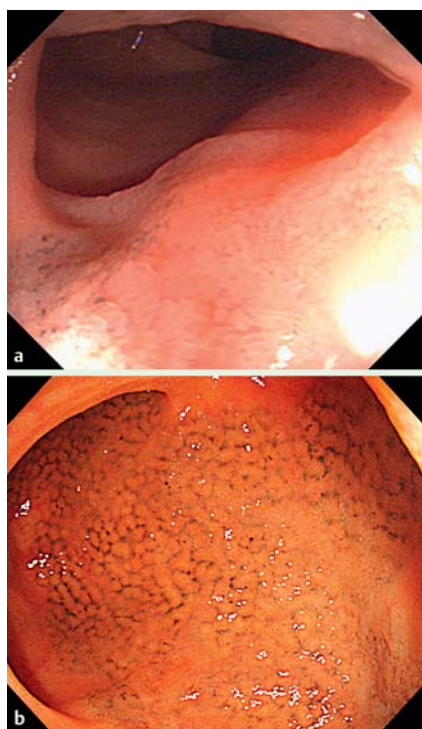
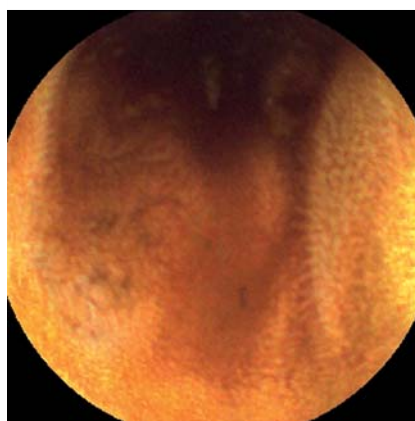


## Charcoal-induced pseudomelanosis ilei



**Fig. 1** Endoscopic view of the terminal ileum showing numerous areas of dark pigmentation during: **a** the initial colonoscopy; **b** the surveillance colonoscopy 5 year later.

A 32-year-old woman was referred to our outpatient department because of anal bleeding. She had been diagnosed with ulcerative proctitis about 1 year previously and had experienced intermittent anal bleeding during treatment at a local clinic. She had no significant medication history and in particular had not used laxatives or oral iron. The initial colonoscopy revealed numerous variable-sized areas of black



**Fig. 2** Capsule endoscopy showing gray to black pigmented mucosa in the terminal ileum.

pigmentation in the mucosa of the terminal ileum (● **Fig. 1 a**); however, the pigment was not detected in the colorectum. A capsule endoscopy also demonstrated the areas of pigmentation in the terminal ileal mucosa, although the remainder of the small bowel appeared normal (● **Fig. 2**).

Histological examination of biopsy specimens showed coarse black particles with irregular borders that were freely dispersed or focally aggregated in the lamina propria and submucosa (● **Fig. 3**).

These areas of pigmentation were negative with Prussian blue and Fontana–Masson stains.

The patient's medication history was reviewed after the evaluation; it was revealed that she had taken two teaspoons of edible charcoal powder daily for 2 days to relieve abdominal pain before the initial colonoscopy. Following this test, she took

no further charcoal powder, but a surveillance colonoscopy performed 5 years later showed that the black pigmented mucosa in the terminal ileum remained unchanged (● **Fig. 1 b**).

Pseudomelanosis ilei is rarely reported and in most of the case reports, iron deposition has been observed in the ileum [1]. Charcoal-induced pseudomelanosis ilei is extremely rare, with only two cases having been reported in the English literature [2, 3]. In our patient, the ileal pigment was thought to result from charcoal ingestion because she had not taken laxatives, oral iron, or antihypertensive agents, and the pigments in the biopsy specimens were negative for iron and melanin stains. The consequences of charcoal pigmentation are unknown, although it is believed to be a benign condition, as appears to be the case in our patient. Endoscopists should consider charcoal ingestion as one of the possible causes of pseudomelanosis ilei when they observe black pigmentation in the terminal ileum.

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**Competing interests:** None

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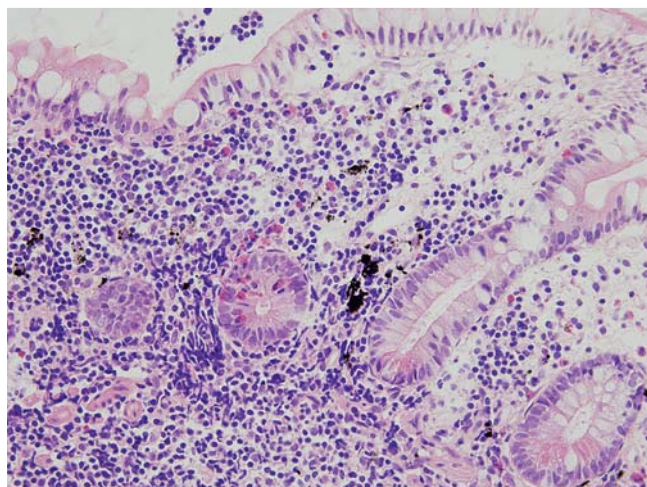
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**Fig. 3** Histological view of the terminal ileal mucosa showing brown to black pigment deposition in the lamina propria.