Small-bowel pseudomelanosis

An 80-year-old man with a past medical history of hypertension and stage 3 chronic renal failure was referred for capsule enteroscopy because of iron deficiency anemia without overt bleeding. Previous upper gastrointestinal endoscopy and colonoscopy had revealed no significant changes. He had been on oral therapy with ferrous sulfate, in addition to candesartan cilexetil/hydrochlorothiazide. Capsule enteroscopy (▶ **Video 1**) showed brown hyperpigmentation with a speckled, continuous pattern affecting the jejunum (▶ **Fig. 1 a, b**), but no hemorrhagic lesions were detected. Single-balloon enteroscopy revealed normal morphology of the villi with the same speckled brown pigmentation throughout the jejunum (▶ **Fig. 2 a, b**). Histology revealed the deposition of brown pigment within macrophages in the lamina propria of normal villi (▶ **Fig. 3 a**). A positive result with Prussian blue stain indicated hemosiderin deposition (▶ **Fig. 3 b**).

The term *melanosis*, derived from the Greek, means “state of blackness” and is appropriately used to describe conditions associated with excessive pigmentation. A variety of elements and compounds may cause dark pigmentation of the bowel, including melanin, lipofuscin, bismuth, iron, hemosiderin, and charcoal. The mechanisms of pigment deposition are unknown, and the consequences are thought to be benign [1]. Regardless of the chemical composition, deposits are typically found within macrophages in the lamina propria of normal villi.

Pseudomelanosis of the small intestine is very rare, with only a few cases reported. It may be associated with chronic renal failure, gastrointestinal bleeding, drugs (hydralazine, propranolol, hydrochlorothiazide, furosemide, ferrous sulfate), or folic acid deficiency [2]. Although pseudomelanosis is a rare entity, physicians should be aware of it to facilitate a prompt diagnosis and avoid unnecessary testing.

Fig. 1 a, b Capsule enteroscopy shows brown hyperpigmentation with a speckled, continuous pattern affecting the jejunum.

Fig. 2 a, b Single-balloon enteroscopy shows normal morphology of the villi with the same speckled brown pigmentation throughout the jejunum.

This case report underscores the association of pseudomelanosis of the small bowel with oral iron therapy and chronic renal failure. It has been hypothesized that the coupling of absorbed iron with a sulfur moiety in antihypertensive medications is the underlying mechanism for pigment accumulation in macrophages in the small-bowel mucosa [3].

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Competing interests: None

Capsule enteroscopy reveals brown hyperpigmentation with a speckled, continuous pattern affecting the jejunum.

Fig. 3 **a** Histology shows the deposition of brown pigment within macrophages in the lamina propria of normal villi. **b** A positive result with Prussian blue stain indicates hemosiderin deposition.

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References

- 1 Moore JD, Baichi M, Toledo R et al. Pseudomelanosis of jejunum and ileum. *Gastrointest Endosc* 2007; 66: 857–859
- 2 Kim SY, Choung RS, Kwon BS et al. Small bowel pseudomelanosis associated with oral iron therapy. *J Korean Med Sci* 2013; 28: 1103–1106
- 3 Almeida N, Figueiredo P, Lopes S et al. Small bowel pseudomelanosis and oral iron therapy. *Dig Endosc* 2009; 21: 128–130

Bibliography

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