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(CASE REPORT)

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Chronic diarrhea as an atypical presentation of complete common mesentery in an adult: A case report

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Abstract

Complete common mesentery (CCM) is a rare congenital anomaly of intestinal rotation, typically discovered incidentally or during acute abdominal events. Chronic gastrointestinal symptoms, such as persistent diarrhea, have not been previously described as a presenting sign. We report the case of a 56-years-old female with chronic diarrhea and mild abdominal discomfort. Imaging revealed a complete common mesentery. The patient was managed conservatively with symptom improvement. CCM is usually asymptomatic or presents with acute complications such as volvulus or left-sided appendicitis. This case highlights the possibility of chronic functional gastrointestinal manifestations due to congenital anatomical anomalies. We discuss the embryological background, diagnostic imaging, clinical presentations, and therapeutic considerations. In cases of unexplained chronic diarrhea, clinicians should consider rare anatomical variants like CCM, particularly when standard diagnostic approaches are unrevealing.

Keywords: Common mesentery; Intestinal malrotation; Chronic diarrhea; Abdominal pain; Case report; Radiology; Cecal volvulus.

1. Introduction

Complete common mesentery (CCM) is a rare congenital disorder caused by failure of the midgut to undergo the normal 270° counterclockwise rotation around the superior mesenteric artery (SMA) during embryogenesis. This anomaly leads to an atypical positioning of the small intestine on the right side of the abdomen and the colon on the left, with a shortened mesenteric root and an absence of the normal duodenal loop crossing the midline [1–3].

CCM is most often asymptomatic and discovered incidentally during radiologic examinations or surgical procedures. However, it can also present with acute abdominal emergencies, most notably midgut or cecal volvulus, or atypical presentations of appendicitis [4–6]. Rarely, chronic gastrointestinal symptoms, including persistent diarrhea or recurrent abdominal pain, may be the only manifestations [7].

Here, we report an unusual case of CCM revealed by chronic diarrhea, and we review the relevant literature to provide a comprehensive overview of the condition's clinical spectrum, diagnosis, and management.

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2. Case Report

A 56-years-old female with no significant past medical history presented to the outpatient gastroenterology clinic with a six-month history of non-bloody, intermittent diarrhea occurring 3–5 times per day. He reported associated mild abdominal cramping, particularly in the left lower quadrant, without weight loss, fever, nausea, or vomiting.

Physical examination was unremarkable, with normal bowel sounds and no palpable mass or tenderness. Laboratory tests—including complete blood count, electrolytes, liver function, CRP, TSH, stool ova and parasites, and Clostridioides difficile toxin—were all within normal limits. A colonoscopy was performed and returned normal.

Given the persistence of symptoms and non-diagnostic investigations, an abdominal contrast-enhanced computed tomography (CT) was performed. It revealed:

- Small bowel loops clustered predominantly in the right hemi-abdomen
- Colon segments displaced to the left
- Superior mesenteric vein located to the left of the SMA
- Absence of the third duodenal portion crossing the midline

These findings were consistent with complete common mesentery (Figure 1).

Given the absence of volvulus or signs of bowel ischemia, conservative management with dietary modification and observation was initiated. Over a 6-month follow-up period, the patient reported significant improvement in bowel frequency without recurrence of abdominal pain.

