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Research Article

# Intestinal Ascariasis Presenting as Overt Obscure GI Bleed Diagnosed by Capsule Endoscopy

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## ABSTRACT

Intestinal ascariasis is common in endemic regions but rarely causes overt obscure gastrointestinal bleeding. We describe two adult males in whom melena ± haematochezia persisted despite nondiagnostic oesophagogastroduodenoscopy, colonoscopy, and contrast CT angiography, prompting capsule endoscopy (CE). Case 1: a 43-year-old requiring 3 units of packed red cells had CE visualizing multiple small-intestinal roundworms. Case 2: a 27-year-old with haemoglobin 6.1 g/dL requiring 5 units had CE demonstrating small-bowel parasitic infestation. Both patients received single-dose albendazole 400 mg. At 1-month follow-up, Case 1 was asymptomatic with haemoglobin 14 g/dL, and Case 2 had no rebleeding with haemoglobin 12.2 g/dL. These cases underscore CE as a decisive first-line small-bowel investigation when conventional studies are unrevealing. Early recognition of parasitic aetiologies enables targeted therapy and may avert unnecessary invasive procedures, particularly in endemic settings.

***Keywords****: Ascariasis; capsule endoscopy; obscure gastrointestinal bleeding; small bowel; albendazole.*

## INTRODUCTION

Ascaris lumbricoides is the most ubiquitous intestinal nematode infecting humans, with an estimated 807–1,221 million infected worldwide, particularly in regions where sanitation is inadequate and hygiene practices are suboptimal[1,2]. The highest prevalence occurs in school-aged children in tropical and subtropical countries, but infection can be seen at any age in endemic areas. Transmission occurs via ingestion of embryonated eggs in contaminated soil, food, or water.

The clinical spectrum of Ascaris infection is broad, ranging from asymptomatic carriage to complications such as intestinal obstruction, biliary colic, cholangitis, pancreatitis, and in rare situations, acute appendicitis[3,4]. Chronic infestations may contribute to malnutrition, growth retardation, and iron-deficiency anemia through low-grade, recurrent blood loss.

Overt gastrointestinal bleeding attributable to A. lumbricoides is exceptionally uncommon, with only isolated case reports in the literature[5,6]. Proposed mechanisms include mucosal injury from the worm's movement, mechanical pressure leading to ulceration, and local inflammatory damage rendering the mucosa friable. In some cases, bleeding may also result from the worm's entry into the upper gastrointestinal tract where it can traumatize vascular mucosal surfaces.

Diagnosis in such presentations can be challenging because routine upper gastrointestinal endoscopy or colonoscopy may not visualize the parasites if they are transiently located beyond reach, such as in the small intestine. In endemic settings,

the absence of a clear cause on endoscopic evaluation should prompt consideration of parasitic infections, particularly in patients without other obvious bleeding risk factors.

**Case Presentation**

**Case 1 : -** A 43-year-old man from North India presented to the emergency department with a four-day history of haematochezia and melena, not associated with vomiting, nausea, or hematemesis. No history of any chronic medication. The patient is a lifelong non-smoker and has never consumed alcohol. Prior to presentation at our hospital patient had visited a local hospital where he was transfused 3 units of packed red blood cell to maintain haemoglobin above 7gm/dl. At the time of examination, he was alert and not in distress. Pale conjunctiva was seen. Patient had tachycardia, with no signs of shock and normal capillary refill time. Orthostatic hypotension was not present. The abdominal examination was unremarkable, and a digital rectal examination revealed melaena with no fresh blood. Otherwise, his exam was normal. Patient was admitted to gastroenterology ward. Laboratory investigations revealed that his haemoglobin level was 9.4gm/dl gram/dL with normal platelet and white cell counts with a normal coagulation profile. Patient was started on an intravenous proton pump inhibitor infusion (PPI). Upper and lower gastrointestinal endoscopies were performed and found no signs of active or recent bleeding. Suspicion of small intestinal bleed was kept. Patient underwent CECT abdomen angiography and enterography which was unremarkable. Patient underwent capsule endoscopy which showed multiple elongated round worms in the small intestine suggestive of small intestinal ascariasis. Patient was treated with albendazole 400 mg stat. After one month of follow up patient was asymptomatic with no further episode of haematochezia, melena and his haemoglobin was maintained at 14 gm/dl.


**Figure 1. Intestinal parasite detected on capsule endoscopy**

**Case 2 : -** A 27-year-old male with no comorbidities and no history of NSAID use, alcohol, or substance abuse presented with complaints of melena for 5 days, associated with postural symptoms. On admission, he was hemodynamically stable but had significant pallor. Laboratory evaluation revealed severe anemia (hemoglobin 6.1 g/dL), requiring multiple transfusions (total 5 units of packed red blood cells). Other routine blood investigations including liver and renal function tests were within normal limits, except for serology which was reactive for HCV.

Initial upper gastrointestinal endoscopy (UGIE) and contrast CT angiography performed outside the hospital were normal. Repeat UGIE and colonoscopy during admission were also unremarkable. Given the persistent fall in hemoglobin and ongoing melena, capsule endoscopy was performed, which revealed features suggestive of parasitic infestation in the small intestine. The patient was treated with Albendazole. Following therapy, no further episodes of melena or hemoglobin drop were observed. He was discharged in stable condition with advice for antihelminthic therapy and follow-up. After one month of follow up patient was asymptomatic with improvement in Hemoglobin to 12.2. No further episodes of GI bleed.

