Cholangioscopically Guided Diagnosis of Cholangiocellular Carcinoma in a Patient with Primary Sclerosing Cholangitis

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Patient History & Assessment

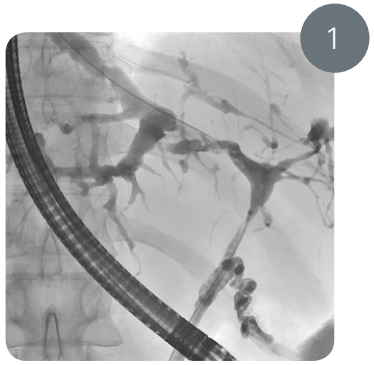
A 49-year-old patient with a long standing history of Primary Sclerosing Cholangitis (PSC) and well compensated liver cirrhosis was seen at his regular 6-month surveillance visit. He complained of recently developed fatigue and mild weight loss, lab testing revealed increased cholestasis parameters. MRI and PET-CT showed no suspicious lesions in or outside of the liver.

Upon performing endoscopic retrograde cholangiography (ERC), the cholangiogram was comparable to previously performed examinations with irregular bordering of the common bile duct (CBD), dilated left hepatic ducts and marked peripheral rarefication in the right hepatic ducts [Figure 1].

We decided to use the SpyGlass™ DS System to evaluate the biliary system for evidence of neoplastic disease.

Procedure

Upon performing the cholangioscopy, we found pathologic changes to the biliary epithelium in both the CDB and all intrahepatic ducts we evaluated (Figures 2 and 3). While proximally to the hilum, scar formation, spotty reddening and fibrin clouds indicated inflammatory changes, we saw a short section of the extrahepatic common bile duct with many tortuous frail vessels bleeding on contact (Figures 4 and 5). Although the ductal segment was not strictured, we decided to take biopsies using SpyBite™ Biopsy Forceps in the conspicuous segment both by withdrawing single biopsies with the forceps and by leaving a number of samples floating in the lumen and collecting them by extraction via the suction channel.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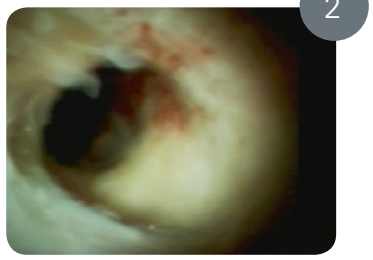
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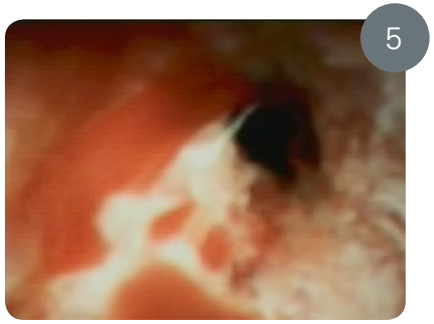
Outcome & Patient Follow-up



Histologic examination of the retrieved tissue samples revealed adenocarcinoma, consistent with cholangiocarcinoma (CCC) arising from PSC. As the cross-sectional imaging showed no evidence of extraductal disease and liver function was stable, laparotomy was performed subsequently. Unfortunately, small peritoneal lesions indicated extraductal cancer spread and did preclude curative resection of the tumor. The patient had to be taken off the liver transplant waiting list and was offered chemotherapy as a palliative treatment.

Summary

Early diagnosis of cholangiocarcinoma in patients with PSC is a particularly challenging undertaking and there is no single or combined method with sufficient sensitivity today, most notably the widely practiced brush cytology. Cholangioscopy appears to be an attractive approach to evaluation of the larger intra- and extrahepatic bile ducts, but experiences with established systems have been disappointing because the distinction between inflammation and neoplasia is nearly impossible and bioptic mapping of the biliary tract is usually not feasible.

The first impressions of the visual quality of the SpyGlass™ DS System's image provided me with hope for an improvement in this regard and an approach to better identification of neoplastic intraductal lesions within inflammatory biliary changes, thus facilitating early diagnosis of CCC in a stage where curative resection is still an option. The markedly improved possibility of diagnosing changes in vascular patterns with the SpyGlass DS System might be a key feature here.

General Recommendations

- We use the SpyGlass DS System both for diagnostic purposes in patients with biliary strictures or filling defects and for stone management. The increased visual quality is –to my opinion- the most important improvement made to the system.

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- The easy and quick set-up of the cholangioscope makes it possible to decide on using cholangioscopy mid-procedure without relevant delay.
- It is very possible to advance the cholangioscope deeply into intrahepatic ducts in most patients even in diffuse biliary disease so cholangioscopic evaluation is not limited to the central biliary ducts.
- The use of the SpyGlass™ DS System in the distinction between inflammatory changes and neoplastic disease has to be studied in depth but is worthwhile given the size of the problem.

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