

Introduction

- Sevelamer is a phosphate-binding agent that reduces phosphate absorption within the gastrointestinal (GI) tract.
- The most commonly reported adverse effects include vomiting, nausea, diarrhea, dyspepsia, abdominal pain, and constipation.
- As of 2024, 36 cases of sevelamer-induced GI bleeding have been reported globally. To the best of our knowledge, we present the first case of sevelamer-induced GI bleeding in a patient following cardiac arrest.

Case Description

- We present the case of a 78-year-old male with a history of end-stage renal disease on peritoneal dialysis, hypertension, and heart failure, who was admitted for generalized weakness and fatigue. He had been taking sevelamer 800 mg for 6 months before his admission and continued it during hospitalization.
- On hospital day 6, the patient experienced a pulseless electrical activity cardiac arrest and achieved ROSC after 3.5 minutes of CPR and one dose of epinephrine. Two weeks post-cardiac arrest, the patient presented with two episodes of bloody stools and a hemoglobin drop from 9.2 to 8.2 g/dL.
- Colonoscopy revealed ulcerated and pseudomembrane-covered mucosa in the sigmoid colon and rectum. Biopsy demonstrated ulcerated colonic mucosa containing yellow-orange, scale-like crystalline material consistent with sevelamer resin deposition.
- In this case, cessation of sevelamer led to resolution of GI bleeding, with plans to initiate an alternative phosphate binder if needed.

Discussion

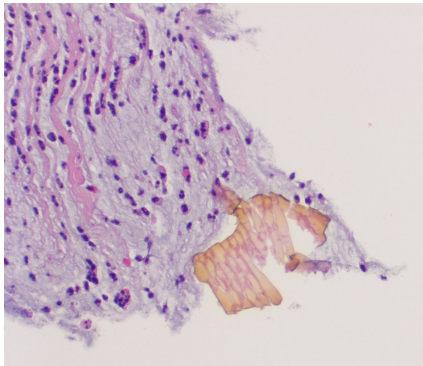
- The most common clinical manifestations of sevelamer-induced GI bleeding include hematochezia, followed by abdominal pain and diarrhea. Although the exact pathogenesis remains unclear, mucosal cytotoxicity from sevelamer crystal deposition is thought to play a key role.
- Reported risk factors include obesity, diabetes mellitus, hypertension, and liver or heart failure. We hypothesize that preceding cardiac arrest led to GI ischemic injury, predisposing the patient to mucosal damage and GI bleeding.
- CT imaging findings are typically non-specific. On histopathology, hematoxylin and eosin (H&E) staining reveals sevelamer crystals with a characteristic “fish-scale” appearance, centrally pink with yellow to orange peripheral staining.
- Discontinuation of sevelamer usually results in clinical improvement, ranging from immediate to several weeks. Surgical intervention may be required in patients with hemodynamic instability or extensive bowel necrosis.

Conclusion

- We report the first case of post-cardiac arrest sevelamer-induced GI bleeding. Preceding cardiac arrest may predispose patients to GI ischemic injury and subsequent bleeding associated with sevelamer use.
- Clinicians should consider sevelamer-induced GI bleeding in the differential diagnosis for patients on sevelamer who present with gastrointestinal bleeding.



Colonoscopy showing diffuse severe ulceration with pseudomembranous-covered mucosa in the sigmoid colon



High-power H&E stain showing yellow-orange, scale-like foreign crystalline material overlying ulcerated colonic mucosa