

CLINICAL VIGNETTE

Stercoral Colitis: A Rare and Potentially Fatal Complication of Severe Constipation

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Background

Stercoral colitis is a rare and life-threatening inflammatory condition associated with severe constipation and fecal impaction, which results in pressure necrosis of the colonic wall and subsequent ischemia. The mortality of the condition has been previously reported up to 60%, as it may lead to stercoral perforation and septic shock.¹ Though the majority of patients with stercoral colitis do not progress to perforation, stercoral perforations make up 3.2% of all spontaneous colonic perforations and result in 1.2% of emergent colorectal surgeries.²⁻⁴ Stercoral colitis is more prevalent in older individuals, with a mean age of onset over 60, often in those with a history of chronic constipation, weakness, immobility, or on multiple medications for comorbid conditions.^{5,6}

Given its high mortality, stercoral colitis must be promptly diagnosed and treated. We present a case of stercoral colitis in an elderly male patient with hypothyroidism to raise awareness on diagnosis and management of the condition in the emergency department (ED) and to highlight the importance of including stercoral colitis on a differential in an elderly patient with severe constipation.

Case

An 85-year-old male with a history of multiple medical problems presented to the ED with the chief concern of constipation for 10 days. He reported passing small, pellet-like stools with decreasing frequency despite trying various over-the-counter remedies and increasing dietary fiber intake. He continued to pass gas. On the day of presentation, he began experiencing bloating associated with lower abdominal pain, along with a difficulty urinating, prompting him to seek medical evaluation. The patient denied fever, chills, nausea, vomiting, or blood in the stool. He had no prior issues with constipation and did not take any narcotics, nonsteroidal anti-inflammatory drugs (NSAIDs), or medications that cause constipation. Patient history includes hypertension benign prostatic hyperplasia (BPH), hypothyroidism, osteoporosis, chronic obstructive pulmonary disease, and left inguinal hernia. Additionally, there were no recent changes to his thyroid medication or dosing. He reported compliance with all of his chronic medications.

The patient's intake vitals were: T 98.2, HR 78, RR 18, BP 152/81, SpO2 100% on RA. On physical exam, he was alert and in no distress. His abdomen appeared mildly distended and

irregular, soft, nontender, and without rigidity, rebound, or guarding. Bowel sounds were hypoactive. His left inguinal hernia was soft, without skin changes, and easily reducible. Initial pertinent labs included: Na 133, K 4.6, Ca 9.6, Mg 2.1, Hgb 13.9, WBC 12.83, Lactate 1.0. His urinalysis was unremarkable. His CT abdomen/pelvis revealed a large volume colonic stool burden and distended rectum with nonspecific perirectal infiltration, suggestive of stercoral colitis. Manual disimpaction was attempted at bedside; additionally, the patient was given a mineral oil enema and lactulose orally. A foley catheter was placed due to urinary retention with a post-void residual of 270ml.

During the course of hospital admission, his constipation resolved with non-invasive interventions including polyethylene glycol powder, bisacodyl suppository, and tap water enema. The foley was removed with spontaneous voiding at his normal baseline given BPH. He remained afebrile and without peritoneal signs on abdominal exam, and was discharged in stable condition.

Discussion

Given the high morbidity of stercoral colitis, it is important to recognize risk factors to ensure timely diagnosis and management. Severe chronic constipation, which is reported in 60-81% of cases, is considered to be the main causative factor for development of stercoral colitis and is a common geriatric syndrome.⁶ Multiple large-scale studies have shown the prevalence of chronic constipation in individuals over 60 as 15-20%, individuals over 84 as 20.0-37.3%, and in individuals who require long term care as up to 80%.⁷ A study of 34 nursing homes, found 70% of residents had chronic constipation and 47% experienced fecal impaction.⁸ Additionally, numerous medications may contribute to constipation including opiates, tricyclics antidepressants, NSAIDs, steroids, aluminum-based antacids, antipsychotics, verapamil, and immunosuppressants.^{6,9,10} At-risk patients may also have a history of cognitive impairment, immobility, metabolic disorders, neurologic disorders, adenocarcinoma, diverticular disease, or poor dietary intake.^{1,11}

