Annular pancreas is a rare congenital anomaly in which a ring of pancreatic tissue encircles the second part of the duodenum [1]. Here we present the endoscopic findings in two patients with annular pancreas, including the first endoscopic ultrasound (EUS) video to be published of the condition, illustrating the pancreatic duct coursing around the duodenum.

Our first patient was a 70-year-old man who presented with severe anemia. Esophagogastroduodenoscopy showed narrowing of the second part of the duodenum with ulceration and contact bleeding (Fig. 1). Biopsies did not reveal any malignancy or evidence of Helicobacter pylori infection. Abdominal computed tomography (CT) showed a ring of pancreas encircling the duodenum (Fig. 2). The patient was discharged with a prescription for omeprazole. At follow-up more than a year later, there was no outlet obstruction and the anemia had resolved. Magnetic resonance imaging (MRI) confirmed the presence of annular pancreas (Fig. 3).

Our second patient was a 59-year-old man with Ogilvie’s syndrome. Abdominal CT revealed a 15-mm dilated common bile duct (CBD) along with dilated bowel loops. Liver function tests were normal. Radial EUS evaluation of the biliary tree did not show any stone or stricture, but the pancreas and pancreatic duct were seen encircling the second part of the duodenum and merging with the distal CBD at the ampulla (Video 1). The dilated CBD was attributed to the annular pancreas.

Annular pancreas was first described by Tiedemann in 1818 and named by Ecker in 1862 [2]. It results from the failure of the ventral anlage of the pancreas to rotate with the duodenum during gestation. Symptomatic anemia and a dilated CBD are extremely rare presentations of annular pancreas [3,4]. The diagnosis of this condition can be confirmed by EUS, CT, or MRI [5].

Video 1
Radial endoscopic ultrasound (EUS) (duodenum). The dilated common bile duct (CBD) is seen medial to the portal vein (PV). Pancreatic parenchyma surrounds the duodenum lumen with the hypoechoic pancreatic duct (PD) coursing from the genu at the PV, around the transducer (counterclockwise direction) to 11 o’clock, where the CBD and ampulla are located.

Competing interests: None
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DOI http://dx.doi.org/10.1055/s-0032-1325775
Endoscopy 2012; 44: E417–E418
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

Corresponding author
Dr E. W. L. Wee
Division of Gastroenterology
Department of General Medicine
Khoo Teck Puat Hospital
90 Yishun Central
Singapore 768828
Fax: +65-6602-3700
Wee1976@gmail.com

Fig. 4 a, b Endoscopic ultrasound (EUS) view of the second part of the duodenum. The dilated common bile duct (CBD) is seen lying medial to the portal vein (PV) and the pancreatic parenchyma is encircling the transducer. The pancreatic duct (PD) is seen intermittently coursing from the genu at 8 o’clock around the transducer in a counterclockwise fashion to the 12 o’clock position (arrowheads).