Image Diagnosis: An Unusual Cause of Upper Gastrointestinal Bleed—Isolated Duodenal Varices

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CASE PRESENTATION
A 25-year-old woman presented to the Emergency Department with hematemesis and melena. She denied history of jaundice or liver disease. At initial presentation, her blood pressure was 90/50 mmHg with a heart rate of 140/min. Physical examination was remarkable for abdominal distension. Laboratory findings demonstrated hemoglobin of 3.0 g/dL, and platelets were 100,000/mm3. Liver function test findings included total bilirubin, 0.5 mg/dL; aspartate aminotransferase/alanine aminotransferase, 90/70 U/L; alkaline phosphatase, 59 IU/L; total protein, 4.9 g/dL; albumin, 1.7 g/dL; international normalized ratio, 1.6; and normal kidney function test results. The test results for hepatitis B surface antigen, hepatitis B core antibody, and antihepatitis C antibody were negative. The test results for detection of antibodies against nuclear and smooth muscle antigen were positive, with both having a titre of 1:40 and raised total immunoglobulin G level, indicating autoimmune hepatitis as the probable cause of cirrhosis.

The patient was initially resuscitated with isotonic fluids and packed red blood cell transfusions. Results of an upper gastrointestinal endoscopy did not show varices in the esophagus or stomach. The proximal segment of the second part of the duodenum showed multiple varices, and 1 of the varices had a nipple sign (Figure 1). Computed tomography of the abdomen results showed nodular liver, splenomegaly, ascites, and paraduodenal varices with a patent portal vein, splenic vein, and superior mesenteric vein (Figure 2). The afferent vein supplying the duodenal varices was from the superior mesenteric vein, and the efferent vein drained into the inferior vena cava. N-Butyl cyanoacrylate was injected into the varices, leading to obliterations of varices. She received intravenous terlipressin and prophylactic antibiotics injections along with other supportive care. Although the bleeding was controlled, she developed hospital-acquired pneumonia and died from sepsis.

DISCUSSION
Duodenal variceal bleeding is an uncommon complication of portal hypertension with very high mortality rates.1 Cirrhosis is the most common cause of duodenal varices, and in most cases, it occurs concomitantly with esophageal varices and/or gastric varices.1,2 Isolated duodenal varices are less frequently reported. Retroperitoneal portosystemic shunts cause an increase in hepatofugal blood flow through the gastroduodenal veins and superior and/or inferior pancreaticoduodenal veins, which leads to the development of paraduodenal varices.3 These paraduodenal varices can communicate through perforators with vascular channels in the submucosa of the duodenum, which can gradually enlarge over a period of time to form duodenal varices. The most common site of occurrence is at the duodenal bulb, and the frequency of occurrence decreases the farther away the site is from the duodenal bulb.4

Duodenal varices are most frequently diagnosed by endoscopic examination. If the site of bleeding cannot be identified by endoscopic examination, other modalities such as abdominal...
computed tomography, mesenteric angiography, and endoscopic ultrasonography can be considered.\textsuperscript{5} The optimal treatment modality is not well established because of its rare occurrence. Treatment modalities such as band ligation, sclerotherapy, hemoclips, coil embolization, transjugular intrahepatic portosystemic shunt, balloon-occluded retrograde transvenous obliteration, and shunt surgery have been used in management of bleeding duodenal varices.\textsuperscript{1,2,4-8}

Disclosure Statement
The author(s) have no conflicts of interest to disclose.

References