

tested for iron using Prussian blue, and the bleachability was tested using acidified potassium permanganate. In H&E-stained sections, a brownish-black granular pigmentation was noted in the lamina propria of most villi, predominantly being located in the cytoplasm of macrophages. The granules stained positively with Warthin-Starry stain, but Fontana-Masson stain and PAS were negative. Staining for iron by the Prussian blue reaction was partially positive with a faint blue tint in some granules; the pigment was bleached by acidified potassium permanganate (Fig. 2). The antihypertensive regimen of the patient was changed to nifedipine, atenolol, isosorbide mononitrate, and dipyridamole. Thirty-six months later, the patient underwent follow-up endoscopy, which showed complete disappearance of the duodenal pigmentation, and there was no trace of the former pigment on biopsy specimens.

Case 2

A 71-year-old man was admitted to our hospital due to passage of melena for 3 days. The patient had hypertension, which had been controlled with hydralazine, propranolol, and cyclopenthiiazide for 10 years. Laboratory studies showed anemia with a he-

moglobin level of 8.3 g/dl, hematocrit of 26.6%, and hypoalbuminemia with an albumin level of 2.7 g/dl. The stool occult blood test was positive. Upper gastrointestinal endoscopy showed that there were 2 ulcers located at the gastric angle and the antrum, respectively, along the lesser curvature side. In addition, there were multiple, diffuse, speckled black spots in the first and second parts of the duodenum. Microscopic examination of the biopsy specimens from the duodenal mucosa revealed numerous pigment-laden macrophages within the lamina propria of the villi. The pigment was positive for Warthin-Starry stain,

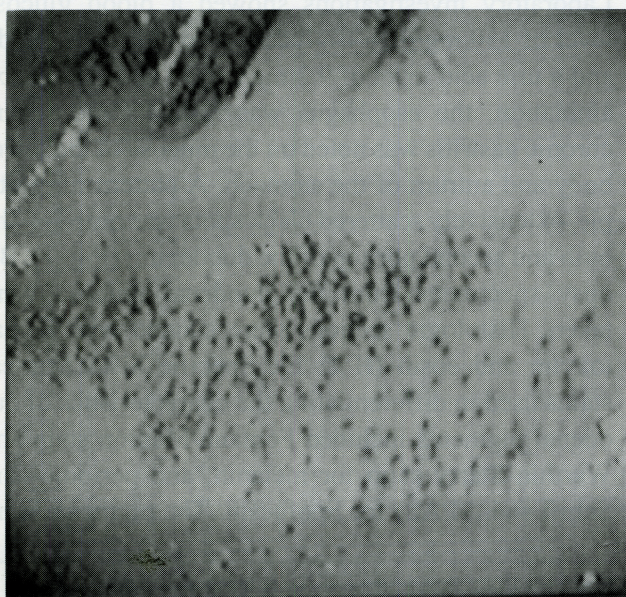


Fig. 1. Case 1, endoscopy showing a cluster of speckled black spots in the mucosa of the duodenal bulb.

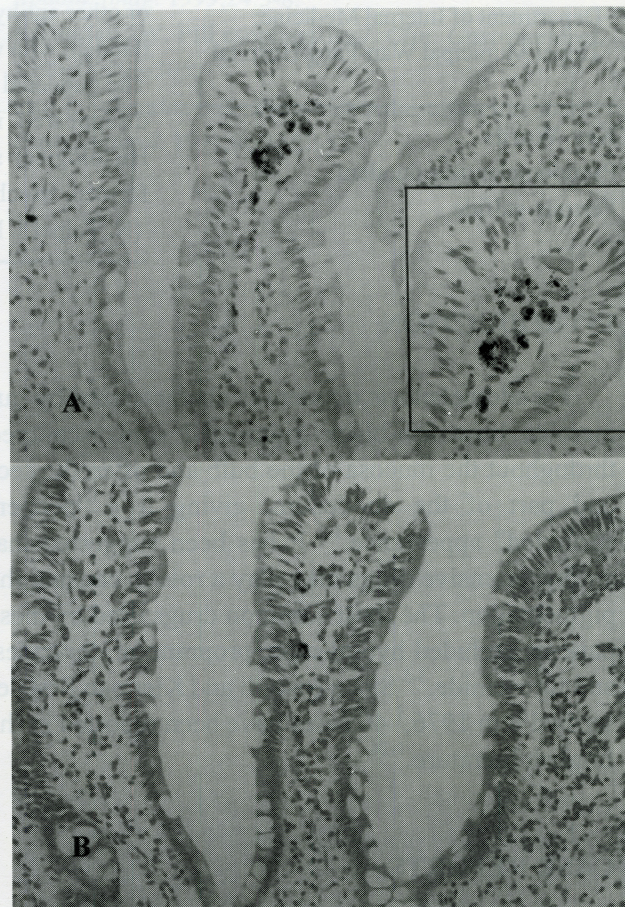


Fig. 2. Case 1, (A) duodenal mucosal biopsy showing a partial positive with Prussian stain with a faint blue tint in some granules ($\times 400$). In the box, higher magnification shows pigments within the macrophages in the apical portion of the lamina propria of the duodenal villus. (B) The pigment bleached by acidified potassium permanganate ($\times 400$).