

Ultrashort Common Bile Duct – A Novel Biliary Variant

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Abstract

Detection of variations in biliary ductal anatomy is of paramount importance as it may lead to diagnostic fallacies and ductal injury during therapeutic and surgical procedures. Authors report a unique case of ultrashort common bile duct (CBD), a novel biliary variant due to extreme low union of right and left hepatic ducts with cystic duct opening in right hepatic duct.

Keywords: Biliary system; Magnetic resonance cholangiopancreatography; Anatomy

Introduction

A 65 year old woman presented to our hospital with complaints of right upper abdominal pain and vomiting. Clinical examination was unremarkable. Laboratory evaluation revealed mildly elevated total bilirubin levels (1.6 mg/dl). Ultrasound abdomen revealed dilated common bile duct (CBD) with mild intrahepatic biliary radical (IHBR) dilatation and was referred for magnetic resonance imaging (MRI) for further evaluation.

Magnetic resonance cholangiopancreatography (MRCP) with heavily T2 weighted images confirmed mild IHBR dilatation. Right and left hepatic ducts were dilated and had separate extrahepatic and intrapancreatic course. Right hepatic duct passed posterior to the left hepatic duct in the intrapancreatic course and united with the left hepatic duct along the left lateral aspect just proximal to ampulla to form ultrashort CBD (1.6 cm length). T2 hypointense calculi were seen in the proximal right hepatic duct at the porta and in the terminal CBD just before its opening the ampulla, suggestive of choledocholithiasis (Figure 1). Cystic duct was seen joining the right hepatic duct. Pancreatic duct was normal in caliber and was opening normally at the major duodenal papilla. Gall bladder was unremarkable.

The patient underwent endoscopic retrograde cholangiopancreatography (ERCP) which confirmed the MRCP findings and endoscopic sphincterotomy and removal of stones were performed.

Discussion

Detection of variations in biliary ductal anatomy is of paramount importance as it may lead to diagnostic fallacies and ductal injury during therapeutic and surgical procedures. MRCP allows noninvasive accurate multiplanar evaluation of biliary system using heavily T2 weighted 3D sequences. Right hepatic duct is normally formed by anterior and posterior branches of right lobe while left hepatic duct is formed by medial and lateral branches of left lobe. Common hepatic duct (CHD) is formed by union of right and left hepatic ducts at the porta. Cystic duct opens in the common hepatic duct below the hepatic ductal confluence to form CBD. This normal anatomy is seen in 60 to 65 % of patients [1,2]. The length of CBD varies from 5 to 15 cm [3]. Common variations include right posterior duct opening in left hepatic duct or right lateral aspect of right anterior duct and triple ductal confluence with CHD formation by union of right posterior, right anterior and left hepatic ducts [1,2,4,5].

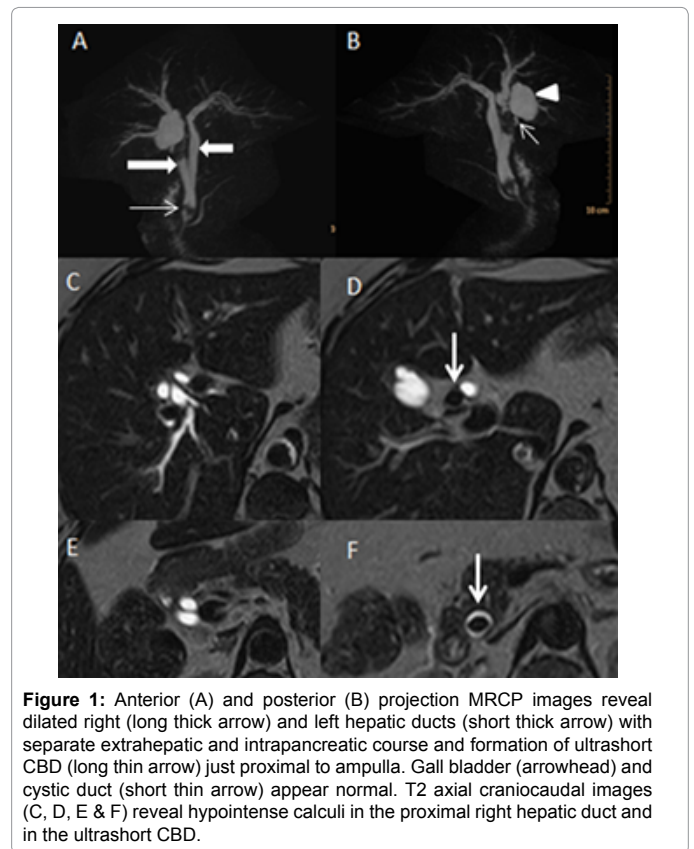


Figure 1: Anterior (A) and posterior (B) projection MRCP images reveal dilated right (long thick arrow) and left hepatic ducts (short thick arrow) with separate extrahepatic and intrapancreatic course and formation of ultrashort CBD (long thin arrow) just proximal to ampulla. Gall bladder (arrowhead) and cystic duct (short thin arrow) appear normal. T2 axial craniocaudal images (C, D, E & F) reveal hypointense calculi in the proximal right hepatic duct and in the ultrashort CBD.

Conclusion

Detection of variations in biliary ductal anatomy is of paramount importance as it may lead to diagnostic fallacies and ductal injury during therapeutic and surgical procedures. This case demonstrates

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Received November 25, 2014; Accepted December 22, 2014; Published December 26, 2014

Citation: Naphade P, Keraliya A (2014) Ultrashort Common Bile Duct – A Novel Biliary Variant. OMICS J Radiol 3: 175. doi:10.4172/2167-7964.1000175

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the extreme low union of right and left hepatic ducts just prior to the ampulla with formation of ultrashort CBD. Further cystic duct opening in right hepatic duct is very rare. To the best of authors' knowledge, ultrashort CBD is a novel finding and has not been described in literature.

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