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CLASSICS IN ABDOMINAL RADIOLOGY

Double-barrel shotgun sign

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Dilated common bile duct (CBD) of the same size as the portal vein at the porta was classically described as the "shotgun sign" (Figure 1) [1]. Dilated intrahepatic biliary radicles within the liver parenchyma adjacent to the portal vein branches also gives the "double barrel shotgun" appearance (Figure 2); it is also known as the "parallel channel sign" or "too many tubes sign" [2]. The double-barrel sign is a highly accurate sign for intrahepatic biliary duct dilatation [3]. The dilated biliary tree and portal vein branches

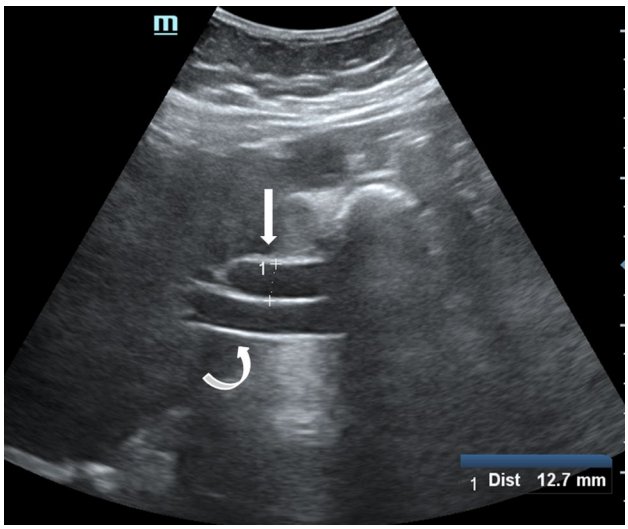

Fig. 1 Sagittal oblique sonogram image showing dilated common bile duct (straight arrow) and the portal vein (curved arrow) at the porta—Shotgun sign

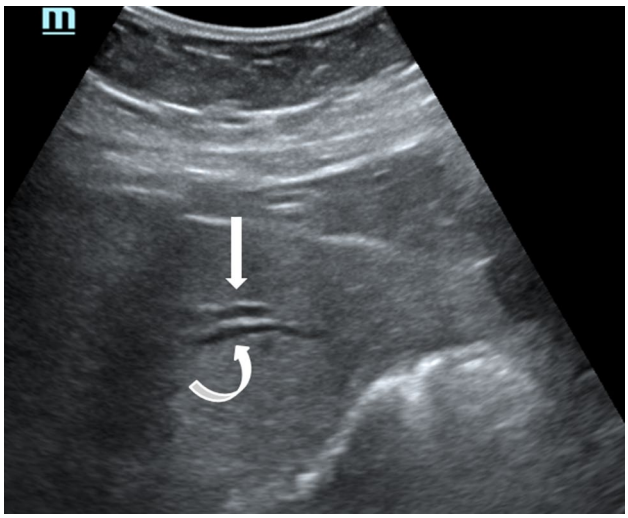

Fig. 2 Transverse sonogram image in this patient with terminal common bile duct stricture showing dilated intrahepatic biliary radicle (straight arrow) and adjacent to the portal vein branch (curved arrow) within the left lobe of liver—"double barrel shotgun" appearance or "parallel channel sign"

Fig. 3 Photograph showing a double-barrel shotgun used by the US marine positioned first on this image. (Source: https://upload.wikimedia.org/wikipedia/commons/6/6e/USMC-05459.jpg)

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resemble the barrels of the over-and-under designs of the modern double-barrel shotgun (Figure 3)[3]. Enlarged hepatic arteries within the substance of the liver may give false-positive "double barrel shotgun" appearance on gray scale ultrasound, but color Doppler easily differentiates the biliary tree and the hepatic arteries [3, 4]. Subcostal oblique view of the porta hepatis is quite sensitive for detection of dilatation of the intrahepatic bile ducts [4]. Double-barrel sign on ultrasound should prompts a detailed evaluation for an obstructing lesion along the biliary tree.

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Compliance with ethical standards

Conflict of interest Author declares that they have no conflict of interest.

Ethical approval This article does not contain any studies with animals performed by any of the author(s). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from individual participant included in the study.

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