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Obscure Overt Gastrointestinal Bleeding Secondary to Ventral Hernioplasty Mesh Small Bowel Perforation Visualized With Video Capsule Endoscopy

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ABSTRACT

We report a case of a 79-year-old female presenting with hematemesis and melena 9 years after ventral hernioplasty with mesh. After initial normal endoscopy and colonoscopy, video capsule endoscopy revealed a metallic wire mesh perforating the jejunum. Abdominal computed tomography did not identify a perforation although metallic mesh was visualized close to the small bowel. We present the first ventral hernia mesh perforation diagnosed via video capsule endoscopy. Such a finding emphasizes the importance of a complete diagnostic workup when approaching a patient with obscure overt gastrointestinal bleeding.

INTRODUCTION

Surgical hernioplasty is one of the most commonly performed surgeries in the United States.¹ For decades, different types of mesh devices have been used in the repair of ventral and inguinal hernias. Although major complications from these procedures are rare, various cases of bowel perforations, obstructions, erosions, fistulas, and volvulus have been documented in the literature.²⁻⁵ Such complications have been reported secondary to inguinal hernioplasty mesh migration. Patients classically present with bowel obstruction signs and symptoms, and diagnosis has been commonly achieved via endoscopy, colonoscopy, or abdominal computed tomography. To date, there are no published cases in the United States of obscure overt gastrointestinal (GI) bleeding secondary to ventral hernioplasty mesh migration.

CASE REPORT

A 79-year-old female with a past surgical history of ventral hernia repair with mesh 9 years prior presented to an outside hospital with complaints of coffee-grounds emesis associated with melena and diarrhea. At the time she was found to be anemic and required blood transfusions. Initial endoscopy and colonoscopy were both negative, and no further imaging studies were performed. She was managed conservatively and discharged in stable condition, but she was lost to follow-up.

Thereafter, she experienced a recurrent episode of coffee-grounds emesis and melena and arrived at our facility for a second opinion, where she was found to be anemic with a hemoglobin of 6.4 g/dL. On physical exam, a large reducible ventral hernia with mild tenderness to palpation was noted without rebound or guarding. The patient was stabilized after transfusion of 3 units of packed red blood cells and subsequently underwent an upper endoscopy, where no source of bleeding was identified. It was then decided to perform an inpatient video capsule endoscopy (VCE), where a metallic coiled wire perforating the jejunum was visualized (Figure 1 and Video 1).

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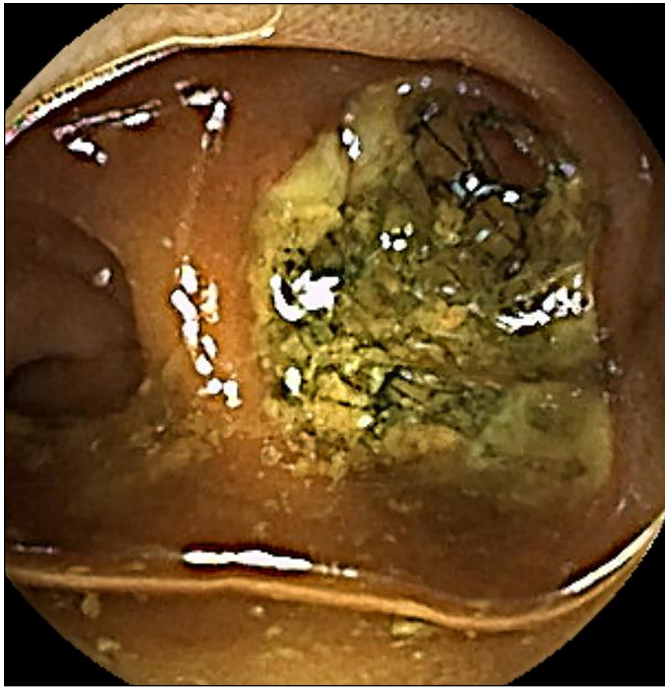


Figure 1. Video capsule endoscopy showing intraluminal coiled wire eroding through wall of jejunum into lumen.

