

Sevelamer: An Underreported Cause of Enteritis and Colitis

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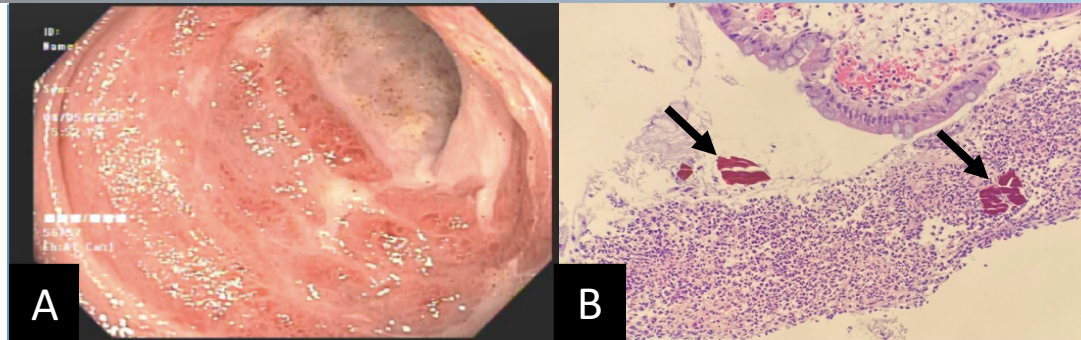
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Learning Objectives

- Hematochezia due to mucosal injury is commonly caused by infections, inflammation, and ischemic colitis.
- Kayexalate and other resin-based binders most commonly cause crystal-induced mucosal injury.
- Sevelamer has been proven to be a rare cause of crystal-induced mucosal injury and typically resolves upon cessation of the medication.

Case Presentation

- 65-year-old male veteran with ESRD, secondary hyperparathyroidism on sevelamer, and ongoing cocaine abuse was admitted for abdominal pain and bloody diarrhea for 3 days after a recent cocaine use. Ischemic colitis was suspected.
- CT scan of the abdomen and pelvis revealed inflammation of the ileum and rectosigmoid.
- Stool studies were negative.
- He was treated with ciprofloxacin and metronidazole.



A. Terminal ileum ulcerations.
B. Fibrinopurulent exudate (ischemic/acute erosive pattern colitis) and the presence of sevelamer crystals (arrows), H&E magnification 200X.

Hospital Course and Follow Up

- Colonoscopy findings:
 - An ulcerated and erythematous terminal ileum (TI) 7cm to 15cm proximal to the ileocecal valve.
 - Mild ulceration and erythema in the ascending colon.
 - Moderate to severe ulceration between 30cm to 40cm from the anal verge
 - Colonic mucosa appeared normal between the ulcerations
- Biopsies revealed chronic ileitis and colitis with ulceration, granulation tissue associated crystals, crypt abscesses, and fibrinopurulent debris.
- Medication review confirmed no exposure to kayexalate. He was advised to stop taking sevelamer.
- Follow up colonoscopy 6 months later revealed complete mucosal healing.

Discussion

- GI mucosal injury is a rare and underrecognized adverse effect of sevelamer.
- Symptoms range from nausea, vomiting, constipation, dysentery, and acute abdomen requiring surgery.
- Enteritis and colitis caused by sevelamer can be overlooked and presumed to be infectious or ischemic etiology.
- Identification of crystals on histology is diagnostic but may be missed due to sampling error.

Conclusion

- Crystal-induced mucosal injury should be on the differential for patients taking sevelamer and presenting with hematochezia.
- Increased awareness of this underreported complication of sevelamer is important for directing appropriate therapy with cessation in the setting of enteritis or colitis.

References

- Tieu C, Moreira RK, Song LM, Majumder S, Papadakis KA, Hogan MC. A case report of sevelamer-associated recto-sigmoid ulcers. *BMC Gastroenterol.* 2016 Feb 24;16:20. doi: 10.1186/s12876-016-0441-4. PMID: 26911806; PMCID: PMC4765035.
- Yuste C, Mérida E, Hernández E, García-Santiago A, Rodríguez Y, Muñoz T, Gómez GJ, Sevilano Á, Praga M. Gastrointestinal complications induced by sevelamer crystals. *Clin Kidney J.* 2017 Aug;10(4):539-544. doi: 10.1093/ckj/sfx013. Epub 2017 Apr 10. PMID: 28852493; PMCID: PMC5570024.