A rare cause of obstructive jaundice: diagnosis by EUS and single-operator per-oral cholangioscopy

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A 79-year-old woman was admitted because of painless jaundice, choluria, acholia, and generalized pruritus for the previous week. On physical examination, an epigastric mass was identified. Abdominal US showed dilation of the common bile duct (CBD) and intrahepatic biliary tree, with an apparent stricture of the middle third of the CBD. Laboratory findings included microcytic anemia (hemoglobin 6.5 g/dL), normal inflammatory markers, high levels of serum bilirubin (6.0 mg/dL), and elevated transaminases (aspartate aminotransferase 262 IU/L; alanine aminotransferase 492 IU/L) and cholestasis parameters (γ-glutamyltransferase 426 IU/L; alkaline phosphatase 519 IU/L).

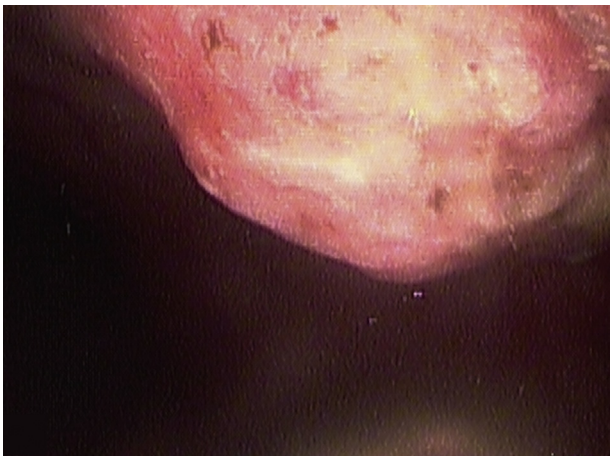

Figure 1. Irregular and ulcerated lesion, 4 to 5 cm, on gastric cardia, extending to the lesser curvature.

An EUS was performed and showed, on the gastric cardia, an irregular and ulcerated lesion of 4 to 5 cm, extending to the lesser curvature (Fig. 1) and involving all gastric wall layers, splenic vessels, and pancreas (T4) (Fig. 2). Malignant perigastric adenopathies were identified (N+). The pancreas had no other parenchymal or ductal abnormalities. The ampullary area and distal CBD were normal. However, on the middle third of the CBD, a hypoechogenic, heterogeneous, irregular, infiltrative, stenotic lesion was identified (Fig. 3). This lesion caused marked dilatation of the proximal CBD duct and intrahepatic biliary ducts and presented a hard pattern on elastography (Fig. 4). The parenchyma of the left liver lobe was unremarkable. Examination of biopsy specimens confirmed gastric adenocarcinoma (intestinal type, Lauren classification). At this point, the hypotheses of a synchronous cholangiocarcinoma versus a biliary metastasis of the gastric adenocarcinoma were proposed as the cause of the bile duct stricture.

An ERCP with single-operator per-oral cholangioscopy (SpyGlass, Boston Scientific, Natick, Mass) was then performed. Cholangiography confirmed an irregular stricture

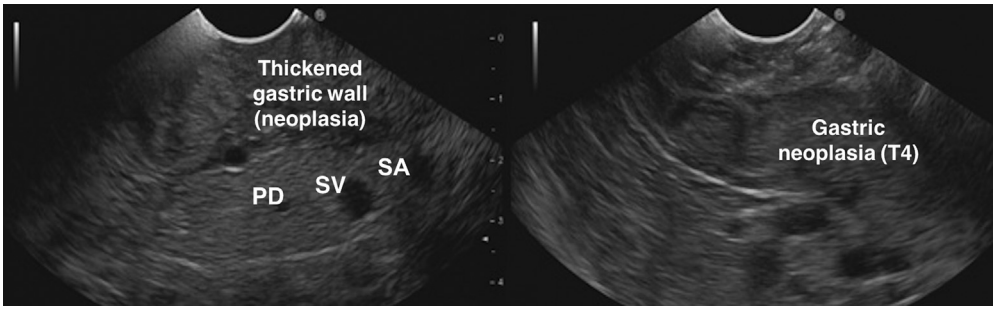

Figure 2. Gastric lesion involving all gastric wall layers, splenic vessels, and pancreas (T4). *PD,* pancreatic duct; *SA,* splenic artery; *SV,* splenic vein.

Written transcript of the video audio is available online at www.VideoGIE.org.

