

References

1. Luo Y, Li L, Kong R, et al. Acute necrotizing pancreatitis: challenges and interventions-a narrative review. *J Pancreatol.* 2022;5:164–73, <http://dx.doi.org/10.1097/JP9.000000000000103>.
2. Leppäniemi A, Tolonen M, Tarasconi A, et al. 2019 WSES guidelines for the management of severe acute pancreatitis. *World J Emerg Surg.* 2019;156:1016–26, <http://dx.doi.org/10.1186/s13017-019-0247-0>.
3. Hollemans RA, Bakker OJ, Boermeester MA, et al. Superiority of step-up approach vs open necrosectomy in long-term follow-up of patients with necrotizing pancreatitis. *Gastroenterology.* 2019;156:1016–26, <http://dx.doi.org/10.1053/j.gastro.2018.10.045>.
4. Martin MJ, Brown CVR. Video-assisted retroperitoneal pancreatic debridement. *J Trauma Acute Care Surg.* 2017;83:200–3, <http://dx.doi.org/10.1097/TA.0000000000001464>.
5. Morales-Conde S, Licardie E, Alarcón I, et al. Indocyanine green (ICG) fluorescence guide for the use and indications in general surgery: recommendations based on the descriptive review of the literature and the analysis of experience. *Cir Esp (Engl Ed).* 2022;100:534–54, <http://dx.doi.org/10.1016/j.cireng.2022.06.023>.
6. Asbun D, Kunzler F, Marin R, et al. Pancreatic fluorescence using continuous indocyanine green infusion. *J Surg Oncol.* 2022;126:1215–8, <http://dx.doi.org/10.1002/jso.27055>.
7. Xiang C, Chen Y, Lui X, et al. Prevention and treatment of grade c postoperative pancreatic fistula. *J Clin Med.* 2022;11:7516, <http://dx.doi.org/10.3390/jcm11247516>.
8. Brito-Carmona RD, Cuendis-Velázquez A, Chávez-Hernández AF, et al. Tratamiento laparoendoscópico de necrosis pancreática encapsulada, guiado con verde de indocianina. *Rev Gastroenterol Mex.* 2022;87:388–90, <http://dx.doi.org/10.1016/j.rgm.2021.10.005>.
9. Zhang J-B, Sun B. Comparison between video-assisted retroperitoneal debridement and small incision pancreatic necrosectomy in infected pancreatic necrosis. *ANZ J Surg.* 2020;90:2020–5, <http://dx.doi.org/10.1111/ans.16181>.
10. Huang L, Chen W, Chen J, et al. Indocyanine green-guided intra-operative imaging to facilitate video-assisted retroperitoneal debridement for treating acute necrotizing pancreatitis. *J Vis Exp.* 2022;187, <http://dx.doi.org/10.3791/63236>.

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Strictureing Crohn's disease and intestinal endometriosis: An unusual coexistence



Enfermedad de Crohn estenosante y endometriosis intestinal: coexistencia inusual

Crohn's disease (CD) is an inflammatory bowel disease (IBD) characterized by transmural, segmental, and discontinuous inflammation that can affect any part of the gastrointestinal tract, from the mouth to the anal region. Its transmural involvement can result in complications of fistulas, abscesses and/or strictures.¹ Around 50% of patients with CD are estimated to develop a stricturing phenotype and approximately 75% will require surgery at some point during the course of the disease.²

Colonic stricture affects approximately 10% of the patients with CD,³ with the possible presentation of obstructive symptoms, as well as being asymptomatic. The risk of tumor development is important to consider as a possible cause of strictures in patients with IBD,⁴ given that said malignancies cannot always be ruled out during endoscopy. In such a context, surgery continues to be the gold standard for treatment and for making the definitive diagnosis.

We present herein the case of a patient with stricturing CD of the colon, who underwent surgical resection, and whose histopathologic study was consistent with endometriosis in the area of the stricture.