Stercoral colitis occurs due to the formation of a hard fecaloma, as a result of severe constipation or fecal impaction, which then exerts pressure on the intestinal wall and impairs transmural perfusion if the pressure exceeds 35cm H₂O.¹² After several

hours, tissue ischemia leads to an inflammatory colitis that is associated with formation of a necrotic stercoral ulcer. If left untreated, the stercoral ulcer may progress to perforation and sepsis.¹² The most susceptible locations for stercoral colitis are the anterior rectum proximal to the peritoneal reflection, the antimesenteric border of the rectosigmoid junction, and the apex of the sigmoid colon (due to the decreasing water content of stool in the distal intestinal tract, relatively narrow diameter, and poor tissue perfusion).^{11,12} The blood supply to these regions relies on an anastomosis between branches of the inferior mesenteric and superior rectal arteries at a site referred to as Sudeck's point, which is often inadequate or absent.¹²

The clinical presentation of stercoral colitis may vary greatly, thereby posing a diagnostic challenge. The patients may be asymptomatic or have only mild abdominal pain at the initial stages. One-fifth of patients with stercoral perforation present with local peritonitis or vague abdominal pain.³ Stercoral colitis may also mimic other abdominal processes including appendicitis, gastrointestinal bleeding, and diverticulitis.^{13–15} Therefore, it is crucial to include stercoral colitis in the critical differential diagnosis of patients presenting to the ED with abdominal pain if the following are true:

- Patient is of geriatric age
- History of or risk factors for chronic constipation
- Resides in nursing home
- History of neurologic or mobility impairment
- History of chronic opioid use

Due to the variation in clinical presentation, clinicians should have a low threshold to obtain diagnostic imaging in these patients to confirm stercoral colitis and to rule out perforation. Abdominal computerized tomography (CT) is the most sensitive modality for identifying perforations, intraperitoneal air, and extraluminal fecal contents with an accuracy of 82–90%.¹⁶ Typically, CT reveals: 1) focal thickening of the colonic wall, suggesting edema due to ischemia and ulceration; 2) pericolonic fat stranding; 3) extraluminal gas or abscess if perforation has occurred.¹¹ Additionally, CT findings have significant prognostic value with findings of dense mucosa, perfusion defect, ascites, or abnormal gas more often associated with higher mortality.¹⁷ Abdominal and chest x-ray (XR) are of low utility and demonstrate free air under the diaphragm in only 30% of colonic perforations.^{16,18} Therefore, XR have low diagnostic utility in the ED and should be avoided. Lab abnormalities may include leukocytosis, lactic acidosis, and elevated inflammatory markers, however, do not identify underlying pathology.^{1,18–21}

After a diagnosis is made, it is crucial to promptly and effectively treat to avoid risk of progression. Noninvasive measures are limited in efficacy, though may be considered in patients without hemodynamic instability, sepsis, or signs of perforation requiring immediate surgical intervention. Non-surgical approaches include oral laxatives, enemas, anorectal irrigation, manual and endoscopic guided disimpaction.⁸ Of note, manual disimpaction may only partially relieve blockage

due to short reach and should not be attempted if CT suggests a defect in the colonic wall as it may expedite spillage of fecal contents into the abdominal cavity.²² If one is unable to relieve the blockage manually and the patient has no signs of peritonitis or impending perforation, the endoscopic guided disimpaction should be attempted. Rarely, stercoral colitis is complicated by urinary retention, as in our case, and results from the compressive effect of the fecaloma on the bladder.

Among surgical approaches, resection of affected bowel and exteriorization of the colon is preferred and has been reported to improve mortality to 32%.¹⁶ Intraoperative colonoscopy has also been used to ensure adequate resection and to assess for presence of other stercoral ulcers, which are occasionally present.^{11,17,21} In the immediate post-operative period, mortality is higher in patients with low systolic blood pressure and feculent ascites; additionally, post-operative complications are more frequent among female patients and patients with decreased eGFR or elevated CRP.²³

We presented a case of stercoral colitis in an elderly male patient with hypothyroidism. Stercoral colitis is a rare, but life-threatening complication of severe constipation which can progress to stercoral perforation and septic shock. It is therefore critical for ED providers to maintain a high index of suspicion in patients with risk factors for stercoral colitis to ensure timely diagnosis and management. Chronic constipation is the main causative factor in the development of stercoral colitis and is more prevalent in geriatric populations, particularly those in long-term care. The clinical presentation of stercoral colitis may vary and diagnosis is often made based on CT findings of focal wall thickening, pericolonic fat stranding, and extraluminal gas or abscess. Abdominal and chest XR are of low sensitivity in identifying peritoneal air in the event of stercoral perforation; therefore, they should be avoided in the ED setting. Non-invasive treatments are limited in efficacy in the ED, with manual or endoscopic disimpaction are the standard of care treatments for stercoral colitis. Surgical intervention is reserved for patients with hemodynamic compromise or perforation.