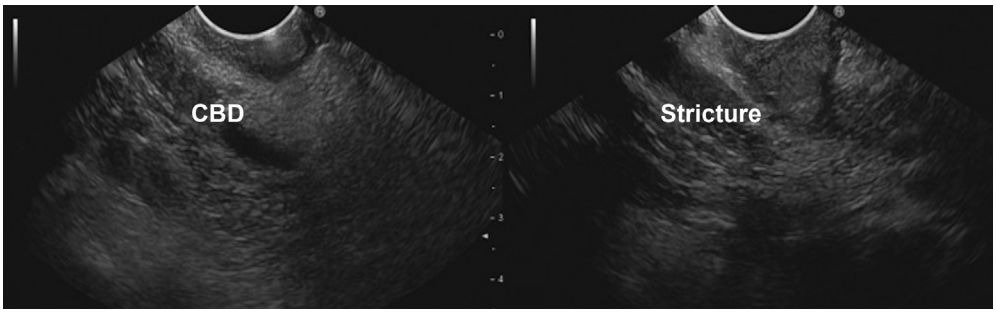

Figure 3. Hypoechogenic, heterogeneous, irregular, infiltrative, stenotic lesion on the middle third of the common bile duct (CBD).

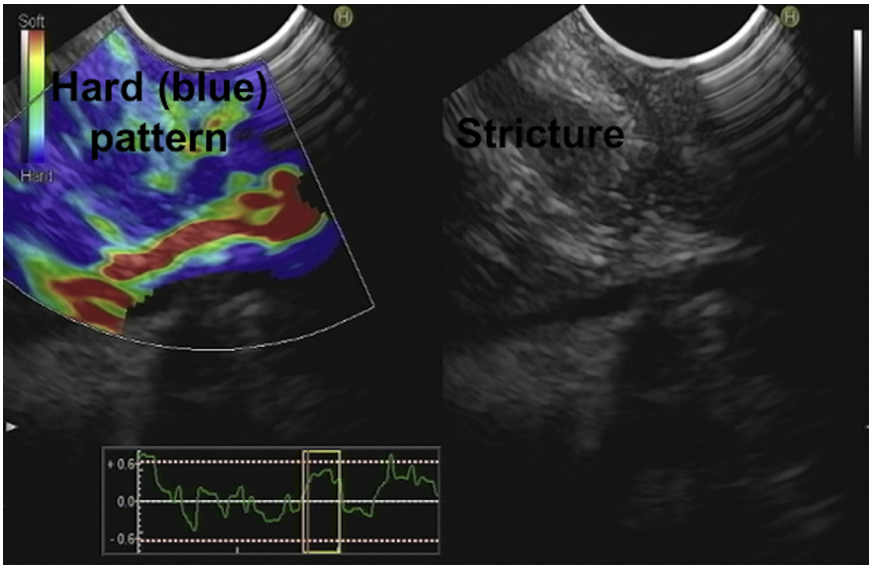

Figure 4. Hard (*blue*) elastographic pattern of the common bile duct lesion.

Figure 5. Cholangiographic view showing an irregular stricture of the middle third of the common bile duct (CBD) with upstream dilation of the biliary tree.

Figure 6. Placement of a self-expandable uncovered metal stent, 8 × 60 mm.

