

Title:

Cat scratch colon and cecal barotrauma perforation during colonoscopy with CO2 insufflation

Authors:

Sónia Barros, Luís Miguel Relvas, Isabel Malta Carvalho, Ana Margarida Vaz, Rita Ornelas, Bruno Peixe

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Dear Editor,

We would like to thank the reviewers for their constructive comments and valuable suggestions to improve our manuscript entitled "CAT SCRATCH COLON AND CECAL BAROTRAUMA PERFORATION DURING COLONOSCOPY WITH CO2 INSUFFLATION."

Reviewer Comment 1: The reviewer requested that, in addition to colonic insufflation, other causes of the observed lesion be cited and briefly discussed, as described in the study by Cárdenas Villa et al. (2022).

Response to Comment 1: We have added a section in the manuscript discussing other causes of cat scratch lesions, including chronic colitis due to spirochetosis, as highlighted in the suggested reference. This information has been incorporated into the second paragraph of the Discussion section (Page 3, Lines 73-76).

All changes have been highlighted in the revised manuscript using the track changes tool.

Thank you for considering our revised manuscript. We look forward to your feedback.

Sincerely,

Sónia Barros

Dear Editor,

A 64-year-old female with a history of hypertension and dyslipidemia was referred for a routine screening colonoscopy. The procedure was conducted following bowel preparation with polyethylene glycol, under sedation with propofol, and using CO₂ insufflation, in accordance with protocols at our institution. During the colonoscopy, multiple diverticula were noted in the sigmoid and descending colon. Upon examination of the cecum, several parallel linear lesions with spontaneous bleeding were identified. In some regions, these lesions extended into the muscularis propria, consistent with findings of "cat scratch" colon (Fig. 1A). Hemostasis was achieved through the application of endoscopic clips (Fig. 1 B). No additional abnormalities were observed in the colonic mucosa or lumen.

Post-procedure, the patient underwent an abdominal CT scan, which revealed significant pneumoperitoneum involving the entire anterior peritoneal cavity and clips in the cecum (Fig. 1C, D). The patient was managed conservatively with bowel rest and intravenous antibiotics. During hospitalization, she demonstrated a favorable course, characterized by resolution of abdominal pain, tolerance to intake, and normal intestinal function. Initially, inflammatory markers were elevated, with a peak C-reactive protein level of 129 mg/dL, but these levels showed a progressive decline. The patient was discharged in stable condition on the fifth day of hospitalization.

Cecal barotrauma leading to perforation is a recognized complication of colonoscopy, particularly when room air is used for insufflation. CO₂ insufflation has largely replaced room air due to its rapid absorption, which reduces the risk of barotrauma-related complications.⁽¹⁾ Additionally, CO₂ insufflation has been shown to reduce post-procedural pain and flatulence, enhancing patient comfort and recovery.⁽²⁾ However, despite these advantages, cecal perforation secondary to barotrauma can still occur, even with CO₂ insufflation, as demonstrated in this case. The cecum, being the largest diameter section of the colon, is particularly vulnerable to perforation from barotrauma due to its anatomical characteristics.⁽³⁾ Although such cases are rare with CO₂ insufflation, awareness of this potential complication remains crucial. Clinicians should maintain a high index of suspicion for barotrauma-induced perforation in

patients presenting with abdominal pain post-colonoscopy, as prompt recognition and appropriate management are key to optimizing patient outcomes.(3, 4)

In addition to insufflation, cat scratch lesions may also result from conditions like chronic colitis due to spirochetosis. (5) Other associations include collagenous colitis, IBD, intestinal ischemia, shunt colitis, and NSAID use.(5) Recognizing these associations aids in a comprehensive evaluation of endoscopic findings.

REFERENCES

1. Miranda LE, Stillner M, Miranda AC, Lima DL. Recognizing Barotrauma during Colonoscopy: A Cat Scratch Colon. *GE Port J Gastroenterol.* 2022;29(6):434-5. Epub 2021/08/25. doi: 10.1159/000518460. PubMed PMID: 36545191; PubMed Central PMCID: PMCPMC9761352.
2. Wu J, Hu B. The role of carbon dioxide insufflation in colonoscopy: a systematic review and meta-analysis. *Endoscopy.* 2012;44(2):128-36. Epub 2012/01/25. doi: 10.1055/s-0031-1291487. PubMed PMID: 22271023.
3. Murphy CJ, Cox K, Fang JC. "Cat Scratch Colon" and Cecal Barotrauma perforation during colonoscopy using CO2 insufflation. *SAGE Open Med Case Rep.* 2014;2:2050313x14550359. Epub 2014/01/01. doi: 10.1177/2050313x14550359. PubMed PMID: 27489654; PubMed Central PMCID: PMCPMC4857357.
4. Waddingham W, Kamran U, Kumar B, Trudgill NJ, Tsiamoulos ZP, Banks M. Complications of colonoscopy: common and rare—recognition, assessment and management: *BMJ Open Gastroenterol.* 2023 Dec 8;10(1):e001193. doi: 10.1136/bmjgast-2023-001193. eCollection 2023.
5. Cárdenas Villa RD, Lozzi RD, Román HO, Arco M, Moreno FR, Pastorino M. Cat scratch lesions as a manifestation of chronic colitis due to spirochetosis. *Rev Esp Enferm Dig.* 2022;114(11):693-4. Epub 2022/09/01. doi: 10.17235/reed.2022.9078/2022. PubMed PMID: 36043535.