REFERENCES

1. **Naseer M, Gandhi J, Chams N, Kulairi Z.** Stercoral colitis complicated with ischemic colitis: a double-edge sword. *BMC Gastroenterol.* 2017 Nov 28;17(1):129. doi: 10.1186/s12876-017-0686-6. PMID: 29179680; PMCID: PMC5704496.
2. **Coulier B, Tilquin O, Ramboux A.** Massive Fecal Peritonitis Caused by Stercoral Sigmoid Colonic Perforation in the Elderly. *J Belg Soc Radiol.* 2015 Sep 15;99(1):117-118. doi: 10.5334/jbr-btr.832. PMID: 30039090; PMCID: PMC6032607.
3. **Kang J, Chung M.** A stercoral perforation of the descending colon. *J Korean Surg Soc.* 2012 Feb;82(2):125-7. doi: 10.4174/jkss.2012.82.2.125. Epub 2012 Jan 27. PMID: 22347716; PMCID: PMC3278635.
4. **Maurer CA, Renzulli P, Mazzucchelli L, Egger B, Seiler CA, Büchler MW.** Use of accurate diagnostic criteria may

- increase incidence of stercoral perforation of the colon. *Dis Colon Rectum*. 2000 Jul;43(7):991-8. doi: 10.1007/BF02237366. PMID: 10910249.
5. **Zachariah SK, Raja N.** Spontaneous Perforation of the Colon and Hypothyroidism: Report of a Case and Review of Literature. *Gastroenterology Res*. 2010 Jun;3(3):147-149. doi: 10.4021/gr2010.06.212w. Epub 2010 May 20. PMID: 27942294; PMCID: PMC5139770.
 6. **Aguilera JF, Lugo RE, Luna AW.** Perforación estercórea de colon: caso clínico y revisión del tema [Stercoral perforation of the colon: case report and literature review]. *Medwave*. 2015;15(2):e6108. Spanish. doi: 10.5867/medwave.2015.02.6108. PMID: 26000348.
 7. **Zheng S, Yao J; Chinese Geriatric Society, Editorial Board of Chinese Journal of Geriatrics.** Expert consensus on the assessment and treatment of chronic constipation in the elderly. *Aging Med (Milton)*. 2018 Apr 16;1(1):8-17. doi: 10.1002/agm2.12013. PMID: 31942474; PMCID: PMC6880707.
 8. **Parvulescu F, Chan TY, Gur U, McWilliams RG.** Giant faecaloma-a rare cause of life-threatening lower gastrointestinal haemorrhage. *BJR Case Rep*. 2015 Oct 12;2(1):20150227. doi: 10.1259/bjrcr.20150227. PMID: 30364474; PMCID: PMC6195918.
 9. **Sharma M, Agrawal A.** Case report: Stercoral sigmoid colonic perforation with fecal peritonitis. *Indian J Radiol Imaging*. 2010 May;20(2):126-8. doi: 10.4103/0971-3026.63051. PMID: 20607025; PMCID: PMC2890920.
 10. **Sakharpe A, Lee YK, Park G, Dy V.** Stercoral perforation requiring subtotal colectomy in a patient on methadone maintenance therapy. *Case Rep Surg*. 2012;2012:176143. doi: 10.1155/2012/176143. Epub 2012 Jun 17. PMID: 22779021; PMCID: PMC3385600.
 11. **Heffernan C, Pachter HL, Megibow AJ, Macari M.** Stercoral colitis leading to fatal peritonitis: CT findings. *AJR Am J Roentgenol*. 2005 Apr;184(4):1189-93. doi: 10.2214/ajr.184.4.01841189. PMID: 15788592.
 12. **Marget M, Ammar H.** Not your usual constipation: stercoral perforation. *BMJ Case Rep*. 2017 Feb 13;2017:bcr2016218283. doi: 10.1136/bcr-2016-218283. PMID: 28193645; PMCID: PMC5318602.
