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"White bile" as a result of a malignant bile obstruction

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An 87-year-old woman was admitted for endoscopic retrograde cholangiopancreatography (ERCP) for obstructive jaundice. On admission, total bilirubin was 15 mg/dL at the expense of direct bilirubin, GOT 356 U/L mg/dL, GPT 174 U/L, FA 2358 U/L, GGT 1089 U/L. The ERCP showed a prominent, irregular, non-cannulable papilla, so a fistulotomy was performed, emanating clear, non-mucous fluid. After inserting the guidewire, biliary localisation was verified. Cholangiography showed dilatation of the intra-extra hepatic bile duct (common bile duct 18-20 mm). An uncoated metal prosthesis was implanted and a biopsy was performed, confirming papillary adenocarcinoma.

White bile is a colourless, translucent fluid, low in bilirubin and bile acids, which can be observed when there is a bile duct obstruction of usually malignant origin (50%), described in the early 20th century.

The mechanisms of formation are unclear. It has been observed in patients with biliary obstruction regardless of the location of the obstruction and whether or not they have undergone cholecystectomy[1]. Experimental animal studies have shown that bile flow in obstructed bile ducts is maintained up to a certain pressure level, above which the flow decreases and stops, resulting in reverse flow and regurgitation into the blood and lymphatic vessels. At this point, the cholangiocytes secrete colourless fluid that lacks bilirubin and bile acids, which replaces the pigmented bile. White bile in patients with unresectable malignant obstruction is an independent predictor of worse prognosis[2] and increased risk of infection[3] .

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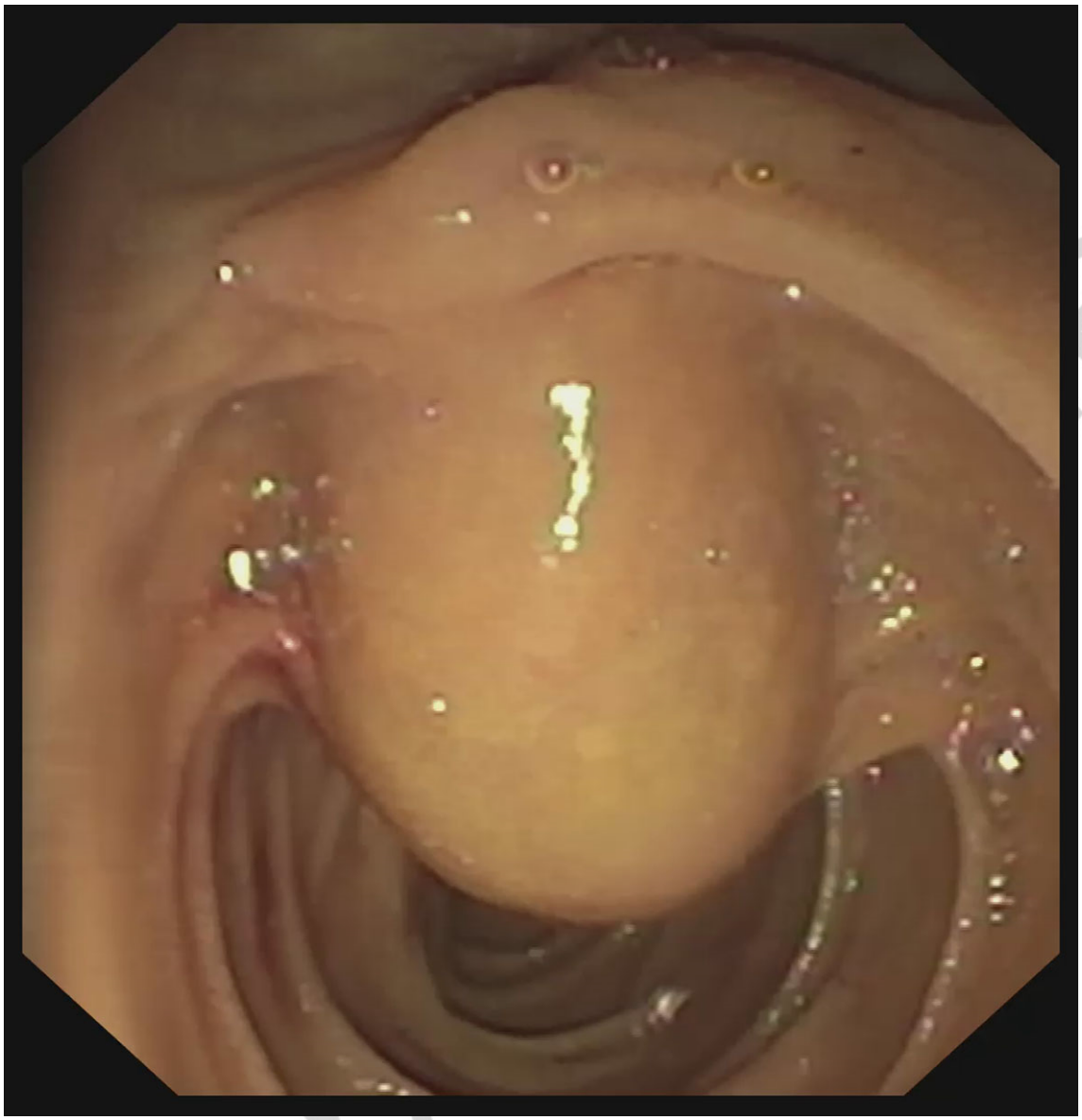