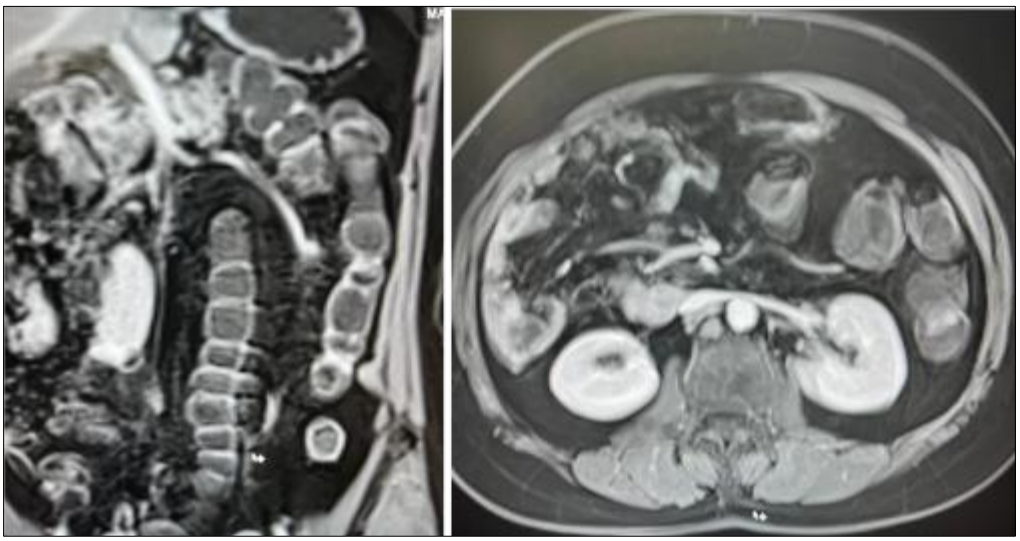

Figure 1 Injected abdominal MRI showing digestive malrotation: common mesentery

3. Discussion

3.1. Embryology and Classification

Intestinal rotation anomalies (IRA) arise from deviations in the normal embryologic rotation of the midgut. The process consists of three sequential 90° rotations around the SMA between the 5th and 11th gestational weeks. In **CCM**, this rotation halts at 90°, positioning the small intestine on the right and the colon on the left [8–10].

IRA can be classified as:

- Non-rotation (complete common mesentery): 90° rotation only
- Incomplete rotation: 180° rotation
- Reverse rotation or malfixation syndromes

The incidence of intestinal malrotation is estimated at 1 in 500 live births, but most cases are diagnosed in infancy [11]. In adults, its prevalence is lower (0.2–0.5%) and often underdiagnosed unless complications occur [12].

3.2. Clinical Presentations

While CCM is usually asymptomatic, it can present in two ways:

- Acute complications: midgut or cecal volvulus [4,5,13]
- Chronic symptoms: recurrent abdominal pain, nausea, vomiting, or diarrhea [7,14]

Appendicitis in CCM often presents with left lower quadrant pain, leading to diagnostic delays or errors [6,15].

To our knowledge, this is the first published case of CCM revealed by chronic diarrhea without structural obstruction or acute inflammation.

3.3. Imaging

CT scanning is the gold standard for diagnosis:

- Inverted SMA-SMV relationship (SMV on the left)
- Absence of the D3 segment of the duodenum crossing the midline
- Unusual bowel loop distribution (small bowel on the right, colon on the left)
- In some cases, the “whirlpool sign” suggests volvulus [16,17]

MRI may be helpful in pediatric or pregnant patients, and barium studies are mostly historical.

3.4. Management

Management depends on symptoms and findings:

- Asymptomatic cases: no intervention
- Acute volvulus or obstruction: surgical treatment, typically Ladd procedure [18]
- Chronic symptoms without complications: conservative approach is reasonable

In our case, the absence of volvulus and improvement of diarrhea supported a non-operative strategy

4. Conclusion

Complete common mesentery is a rare and often overlooked congenital anomaly of intestinal rotation. While most cases are asymptomatic or discovered during acute complications, chronic gastrointestinal symptoms such as persistent diarrhea may occasionally reveal the diagnosis. CT imaging is essential for diagnosis, and management should be tailored to the clinical presentation. Recognition of this entity may prevent unnecessary investigations or delayed diagnoses in patients with unexplained digestive symptoms.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed. All authors contributed to the conduct of this work. All authors also declare that they have read and approved the final version of the manuscript.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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