Biliary tract intraductal papillary mucinous neoplasm: single-operator cholangioscopy and clearance of mucin obstruction

Biliary tract intraductal papillary mucinous neoplasm (BT-IPMNs) are the counterparts of pancreatic IPMNs, and are characterized as papillary lesions that produce mucin and spread along the biliary mucosa causing obstructive jaundice [1]. These tumors can develop anywhere along the biliary tree, and are considered to be premalignant lesions [2]. We report a case of a BT-IPMN diagnosed by cholangioscopy-guided biopsy, and a novel technique of clearing the biliary tree with a mucolytic solution.

A 49-year-old man presented with obstructive jaundice (serum bilirubin 15mg/dL) and abdominal pain. Contrast computed tomography showed focal dilation of bile ducts in segments IV and VIII and dilatation of the common bile duct, with no stones or adenopathy (Fig. 1 a, Fig. 1 b). Endoscopic retrograde cholangiopancreatography (ERCP) detected amorphous filling defects of the common bile duct with poor opacification of the intrahepatic ducts, especially at the right side (Fig. 2 a, Fig. 2 b). As a mucin clot was obstructing bile flow, a 5-minute wash with mucolytic agent (n-acetyl cysteine) through an inflated extractor balloon (Video 1) was done to improve clearance. Single-operator cholangioscopy (SpyGlass; Boston Scientific, Natick, Massachusetts, USA) was performed to evaluate the extent and involvement of the tumor growth within the bile duct as well as to provide direct-view biopsies (Fig. 3). A protruded, friable 8-mm lesion, located in the right intrahepatic duct, was biopsied and histopathological examination revealed a mucinous papillary neoplasm without dysplasia (Fig. 4 a, Fig. 4 b). The patient recovered without adverse events, his serum bilirubin levels decreased to 2 mg/dL, and a surgical resection was planned.

BT-IPMN is a rare variant of bile duct tumor, with malignancy varying on several reports to as high as 64%–89% [1, 3,4]. Clinical presentations include abdominal pain, jaundice, and acute cholangitis. Peroral cholangioscopy can assess the spread of the tumor and allows histological confirmation, providing better information for surgical planning [5]. We undertook a novel approach of mucin removal by injection of a mucolytic agent, thus improving biliary clearance before surgery.

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Fig. 4 a, b Histopathological appearances of a mucinous papillary neoplasm.