

Colonic Melanosis in A 70-Year-Old Patient with Chronic Constipation Using an Inulin-Based Laxative: A Case Report

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Abstract

Case Report

Background: Melanosis coli is a benign pigmentation of the colonic mucosa, most commonly associated with chronic laxative use. The condition is caused by accumulation of lipofuscin within macrophages in the lamina propria. Although often incidental, its recognition is important to avoid misinterpretation as more serious colonic pathology. **Case Presentation:** We report the case of a 70-year-old man with chronic constipation for several years, who developed colonic melanosis while using an inulin-based laxative daily. Colonoscopy revealed diffuse brown-black pigmentation predominantly in the right colon, confirmed histologically as melanosis coli. After discontinuation of the laxative and implementation of dietary and lifestyle changes, the patient's bowel function improved and pigmentation regressed over time. **Conclusion:** This case illustrates melanosis coli related to prolonged use of an inulin-based laxative. Awareness of this benign and reversible entity is crucial to prevent unnecessary alarm and to emphasize rational laxative use in elderly patients with chronic constipation.

Keywords: Melanosis coli; Inulin; Chronic constipation; Colonoscopy; Laxative abuse; Elderly patient.

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INTRODUCTION

Melanosis coli is a non-neoplastic, benign, and reversible pigmentation of the colonic mucosa that occurs secondary to epithelial cell apoptosis and subsequent accumulation of lipofuscin pigment in macrophages of the lamina propria [1,2]. The condition has a strong association with long-term use of stimulant or herbal laxatives, particularly those containing anthraquinones such as senna, aloe, or cascara [3].

However, rare cases have been reported in patients using other types of laxatives or herbal supplements [4,5]. Although melanosis coli itself is harmless, it may mimic more serious lesions such as ischemic colitis, pseudomelanosis, or even malignant infiltration on colonoscopy.

We describe the case of a 70-year-old man with chronic constipation who developed melanosis coli after prolonged use of an insulin-based laxative. The report emphasizes the importance of recognizing this reversible iatrogenic condition and provides insight into its pathophysiology and clinical implications.

CASE PRESENTATION

Patient Information

A 70-year-old man presented to the gastroenterology outpatient clinic for evaluation of chronic constipation lasting approximately 5 years. He described infrequent bowel movements (every 3–4 days) with hard stools, straining, and a sensation of incomplete evacuation.

He denied abdominal pain, rectal bleeding, melena, weight loss, or appetite changes. There was no family history of colorectal cancer or inflammatory bowel disease.

Past Medical History

- Hypertension (diagnosed 10 years earlier, controlled with amlodipine 5 mg/day)
- Hyperlipidemia (on atorvastatin 10 mg/day)
- No prior abdominal surgery
- No history of laxative abuse before starting the inulin supplement

Medication History

For the past 2.5 years, the patient had been using a commercial inulin-based laxative (powder form, one

sachet daily) to manage constipation. He denied using stimulant laxatives such as senna, bisacodyl, or cascara.

Physical Examination

- **General appearance:** alert, cooperative, well-nourished male
- **Vital signs:** BP 132/78 mmHg, HR 72 bpm, RR 16/min, afebrile

- **Abdomen:** soft, non-tender, no organomegaly or palpable masses
- **Digital rectal examination:** small amount of hard stool in the rectal vault, normal sphincter tone, no blood or masses
- **Other systems:** unremarkable

Laboratory Findings

Test	Result	Reference Range
Hémoglobine	13.6 g/dL	13–17
WBC	$6.5 \times 10^9/L$	4–10
Platelets	$260 \times 10^9/L$	150–400
Serum creatinine	0.9 mg/dL	0.6–1.3
AST/ALT	22/24 U/L	<40
C-reactive protein	<3 mg/L	<5

All other biochemical tests were within normal limits. Stool occult blood test was negative.

Colonoscopy Findings

A total colonoscopy was performed for colorectal cancer screening and evaluation of constipation. The mucosa appeared diffusely brown to black throughout the colon, particularly marked in the cecum, ascending colon, and transverse colon, while the descending colon and rectum showed patchy involvement.

The mucosa displayed the characteristic “tiger-skin” or “leopard-skin” pattern, with alternating pigmented and non-pigmented areas. No polyps, ulcers, diverticula, or vascular abnormalities were identified. The terminal ileum was normal.

Histopathological Examination

Multiple biopsies from pigmented areas were processed. Microscopic examination revealed numerous macrophages with coarse, brown-black granules in the lamina propria, particularly around crypts. The epithelium appeared intact with no dysplasia or inflammation.

- **Fontana-Masson stain:** positive (indicating melanin-like lipofuscin pigment)
- **Prussian blue stain:** negative (excluding hemosiderin)
- **Periodic acid–Schiff (PAS):** negative

Findings confirmed the diagnosis of melanosis coli.

Management and Follow-Up

The patient was advised to discontinue the inulin-based laxative and switch to non-stimulant measures for constipation:

- High-fiber diet (≥ 25 –30 g/day)
- Increased water intake (1.5–2 L/day)
- Daily physical activity (walking ≥ 30 min)
- Psyllium husk or osmotic laxative (lactulose) as rescue therapy

After 6 months, the patient reported improved bowel regularity (1 bowel movement per day or every other day) without the need for laxatives.

A repeat colonoscopy at 12 months revealed partial regression of mucosal pigmentation, confirming the reversibility of the condition once the causative agent was discontinued.

DISCUSSION

Melanosis coli was first described in 1829 and remains a well-recognized endoscopic finding in patients using long-term laxatives. Its pathogenesis involves apoptosis of colonic epithelial cells induced by laxatives or other irritants. The apoptotic cell remnants are phagocytosed by macrophages, which accumulate lipofuscin, a pigmented end product of lysosomal degradation [1,3,6].

While anthraquinone derivatives are classically implicated (senna, cascara, aloe), there is growing recognition that other agents, including herbal or inulin-based products, may alter epithelial turnover or microbiota composition, potentially triggering similar changes [4,5].

Histologically, melanosis coli is benign and not a premalignant lesion. It does not increase the risk of colorectal cancer, though it may enhance visualization of adenomas by providing contrast against the dark mucosal background (7).

Differential diagnoses include:

- Pseudomelanosis coli (iron or drug deposition)
- Ischemic colitis (patchy dark mucosa but with inflammation/necrosis)
- Hemosiderosis
- Melanocytic nevi or metastatic melanoma (rare)

Clinical relevance:

The presence of melanosis coli should alert clinicians to chronic laxative use, especially in elderly patients with functional constipation. Education on rational laxative use, dietary management, and lifestyle modification is key to prevention. Pigmentation usually fades within 6–12 months after discontinuation of the causative agent [8].

This case adds to the limited literature describing melanosis coli associated with non-anthraquinone laxatives, suggesting that chronic stimulation or microbiota-related epithelial turnover

might play a role, even in apparently mild or “natural” supplements.

CONCLUSION

Melanosis coli is a benign, reversible condition resulting from chronic epithelial apoptosis in the colon, typically related to laxative use. This case demonstrates that even inulin-based laxatives, though considered gentle, may contribute to pigmentation changes when used long-term. Recognition of this finding, patient education, and discontinuation of the causative product are essential for optimal management.



Figure1: Diffuse brown-black pigmentation of the colonic mucosa showing the characteristic “tiger-skin” pattern of melanosis coli

Human Ethics

Consent was obtained by all participants in this study

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