A Case of Biliary Intraepithelial Neoplasia of the Extrahepatic Bile Duct

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Introduction

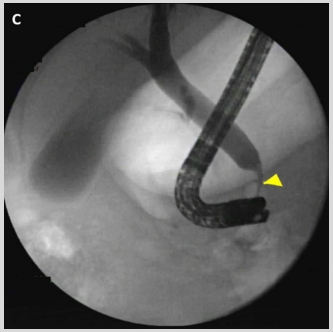
Biliary intraepithelial neoplasia (BilIN) is a relatively new diagnosis that refers to flat or micropapillary precursor lesions of the bile duct which can develop into adenocarcinomas. Herein, we present a case of an extrahepatic biliary intraepithelial neoplasia that was found during endoscopic retrograde cholangio-pancreatography (ERCP).

Case Description

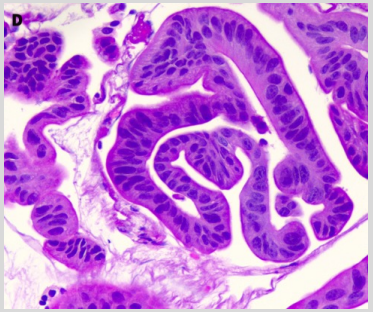
A 54-year-old male with a history of HTN and tobacco abuse presented with sharp RUQ abdominal pain with intermittent nausea and vomiting of one month duration. On admission, he was hemodynamically stable, with normal labs including liver function tests. MRI/MRCP revealed intra- and extra-hepatic duct dilation up to 12 mm with no intraductal filling defect or stricture and a normal gallbladder. [Fig. 1A]. The patient underwent an EUS which revealed CBD dilation up to 12 mm with a hypoechoic lesion in the distal bile duct proximal to the ampulla [Fig. 1B]. ERCP was performed, and cholangiogram revealed diffuse dilation of the biliary tree with no obvious stricture or filling defect. [Fig. 1C]. The biliary tree was swept, and nothing was found. Due to the suspicious lesion seen on the EUS we performed distal common bile duct brushing and biopsies. Histopathology revealed BilIN grade 2. [Fig.1D]. The patient underwent a pancreaticoduodenectomy Whipple's procedure with pathology from the resected bile duct confirming BilIN.

MRI T2 flare reveals intra- and extra-hepatic duct dilation up to 12 mm with no intraductal filling defect or stricture

EUS reveals hypoechoic lesion in the distal bile duct, just proximal to the ampulla



ERCP cholangiogram reveals diffuse dilation of the biliary tree with no obvious stricture or filling defect



Hematoxylin and eosin stain reveals dysplastic biliary epithelium (flat architecture; enlarged, hyperchromatic nuclei with nucleoli and some pseudostratification, rare mitotic figures) consistent with BilIN grade 2

Discussion

BilIN refers to flat or micropapillary precursor lesions of the bile duct which can develop into adenocarcinomas. They are commonly found in liver samples of chronic biliary and liver diseases such as hepatolithiasis, primary sclerosing cholangitis, choledochal cyst, chronic hepatitis C, and alcoholic cirrhosis. However, they are rarely found in clinical practice since they are not easily accessible, nor do they usually cause bile duct obstruction. The natural course of BilIN is not well understood. In 2017, diagnostic criteria were created for lesions found in the intrahepatic and extrahepatic ducts based on their cellular and structural atypia. Lesions in the extrahepatic duct do occur, however, very rarely. This case is unusual in that the BilIN caused symptoms suggestive of biliary obstruction with a dilated bile duct and because the BilIN was found in the extrahepatic duct. The case highlights the importance of considering BilIN in biliary obstruction and perform biopsies to identify the lesions prior to development of malignancy.

Bibliography

Wang W, Chen W, Li K, Wang J. Successful treatment of biliary intraepithelial neoplasia in the common bile duct via local excision: A case report. *Oncol Lett.* May 2016;11(5):3142-3144. doi:10.3892/ol.2016.4336

Zen Y, Adsay NV, Bardadin K, et al. Biliary intraepithelial neoplasia: an international interobserver agreement study and proposal for diagnostic criteria. *Mod Pathol.* Jun 2007;20(6):701-9. doi:10.1038/modpathol.3800788

Jung W, Kim B. Biliary intraepithelial neoplasia: a case with benign biliary stricture. *Korean J Hepatol.* Dec 2011;17(4):328-30. doi:10.3350/kjhep.2011.17.4.328