Figure 1 Prominent or "pregnant" papilla that typically occurs in distal obstructions.

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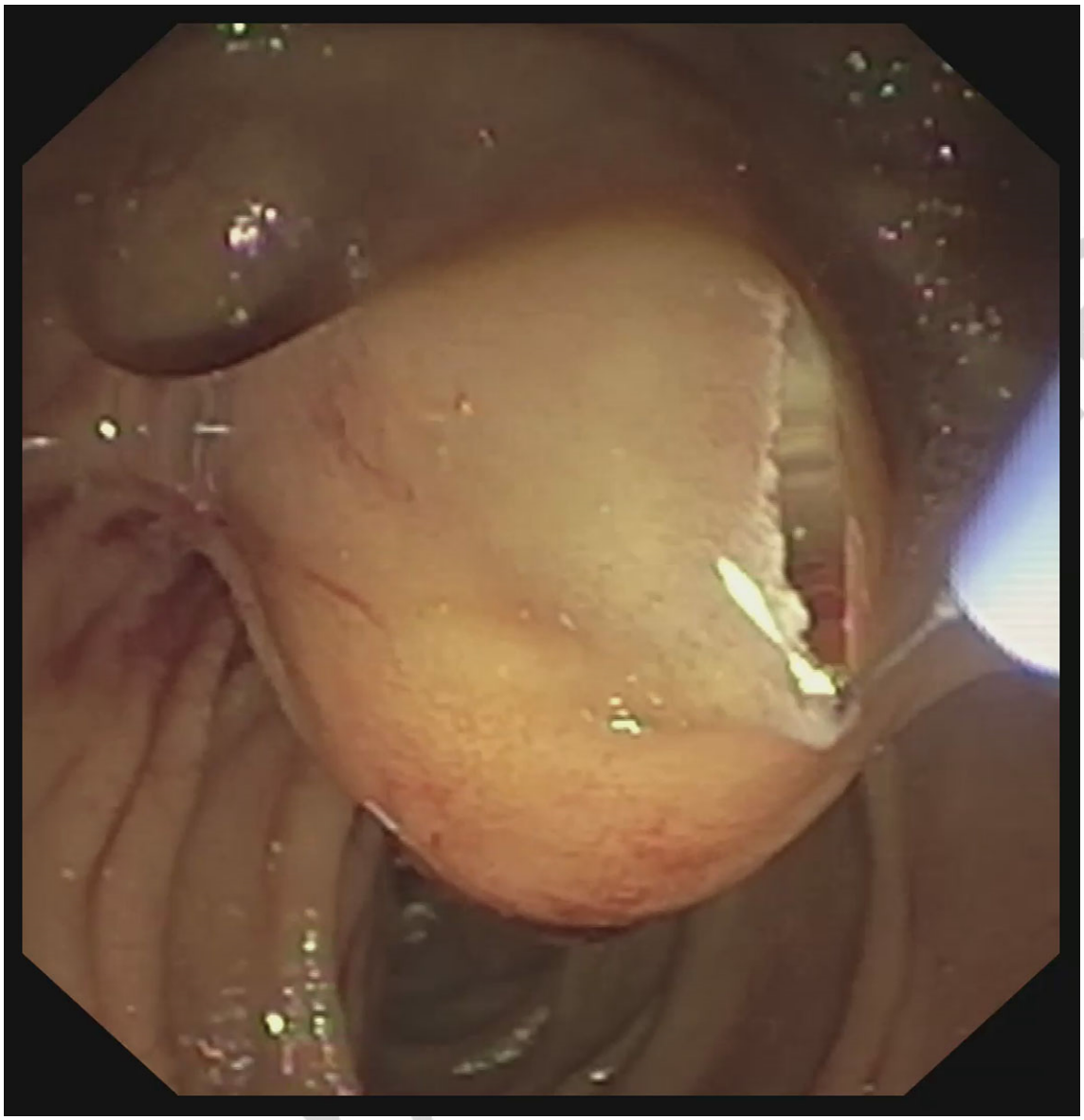

Figure 2 Presence of clear bile coming out of the incision with a liquid appearance, which differentiates it from mucus.