A 44-year-old woman had a past medical history of CD of the colon, diagnosed in 2013. She had multiple hospitalizations and was corticosteroid-dependent, with thiopurine refractoriness. In 2022, she was started on biologic therapy with infliximab due to perianal disease; later immune failure to that therapy resulted in switching her to adalimumab. Despite symptom improvement, biomarkers remained high (fecal calprotectin) and endoscopic examination revealed active CD in the rectosigmoid colon, with an uncrossable stricture in the sigmoid colon. (Fig. 1A and B). Magnetic resonance enterography (MRE) of the abdomen and pelvis identified inflammatory thickening of the walls of the distal third of the descending colon, the sigmoid colon, and the rectum, with small perirectal and presacral adenopathy (Fig. 1C). Surgical treatment confirmed the stricture and inflammatory activity of the neighboring mucosa (Fig. 1D). The histopathologic study revealed CD activity with a transmural inflammatory infiltrate (Fig. 2A and B), foci of endometriosis in the stricture (Fig. 2C and D) with positive PAX 8 immunohistochemical staining (Fig. 2E and F), and the presence of estrogen receptors (Fig. 2G). The patient progressed satisfactorily, restarting biologic therapy 4 weeks after surgery.

Endometriosis is a condition characterized by the presence of endometrial tissue and estrogen-dependent stroma located outside the uterine cavity,⁵ with a prevalence of 7-10% in women, mainly presenting as abdominal pain.⁵ In 5-12% of cases, it can present at the intestinal level, more frequently at the rectosigmoid level, in 75% of cases.⁶ From

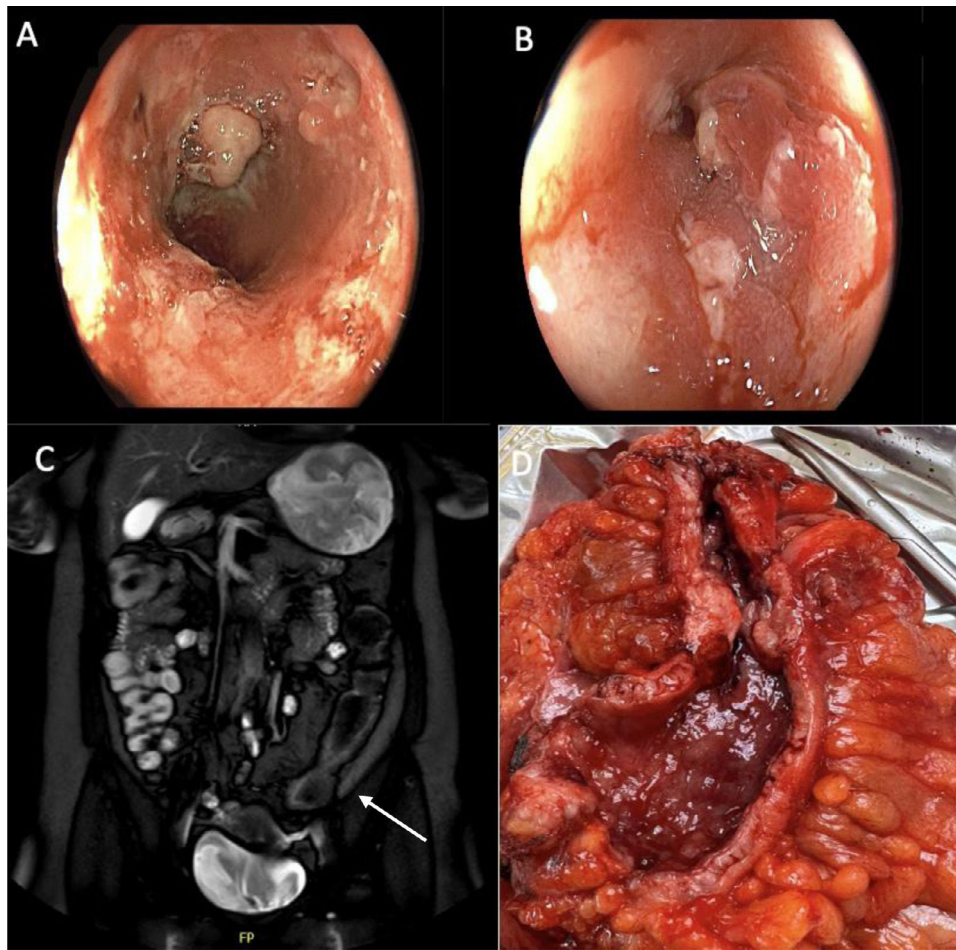


Figure 1 A-B) Endoscopic study performed prior to surgery, showing erythematous and friable mucosa with multiple ulcers and an uncrossable stricture in the sigmoid colon. C) MRE showing a strictured area at the same site (white arrow). D) Surgical specimen after resection, showing a strictured area, with mucosal involvement and transmural extension.

the endoscopic perspective, it can manifest as pedunculated polyps of varying sizes and edematous mucosa with surface erosion. In severe cases, it can cause intestinal strictures. The presence of symptoms, such as abdominal pain, altered bowel habit, and rectal bleeding, makes its diagnosis a challenge in patients with IBD and colonic stricture, especially given the association with a greater risk for tumors.

