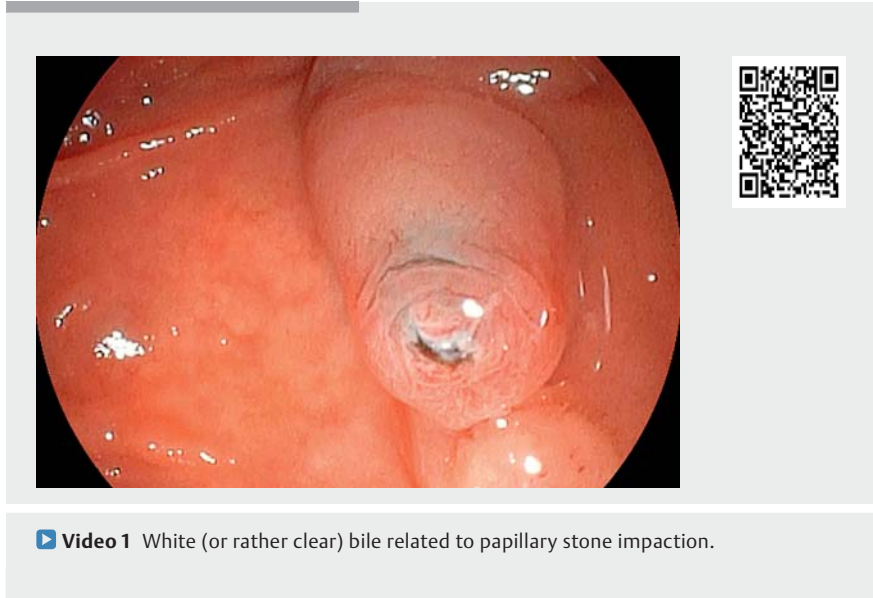


White (or rather clear) bile related to papillary stone impaction

As a typical misnomer, “white bile” refers to a translucent, “clear” aspect of the bile fluid largely devoid of bilirubin and bile acids, and has traditionally been linked to malignant biliary obstruction [1]. By contrast, its occurrence in short-term, albeit high-grade biliary obstruction related to papillary stone impaction has not been specifically reported.

A 59-year-old woman underwent urgent endoscopic retrograde cholangiopancreatography. She had undergone laparoscopic cholecystectomy due to acute cholecystitis 3 days earlier. At the time, transabdominal ultrasound indicated marked wall thickening of a stone-containing gallbladder, while the common bile duct (CBD) was not dilated and liver enzymes were in the normal range. After an initial uncomplicated postoperative course, the patient experienced significant recurrent right abdominal quadrant pain with marked increases in cholestasis and inflammation parameters (bilirubin 3.9 mg/dL, alanine aminotransferase 546 U/L, gamma glutamyl transferase 799 U/L), and CBD width increased to 13 mm. Duodenoscopy indicated papillary stone impaction with exuberant edema (► Fig. 1 a). A primary needle-knife excision (NKE) of the impacted stone under marked pressure was performed with minor putrid secretions initially visi-



► Video 1 White (or rather clear) bile related to papillary stone impaction.

ble (► Fig. 1 b, ► Video 1). Following this, copious amounts of clear, colorless bile fluid emptied abundantly into the duodenum (► Fig. 1 c). Residual bile duct stones and/or cystic duct leakage were ruled out on cholangiogram.

Available data concerning putative pathomechanisms causing bile fluid to become lighter in color attribute a decisive role to an anatomic and/or functional lack of a gallbladder in communication, potentially decompressing the biliary system and concentrating bile fluids (“black

bile”). In line with the presented scenario, excessively high intrabiliary pressure levels in conjunction with continuous mucus secretion by biliary epithelium may, in addition, reverse bile flow into lymphatics and/or the liver [2]. Finally, albeit unproven, “white” or rather “clear bile” is considered particularly prone to infectious complications due to reduced antimicrobial capacities [3].

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► Fig. 1 Endoscopy images. **a** Duodenoscopy illustrated papillary stone impaction with marked edema. **b** Primary needle-knife excision of the stone without prior biliary cannulation. **c** Abundant drainage of translucent, clear bile fluid following stone passage.

Competing interests

None

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