopy showed a cecal diverticulum with a visible vessel, treated with adrenaline and a haemostatic clip. Despite the endoscopic treatment, blood exteriorization persisted, with daily RCC transfusion requirements. During the following three weeks two more colonoscopies were carried out, along with a second angioCT with an arteriography, with-

out revealing a specific bleeding spot to be treated. Finally, a barium enema was administered, leading to the cessation of the LGH. At 17 days' post-enema, the patient was discharged, with an Hb of 8.5 g/dL, after having received a total transfusion support of 17 RCC during the 5 weeks of admission. No new episodes of LGH were detected at 5 months of follow-up, when the patient was admitted for cardiac decompensation and acute pulmonary oedema with an end-of-life denouement.

LGH of diverticular origin is the main cause of bleeding below the angle of Treitz requiring hospital admission in patients over 50 years of age. The usual clinical course in this type of bleeding is self-limiting (80–90% of cases). However, there are patients who require aggressive management of the pathology, with the need for RCC transfusion support, as well as interventions such as colonoscopy, arteriography, or even surgery.¹ The patient's comorbidities and/or antecedents may lead to situations of contraindication of the usual management algorithms in this type of pathology, as in the two cases presented in this scientific letter. The use of barium enema as a therapeutic option in case of LGH of diverticular origin was first reported in 1970 by Adams et al.² Since then, a string of publications have appeared, most of them in the form of case-reports or short series of cases like our experience (Table 1).³ Only one randomized clinical trial has been published, highlighting the usefulness of high-dose barium impaction therapy in the long-term prevention of recurrent bleeding (42.5% vs. 14.8%; log-rank test, $P = 0.04$).²

When performing a colonoscopy in case of colonic diverticular bleeding, it is difficult to locate the bleeding vessel and it is usually not possible to apply targeted therapy. Recently, non-directed endoscopic haemostatic techniques using haemostatic powder devices have appeared, with favourable results described (initial clinical success greater than 95%, with one-month rebleeding rate of 5.5–12.9%).^{4,5} Although the use of the barium enema might hypothetically be compared to these devices for non-directed attempts at haemostasis, the published literature is limited and a

Table 1 Previous scientific literature on therapeutic barium enema for colonic diverticular haemorrhage (adapted, expanded, and updated from³).

Author	Journal	Year	Study type	n	Clinical success* (%)	Follow-up (months)	Recurrent bleeding (%)
Adams et al. ^[I]	Arch Surg	1970	Cohort	28	78.6 (22/28)	6–84	27.3 (6/22)
Koperna et al. ^[II]	Heptaogastroenterology	2001	Case series	63	84.1 (53/63)	NR	NR
Chorost et al. ^[III]	Clin Radiol	2001	Case report	1	100 (1/1)	NR	NR
Matsuhashi et al. ^[IV]	Am J Roentgenol	2003	Case report	1	100 (1/1)	13	0 (0/1)
Iwamoto et al. ^[V]	World J Gastroenterol	2008	Case series	4	100 (4/4)	17–35	0 (0/4)
Pausawasdi et al. ^[VI]	Case Rep Gastroenterol	2011	Case report	1	100 (1/1)	18	0 (0/1)
Fujimoto et al. ^[VII]	Colorectal Dis	2011	Cohort	11	100 (11/11)	1–56	54.5 (6/11)
Niikura et al. ^[VIII]	Case Rep Gastrointest Med	2013	Case report	1	100 (1/1)	3	0 (0/1)
Nagata et al. ^[IX]	Ann Surg	2015	RCT	27	100 (27/27)	7–12	14.8 (4/27)
Matsuura et al. ^[X]	World J Gastroenterol	2015	Case series	20	80 (16/20)	1–19	25 (4/16)
Koga et al. ^[XI]	Endosc Int Open	2016	Case series	3	100 (3/3)	NR	NR
van Dijk et al. ^[XII]	ACG Case Rep J	2018	Case series	3	100 (3/3)	6–36	0 (0/3)
Murayama et al. ^[XIII]	Eur J Radiol Open	2019	Case series	4	100 (4/4)	12	0 (0/4)
Our cases	Gastroenterol Hepatol	2022	Case series	2	100 (2/2)	5–88	0 (0/2)

NR: not reported; RCT: randomized clinical trial.

