of the aorta or hepatic artery.[5] Absence of 'washout' on the equilibrium phase images helps to differentiate this tumour from hepatocellular carcinoma. However, in small lesions radiological features may not be classical. While imaging such as CT and MRI can be helpful, but is often not conclusive. FDG-PET has also been used. Therapeutic options available are liver resection and chemotherapy. Liver transplantation has not so far been reported to be significantly beneficial for this subgroup of sarcoma patients. However, high recurrence rate and resistance to chemo-radiotherapy increase morbidity. Lungs are the most common site of metastasis followed by spleen and bones.[4]

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Pseudomelanosis duodeni

Pseudomelanosis duodeni (PD) was first reported as "melanosis duodeni" by Bisordi and Kleinman in 1976.[1] It is a very rare benign condition characterized by the accumulation of a dark pigment in duodenal mucosa. The term 'melanosis' is logically replaced with 'pseudomelanosis' because the pigment here is not produced by melanocytes.[2] Although PD is a benign condition its etiopathogenesis and clinical significance has not been defined.

Case Report

A 70-year-old female presented with intermittent dysphagia for one year. There was no history of weight loss, vomiting, hematemesis, melena, abdominal distention or lump. She was a known case of diabetes mellitus and hypothyroidism, currently taking thyroxine, glypizide, metformin and multivitamins. Her Hb was 12.4 g/dL and creatinine was 0.98 mg/dL. Serum electrolytes were normal. Upper GI endoscopy revealed a peptic stricture at the lower end of the esophagus. The stricture was dilated by a boogie to a diameter of 15 mm. Further passage of scope revealed multiple discrete, flat and brownish-black spots in the mucosa of the first and second part of the duodenum (**Figure 1**). Duodenal biopsies showed pigment-laden macrophages in the lamina propria at the tip of villi (**Figure 2**). Stains for iron and melanine were negative. A diagnosis of PD was confirmed.

Discussion

Pseudomelanosis duodeni is collection of pigment-laden macrophages in the tips of duodenal villi. As compared to melanosis coli, which is a common entity in routine colonoscopy, PD is very rare. Usually asymptomatic, it is an incidental finding on upper GI endoscopy. This condition seems to be acquired rather than congenital.[3] It occurs predominantly in females aged over 60 years. Unlike melanosis coli, PD is not associated with anthraquinone laxatives use. It is usually associated with chronic renal failure, chronic heart failure, hypertension,

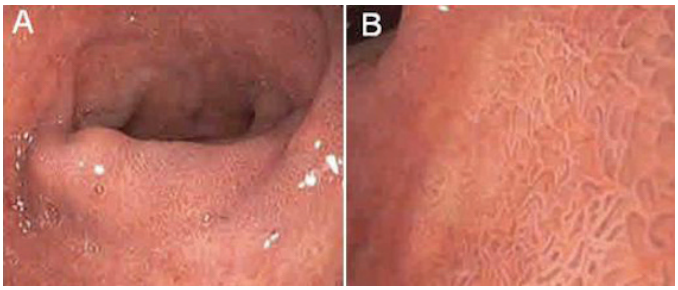

Figure 1: Endoscopy showing (A) Multiple brownish black spots in the duodenum (B) Magnification image (near focus mode, GIF HQ190_ Olympus).

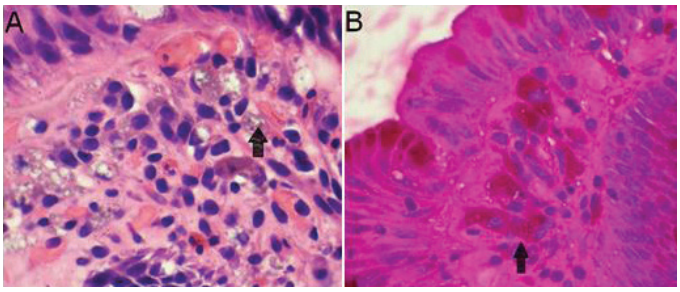

Figure 2: Duodenal biopsy showing brown pigment containing macrophages (arrow) in lamina propria at the tip of villi A) HE stain, x100 B) PAS stain, x100.

diabetes mellitus, GI bleeding and medications like ferrous sulphate, propranolol, hydralazine, thiazide, furosemide, digoxin and methyldopa.[4] The pigment here may be melanine-like substances, hemosiderin, lipomelanin and lipofuscin.[5] Although iron is the main compound, sulfur, calcium, potassium, magnesium, silver and aluminum have also been found in varying proportions.[6] This pigment deposition may be due to an impaired intramucosal iron transport or impaired macrophage metabolism. Normally, a fibroinflammatory response follows the deposition of iron or other heavy metals elsewhere in the body. Interestingly, however, no cases of fibrosis, stricture, erosion or duodenitis in PD have been reported in the literature. The prognostic significance and natural history of PD is not clear. No therapeutic intervention or follow-up endoscopy is recommended.

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