A cohort study that included 492,000 patients showed that the frequency of IBD in patients with endometriosis was almost double that of the general population, mainly in young women, at a proportion of 2 to 3%.⁷ A review that included 23 articles confirmed a positive association between the two diseases.⁸ This possible association could be partially explained by an autoimmune dysregulation mechanism involving elevated proinflammatory cytokines, decreased cellular apoptosis, and anomalous macrophages, all of which are processes that would be present in both conditions.⁸ In addition, the use of oral contraceptives and nonsteroidal anti-inflammatory drugs in the management of endometriosis can also be considered, given the possibility of their triggering an IBD flare.⁹ In our case, there was no record of the use of nonsteroidal anti-inflammatory drugs or oral contraceptives.

As mentioned above, the preoperative distinction between the two diseases can be difficult due to the overlapping clinical, radiologic, and pathologic characteristics between them, which can lead to erroneous or late diagnoses, with a mean 7 years for making an accurate diagnosis. In addition, it has not been possible to determine the temporal sequence in the development of the two diseases, and so a cause-and-effect association must still be established.⁹ This was the case in our patient, in whom the diagnosis of endometriosis could not be made until the results of the biopsies of the surgical specimen were reported.

Lastly, patients with IBD and endometriosis have a higher probability of presenting with a fibro-stricturing phenotype of the disease.^{7,9} This more serious progression can be explained by chronic inflammation and the presence of atypical and cyclic symptoms, as occurred in our patient.

Although stricture in patients with IBD tends to be mainly attributed to disease progression or the development of cancer as a complication, it is important to consider other possible etiologies, such as the presence of endometriosis at the stricture site.

