



Concise Commentary: Why Cholangioscopy for Indeterminate Biliary Strictures in PSC Is Still Not Good Enough

Christoph Schramm¹

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Primary sclerosing cholangitis (PSC) is a major risk factor for the development of hepatobiliary malignancy with around 20% of patients developing cholangiocarcinoma (CCA) [1]. More than 50% of PSC patients develop high-grade (mostly benign) bile duct strictures during the course of the disease that complicate disease management, since the accurate diagnosis of indeterminate biliary strictures is challenging. Since early CCA can mimic benign strictures, early diagnosis of CCA is crucial in order to facilitate timely curative resection. Since cross-sectional imaging with CT or MRI usually cannot differentiate between benign and early-stage malignant stricture, ERCP with brush cytology and transpapillary biopsies is therefore required. Biliary brushings and biopsies are associated with high specificity but low sensitivity (40–50%) for the detection of CCA. The addition of fluorescence in situ hybridization (FISH) is reported to increase sensitivity by about 10–15%.

In this issue of *Digestive Diseases and Sciences*, Kaura et al. [2] investigated whether peroral single-operator cholangioscopy (SOC) improved diagnostic accuracy of biliary strictures of uncertain etiology in patients with PSC. The authors retrospectively analyzed 92 patients, over a period of 10 years, of whom 36 had PSC and 41 had CCA. In line with previous publications, brush cytology demonstrated a sensitivity of 45% and FISH improved this by ~10% in the overall cohort. The authors report that the addition of SOC with guided biopsies or transpapillary biopsies improved sensitivity significantly to 71% in the overall cohort, but not in patients with PSC. Reassuringly, complication rates were not increased in patients with PSC undergoing biliary

interventions, confirming findings recently reported in PSC patients with cirrhosis [3].

The study by Kaura et al. is a retrospective single-center study analyzing a heterogeneous cohort that was investigated without a uniform protocol. Acknowledging these restrictions, the study confirms previous data on the low sensitivity of brush cytology in bile duct strictures, even after addition of FISH. Although it has previously been suggested that SOC is the most accurate diagnostic modality for the detection of CCA in PSC [4], the addition of SOC, in this study, did not improve sensitivity for detecting CCA in PSC. Thus, most centers will adopt a “step-up” approach for the diagnosis of CCA in patients with PSC, albeit at the cost of time [5].

There remains an unmet need to accurately diagnose CCA in patients with biliary stricture, especially in PSC patients. Future protocols should not only assess endoscopic techniques but also incorporate modern molecular biomarkers such as DNA methylation and proteome analyses in order to generate an algorithm that will facilitate accurate and timely diagnosis of CCA.

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✉ Christoph Schramm
c.schramm@uke.de

¹ Department of Medicine, Martin Zeitz Center for Rare Diseases, European Reference Network for Hepatological Diseases, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

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