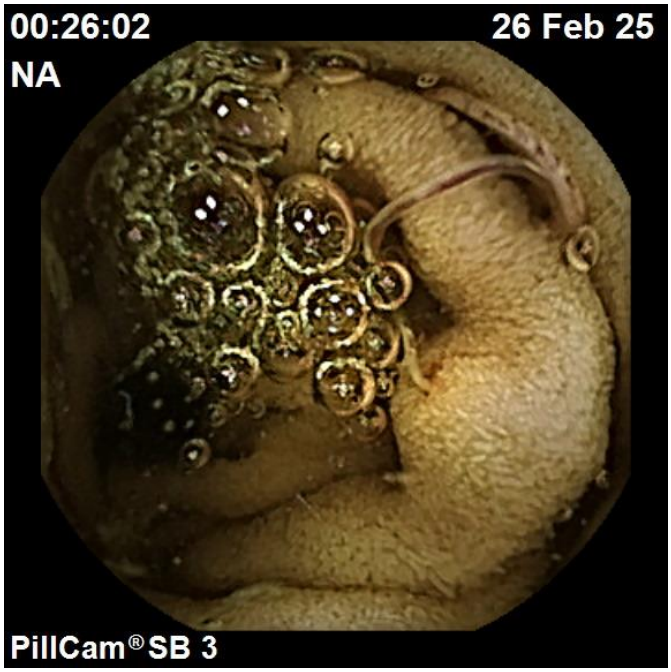


**Figure 2 Hookworms with blood in one of the worm**

## DISCUSSION

Our two adult patients—one 43-year-old man with overt, mixed-presentation bleeding (haematochezia plus melena) requiring 3 units PRBC, and one 27-year-old man with 5 days of melena and severe anemia (Hb 6.1 g/dL) requiring 5 units—had negative upper and lower endoscopies and nonrevealing CT angiography, yet capsule endoscopy (CE) visualized elongated roundworms in the small bowel in both. This pattern aligns with contemporary guidance that, after nondiagnostic EGD/colonoscopy in suspected small-bowel bleeding, CE should be the first-line small-bowel investigation (Gerson et al., 2015)[7] and, when overt, ideally performed early to maximize yield (Pennazio et al., 2023)[8].

Mechanistically, clinically significant hemorrhage from *Ascaris lumbricoides* is rare but documented. Mucosal trauma from worm motility and pressure can cause erosions/ulcers and friability that bleed, a pattern reflected in multiple reports. Dewi et al. (2012) described a 65-year-old woman with ongoing melena and jejunal bleeding who ultimately had intraoperative enteroscopy identifying a live *Ascaris* with mucosal erosions; transfusion needs were high (9 units), and albendazole was curative[9]. Wilairatana et al. (1994) reported melena with endoscopic visualization of gastric *Ascaris* in a 60-year-old, underscoring that trauma can occur in the upper GI tract as well[10]. Lukashok et al. (2011) used CE ("MiroCam") to capture multiple small-bowel erosions and active bleeding attributable to parasites, including *Ascaris*, in two patients with massive obscure bleeding[11]. More recently, Barakat et al. (2022) detailed massive small-bowel bleeding from *Ascaris* diagnosed on CE after repeated nondiagnostic endoscopies, again highlighting parasite-induced mucosal injury in the small intestine[12].

Our cases reinforce several diagnostic nuances seen across the literature. First, CE is often decisive when conventional tests are unrevealing. In a 16-patient series from West China Hospital, Wang et al. (2013) found *Ascaris* in the small bowel on CE in all patients; notably, 15/16 presented with GI bleeding and 15/16 were anemic, yet no eggs were detected on stool examination—emphasizing that negative ova-and-parasite studies do not exclude intestinal ascariasis[13]. Yamashita et al. (2013) likewise reported CE clinching the diagnosis when other modalities, including surgery, failed to identify *Ascaris* (ileal obstruction case)[14]. These observations dovetail with guideline recommendations favoring early CE in overt small-bowel bleeding to capture transient or proximally located lesions before they clear (Gerson et al., 2015; Pennazio et al., 2023)[7],[8]. In our first patient, CE directly visualized multiple worms in the small intestine after negative endoscopies/CECT, and in the second, CE again revealed parasitic infestation despite a complete negative work-up—mirroring the high incremental yield reported in series and case reports.

Therapeutically, both of our patients improved promptly after single-dose albendazole (400 mg): the 43-year-old remained asymptomatic at 1-month with Hb 14 g/dL, and the 27-year-old had no rebleeding with Hb rising to 12.2 g/dL. Comparable responses are described in published cases once the parasitic source is treated (Dewi et al., 2012; Barakat et al., 2022)[9,12]. Where bleeding is brisk or localization difficult, surgery and intraoperative enteroscopy have been required (Dewi et al., 2012), but most cases—including ours—resolve with antihelminthic therapy once identified[9].

Taken together, our findings and prior reports support a practical approach in endemic settings: in overt bleeding with negative EGD/colonoscopy, proceed early to CE to detect small-bowel parasitosis, recognize that stool testing may be falsely negative, and treat promptly with antihelminthics when *Ascaris* is visualized (Gerson et al., 2015; Pennazio et al., 2023; Wang et al., 2013; Yamashita et al., 2013)[7,8,13,14].

## CONCLUSION

Intestinal ascariasis, though common in endemic regions, is a rare but important cause of overt obscure gastrointestinal bleeding. Our two cases highlight the diagnostic value of capsule endoscopy when conventional investigations are unrevealing. Early recognition is essential, as timely antihelminthic therapy leads to complete resolution and prevents unnecessary invasive procedures. Clinicians should consider parasitic infestation in the differential diagnosis of unexplained GI bleeding, especially in endemic areas.

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