Video 1. Video capsule endoscopy showing intraluminal coiled wire eroding through wall of jejunum into lumen. Watch the video: http://s3.gi.org/media/links/Mendez_v1.mp4.

Abdominal CT with intravenous contrast revealed the metallic abdominal mesh in close proximity to the small bowel but was not able to distinguish the presence of a perforation (Figure 2). Surgical consult recommended exploratory laparotomy with removal of mesh and possible small bowel resection. Due to the patient's extensive comorbidities of obesity, dyslipidemia, hypertension, diabetes, congestive heart failure, and obstructive sleep apnea, the patient refused surgical intervention. She was discharged in stable condition with close outpatient follow-up at the local hernia institute.

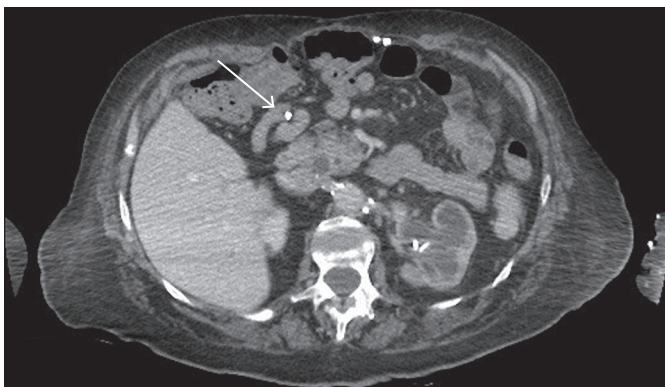


Figure 2. Abdominal CT showing round metallic structure within lumen of small bowel (arrow).

DISCUSSION

Various complications of inguinal hernia repair with mesh resulting in bowel perforations secondary to mesh migration have been documented in the literature in countries abroad. Very few cases have been published concerning ventral hernioplasty complications other than bowel obstruction or peritonitis secondary to mesh migration.² What we described is the first ventral hernia mesh migration into the jejunum visualized with VCE in a patient presenting with obscure overt hematemesis and melena. Although abdominal CT demonstrated mesh in close proximity to small bowel, it was not conclusive in isolating the exact location of the bleed or extent of injury.

As per endoscopy guidelines published by the American Society for Gastrointestinal Endoscopy, VCE is a first-line diagnostic tool for further evaluation of small bowel in obscure GI bleed. VCE has a higher yield in detecting bleeding source and clinical significant lesions than push enteroscopy and CT angiography.^{6,7} Since the patient had episodes of obscure, overt GI bleeding, it was decided by our team that after failed upper endoscopy and colonoscopy for diagnostic purposes, the next best step was VCE. Enteroscopy was not pursued because it would not have given the patient any therapeutic benefits. The mesh is an enormous prosthetic hernia-correcting device that would not be possible to extract endoscopically without major complications like bowel perforation. VCE was essential in diagnosing the source of our patient's bleeding.

The hematemesis was never explained, and it could have been misreported by the emergency room as coffee-grounds emesis. No lesions were seen to explain such symptoms. Our literature search did not yield any associations between lesions distal to ligament of Treitz and upper GI bleed. Such rarity is probably due to the anatomy of the small bowel. Nonetheless, although extremely rare relative to distal jejunal lesions, hematemesis was an unusual feature reported by the patient.

Capsule retention is a very rare complication seen in about 1.4% of cases and is usually secondary to intestinal strictures, obstructive mass, or intestinal motility disorders, which are contraindications to VCE.^{6,7} However, if retention occurs, the majority of cases resolve spontaneously with no signs or symptoms of bowel obstruction.⁶

DISCLOSURES

Author contributions: Y. Mendez-Ishizaki wrote the manuscript. JL Parra supervised and edited the manuscript and is the article guarantor.

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Informed consent was obtained for this case report.

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