 13. **Elkoundi A, Bensghir M, Haimeur C.** Stercoral colitis mimicking appendicitis. *Int J Emerg Med*. 2017 Dec;10(1):7. doi: 10.1186/s12245-017-0134-y. Epub 2017 Feb 20. PMID: 28220347; PMCID: PMC5318312.
 14. **Bi JT, Guo YT, Zhao JM, Zhang ZT.** Stercoral colonic diverticulum perforation with jejunal diverticulitis mimicking upper gastrointestinal perforation. *Chin Med J (Engl)*. 2012 Feb;125(3):536-8. PMID: 22490417.
 15. **Bhatt VR, Murukutla S, Dipoce J, Gustafson S, Sarkany D, Mody K, Widmann WD, Gottesman A.** Perforation in a patient with stercoral colitis and diverticulosis: who did it? *J Community Hosp Intern Med Perspect*. 2014 Feb 17;4(1). doi: 10.3402/jchimp.v4.22898. PMID: 24596650; PMCID: PMC3937564.
 16. **Kanwal D, Attia KME, Fam MNA, Khalil SMF, Alblooshi AM.** Stercoral perforation of the rectum with faecal peritonitis and pneumatosis coli: A case Report. *J Radiol Case Rep*. 2017 Mar 31;11(3):1-6. doi: 10.3941/jrcr.v11i3.3060. PMID: 28584566; PMCID: PMC5441462.
 17. **Wu CH, Huang CC, Wang LJ, Wong YC, Wang CJ, Lo WC, Lin BC, Wan YL, Hsueh C.** Value of CT in the discrimination of fatal from non-fatal stercoral colitis. *Korean J Radiol*. 2012 May-Jun;13(3):283-9. doi: 10.3348/kjr.2012.13.3.283. Epub 2012 Apr 17. PMID: 22563265; PMCID: PMC3337864.
 18. **Vijayakumar C, Balagurunathan K, Prabhu R, Santosh Raja E, Amankumar S, Kalaiarasi R, T S.** Stercoral Ulcer Not Always Indolent: A Rare Complication of Fecal Impaction. *Cureus*. 2018 May 13;10(5):e2613. doi: 10.7759/cureus.2613. PMID: 30027005; PMCID: PMC6044477.
 19. **Proulx E, Glass C.** Constipation-Associated Stercoral Colitis. *Pediatr Emerg Care*. 2018 Sep;34(9):e159-e160. doi: 10.1097/PEC.0000000000001600. PMID: 30180104.
 20. **Hudson J, Malik A.** A fatal faecaloma stercoral colitis: a rare complication of chronic constipation. *BMJ Case Rep*. 2015 Sep 3;2015:bcr2015211732. doi: 10.1136/bcr-2015-211732. PMID: 26338246; PMCID: PMC4567767.
 21. **Huang WS, Wang CS, Hsieh CC, Lin PY, Chin CC, Wang JY.** Management of patients with stercoral perforation of the sigmoid colon: report of five cases. *World J Gastroenterol*. 2006 Jan 21;12(3):500-3. doi: 10.3748/wjg.v12.i3.500. PMID: 16489660; PMCID: PMC4066079.
 22. **Beharrysingh R, McDaniel JL, Abdel Hak A, Voore N, Abandeh FI.** A Break in the Wall: Stercoral Colitis. *Am J Med*. 2016 May;129(5):479-80. doi: 10.1016/j.amjmed.2016.01.005. Epub 2016 Jan 29. PMID: 26829437.
 23. **Shin R, Lee SM, Sohn B, Lee DW, Song I, Chai YJ, Lee HW, Ahn HS, Jung IM, Chung JK, Heo SC.** Predictors of Morbidity and Mortality After Surgery for Intestinal Perforation. *Ann Coloproctol*. 2016 Dec;32(6):221-227. doi: 10.3393/ac.2016.32.6.221. Epub 2016 Dec 31. PMID: 28119865; PMCID: PMC5256250.