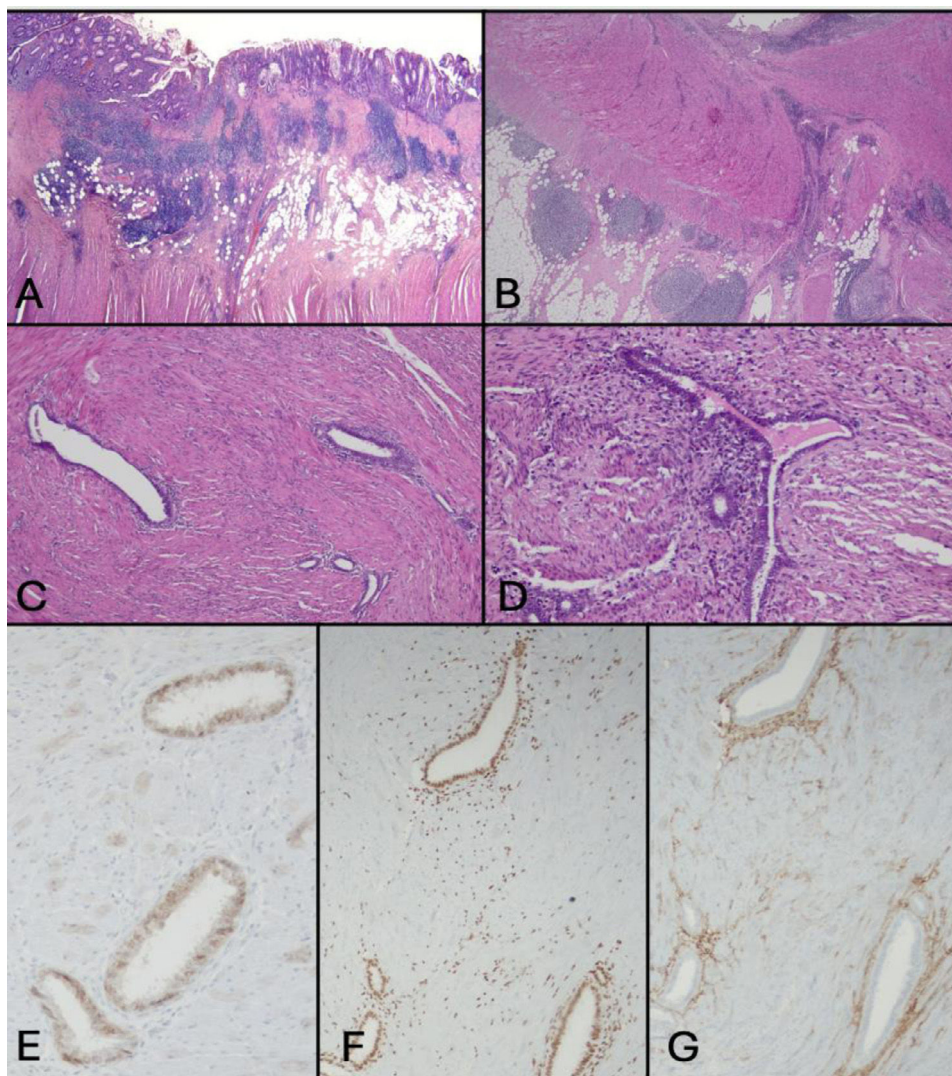


Figure 2 Pathologic anatomy of the clinical case. A and B) Transmural lymphocytic inflammatory infiltrate in the intestinal mucosa (H&E $\times 100$). C and D) Strictured zone, showing endometrial glands and stroma (H&E $\times 200$). E and F) Immunohistochemical staining for PAX 8 and estrogen receptors. G) Staining for CD20.

Ethical considerations

Informed consent was previously requested from the patient for her participation in the clinical case and publication of images without her personal data.

This work meets the current bioethical research regulations and was authorized by the ethics committee of the *Clinica Universidad de los Andes*.

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Conflict of interest

The authors declare that there is no conflict of interest.

References

1. Dolinger M, Torres J, Vermeire S. Crohn's disease. *Lancet*. 2024;403:1177–91, [http://dx.doi.org/10.1016/S0140-6736\(23\)02586-2](http://dx.doi.org/10.1016/S0140-6736(23)02586-2).
2. Yoo JH, Holubar S, Rieder F. Fibrostenotic strictures in Crohn's disease. *Intest Res*. 2020;18:379–401, <http://dx.doi.org/10.5217/ir.2019.09148>.
3. Cosnes J, Cattan S, Blain A, et al. Long-term evolution of disease behavior of Crohn's disease. *Inflamm Bowel Dis*. 2002;8:244–50, <http://dx.doi.org/10.1097/00054725-200207000-00002>.
4. Kristo I, Riss S, Argeny S, et al. Incidental adenocarcinoma in patients undergoing surgery for stricturing Crohn's disease. *World J Gastroenterol*. 2017;23:472–7, <http://dx.doi.org/10.3748/wjg.v23.i3.472>.
5. Kvaskoff M, Mu F, Terry KL, et al. Endometriosis: a high-risk population for major chronic diseases? *Hum Reprod Update*. 2015;21:500–16, <http://dx.doi.org/10.1093/humupd/dmv013>.
6. Jiang W, Roma AA, Lai K, et al. Endometriosis involving the mucosa of the intestinal tract: a clinicopathologic study

- of 15 cases. *Mod Pathol.* 2013;26:1270–8, <http://dx.doi.org/10.1038/modpathol.2013.51>.
7. Jess T, Frisch M, Jørgensen KT, et al. Increased risk of inflammatory bowel disease in women with endometriosis: a nationwide Danish cohort study. *Gut.* 2012;61:1279–83, <http://dx.doi.org/10.1136/gutjnl-2011-301095>.
 8. Greenbaum H, Weil C, Chodick G, et al. Evidence for an association between endometriosis, fibromyalgia, and autoimmune diseases. *Am J Reprod Immunol.* 2019;81:e13095, <http://dx.doi.org/10.1111/aji.13095>.
 9. Chiaffarino F, Cipriani S, Ricci E, et al. Endometriosis and inflammatory bowel disease: A systematic review of the literature. *Eur J Obstet Gynecol Reprod Biol.* 2020;252:246–51, <http://dx.doi.org/10.1016/j.ejogrb.2020.06.051>.

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