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* No rebleeding within first 7 days after barium enema administration, allowing discharge of patient.

direct causal relationship between its use and LGH cessation cannot be clearly established, because in most cases the bleeding ceases spontaneously. Barium enema might be an option to consider in selected cases, like the two presented here, in which the usual management options for diverticular LGH are not successful, or when it is not possible to apply them. More studies with larger numbers of patients would be needed to clarify its use as a compassionate therapy for diverticular LGH.

Authors' contributions

Josep M^a Botargues, Mireia Peñalva, Antonio Soriano, Jordi Guardiola: study concept and design, acquisition of data, analysis and interpretation of the data, critical revision of the article, and final approval.

Francesc Bas-Cutrina, Albert Martín-Cardona, Francisco Rodríguez-Moranta: study concept and design, acquisition of data, analysis and interpretation of the data, drafting of the

article, editing of the table, critical revision of the article, and final approval.

Ethical approval

The study researchers have carried out their tasks in compliance with the ethical principles of clinical research established in the Declaration of Helsinki, and with the norms of Good Clinical Practices (International Conference on Harmonization).

The data underlying this short report cannot be shared publicly in order to protect the privacy of the subjects for ethical/privacy reasons. The data, without personal identification of participant subjects, will be shared on reasonable request to the corresponding author.

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Conflict of interest

Albert Martín-Cardona has received financial support for travelling and educational activities from Abbvie, Biogen, Ferring, Janssen, MSD, Takeda, Dr Falk Pharma and Tillotts.

Jordi Guardiola has served as a speaker and as consultant for or has received research or education funding from MSD, Abbvie, Kern, Pfizer, Takeda, Janssen, Ferring, Roche and General Electric.

Francisco Rodríguez-Moranta has served as a speaker for Abbvie, Takeda, Pfizer, Jansen, and MSD, and has served as an advisor for Abbvie, Jansen, MSD, and Pfizer.

The rest of the authors declare no conflicts of interest.

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Francesc Bas-Cutrina^{a,b,*}, Albert Martín-Cardona^{a,c,d}, Josep M. Botargues^a, Mireia Peñalva^a, Antonio Soriano^a, Jordi Guardiola^a, Francisco Rodríguez-Moranta^a

^a *Department of Digestive Diseases, Hospital Universitari de Bellvitge, Barcelona, Spain*

^b *Digestive Diseases Unit, Hospital General de Granollers, Barcelona, Spain*

^c *Department of Digestive Diseases, Hospital Universitari Mútua Terrassa, Barcelona, Spain*

^d *Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBEREHD), Madrid, Spain*

* Corresponding author.

E-mail address: fbas@fphag.org (F. Bas-Cutrina).

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Iron deficiency anemia as the first manifestation of juvenile polyposis syndrome



Anemia ferropénica como primera manifestación del síndrome de poliposis juvenil

We present the case of a 41-year-old woman with a history of Wilms' tumour in childhood and a mother who died of colorectal cancer at the age of 28, referred to the gastroenterology department for iron deficiency anaemia refractory to intravenous iron over the course of a year. Initial gastroscopy revealed more than 200 gastric polyps measuring 3–18 mm, grouped in mammillated masses in the subcardial, distal body, incisura and antrum areas. Characterisation with white light and narrow band imaging (NBI) showed ery-

thematous lesions with a smooth surface, friability with adherent fresh blood-stained debris, tubulo-villous appearance and a dense but regular vascular pattern. Endoscopic ultrasound scan showed a marked irregular thickening of the mucosa, without echogenicity changes, infiltration of other layers or adjacent lymphadenopathy. Polypectomy was performed on the larger lesions, with the pathology study reporting they were compatible with hyperplastic polyps (HP). After assessment by a multidisciplinary committee and in agreement with the patient, the decision was made for minimally invasive treatment by endoscopic resection. In the third gastroscopy, histology of some fragments detected adenomatous changes with low-grade dysplasia and a focus of adenocarcinoma. The genetic study detected a mutation in exon 11 of the *SMAD4* gene, compatible with juvenile polyposis syndrome (juvPS). Tumour markers, colonoscopy, capsule endoscopy, angio-CT and extension CT, echocardiography and exploratory laparoscopy did not detect any distant spread or other associated abnormalities. The patient had