

## Inhibited hepatobiliary excretion is a sign of cholangiocarcinoma in patients with primary sclerosing cholangitis

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Cholangiocarcinoma occurs in 10-20 % of patients with primary sclerosing cholangitis (PSC) both in patients with and without underlying cirrhosis. The diagnosis of cholangiocarcinoma in patients with PSC in the presence of benign biliary strictures is very difficult. The aim of the study was to investigate if bile duct strictures caused by cholangiocarcinoma, prevented upstream biliary excretion of a hepatobiliary contrast agent in patients with PSC.

**Patients and Methods:** In our university hospital register of PSC patients we identified 54 patients with development of biliary malignancy during the last ten years. Among these 14 underwent presurgical scanning with Gd-BOPTA MultiHance (0.1 mmol/kg body weight) in 1.5 T MRI. Dynamic scanning was performed including the hepatobiliary phase (range 45 –185 minutes). Three patients with biliary stents and three with gall bladder carcinoma were excluded. In the remaining six patients presence of suspected malignant strictures including T1 and T2 signal changes and peripheral bile duct dilatation was noted as well as appearance of upstream contrast excretion in affected and unaffected bile ducts. Comparison was made to histopathological findings (2 explants, 1 surgery and histopathology, 2 biopsy and 1 cytology).

**Results:** In five of the six patients there was no contrast excretion in cholangiocarcinoma strictured segments (figure). In all cases the excretion was preserved from adjacent segments speaking against development of cirrhosis. One patient had an intrahepatic cholangiocarcinoma filling the caudate lobe without upstream ductal dilatation. Thus, a non-excretory bile duct dilatation in PSC raises the suspicion of a malignant stricture and should be further investigated by ERCP and brush cytology.

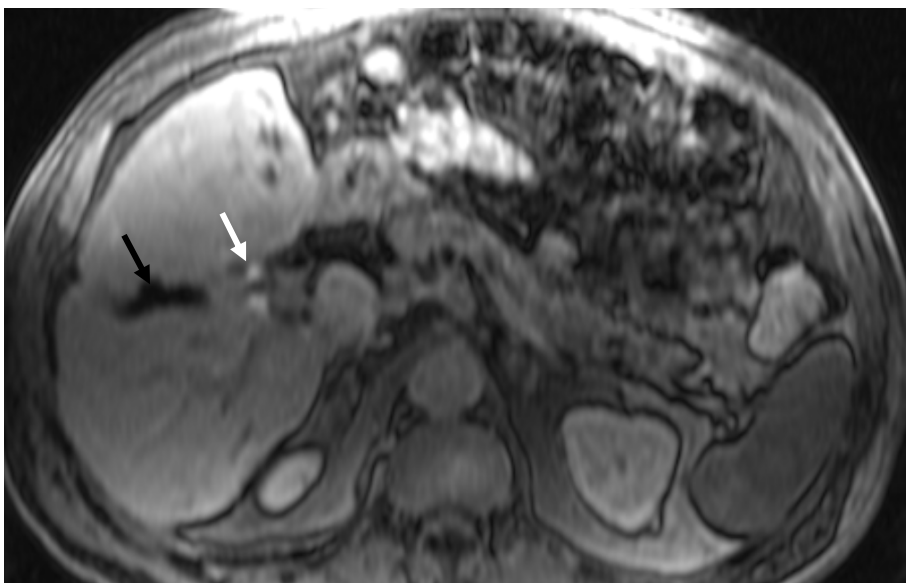


Figure. T1 delayed scan shows dilated non excretory bile duct (black arrow) caused by cholangiocarcinoma. Note preserved excretion from adjacent segments (white arrow).