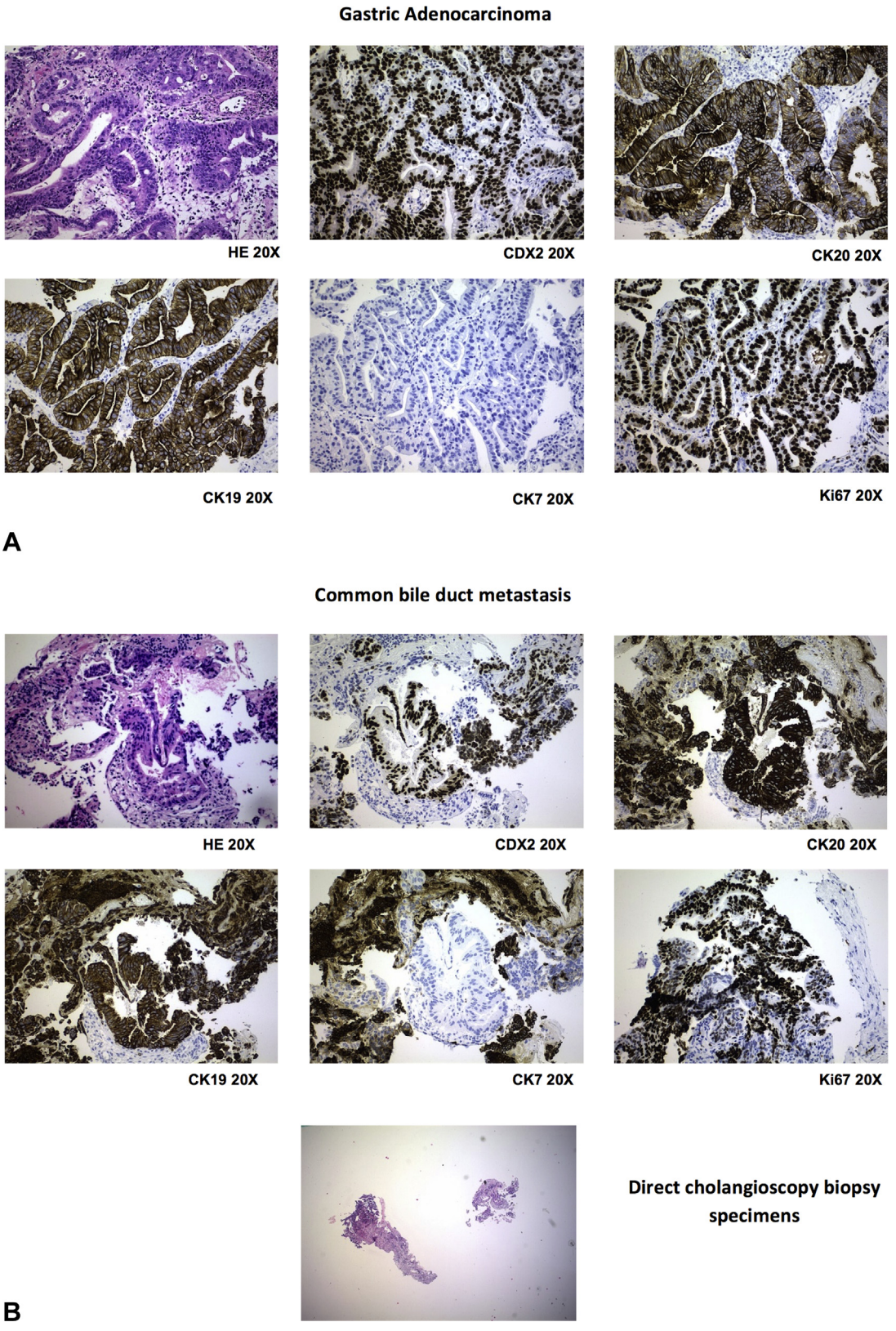

Figure 7. Imunohistochemical analysis of (**A**) gastric and (**B**) common bile duct biopsy specimens.

of the middle third of the CBD with upstream dilation of the biliary tree (Fig. 5). Sphincterotomy was done. Cholangioscopy showed a stenotic segment just above the cystic duct insertion, with irregular and friable mucosa with aberrant vessels. Biopsies were performed (Video 1, available online at www.VideoGIE.org). A self-expandable uncovered metal stent 8 × 60 mm was placed (WallFlex, Boston Scientific) (Fig. 6). Examination of biopsy specimens revealed adenocarcinoma, and the immunohistochemistry study of both gastric and biliary stricture biopsy specimens showed positivity for cytokeratin 19 and 20 and for CDX2 (Figs. 7A and B). CK7 was negative, and the proliferative index (Ki67) was high. Thus, CBD metastasis of a gastric adenocarcinoma was diagnosed (M1).

Painless jaundice resulting from intraductal CBD obstruction is far more frequently caused by primary biliary or pancreatic cancer than by metastatic disease.[1] Extrinsic obstruction resulting from malignant lymphadenopathies is also much more common.[1] Intraductal CBD secondary lesions are extremely rare and have been seldom characterized in the literature. In the few cases described, it occurred in breast, colon, and gastric cancer.[2,3] Differential CT features suggestive of intraductal metastasis rather than cholangiocarcinoma were described.[4] However, EUS and single-operator per-oral cholangioscopy are probably more useful examinations for this differential diagnosis because they allow characterization of the CBD strictures and tissue acquisition for cytologic and histopathologic examination. In the present case, EUS was essential not only for the diagnosis and staging of the primary tumor but also for the identification of this rare type of metastasis. EUS has a well-established role in the study of biliary strictures. However, FNA has a lower sensitivity in this context, mainly if a mass is not detected at EUS.[5] Thus, endoluminal sampling is recommended either as an alternative or in combination with FNA.[5] ERCP conventional sampling (intrabiliary forceps and cytology brush) is inferior or, at maximum, comparable with FNA.[6] Cholangioscopy assumes an important role in cases of false-negative results from these 2 techniques.[7] Although the risk of FNA seems exceedingly low, cholagioscopy overtakes the concerns about tumor seeding.[5]

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviation: CBD, common bile duct.

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