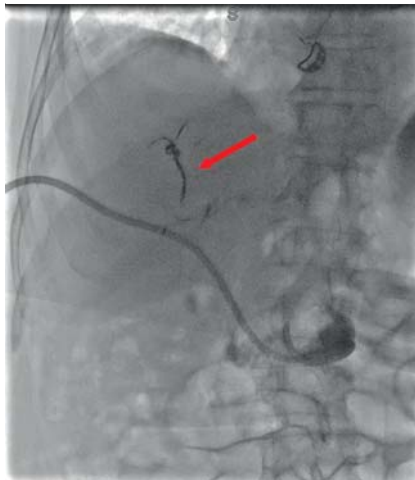


A surprising case of a biliary tumor-like lesion



► **Fig. 1** Computed tomography scan showing dilation of intrahepatic bile ducts and nodular hilar tissue (red circle).



► **Fig. 2** Radiological imaging of internal-external percutaneous biliary drainage. Arterial embolization (arrow) to treat the post-procedural active bleeding from a pseudo-aneurysm of the hepatic artery.



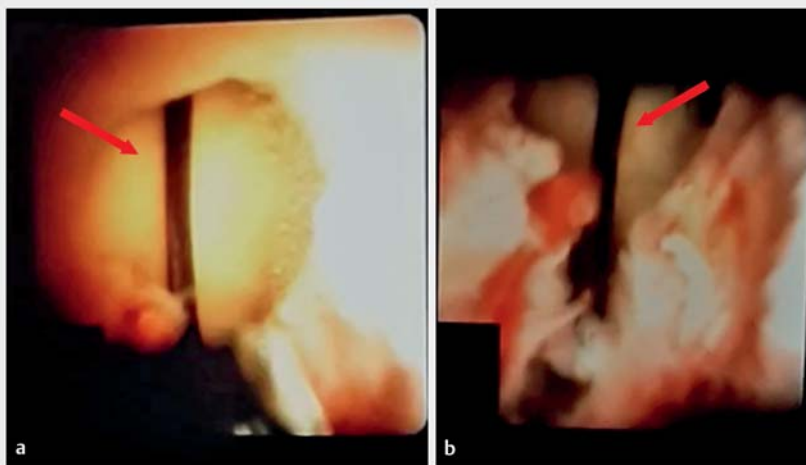
► **Fig. 3** Percutaneous cholangioscopy performed in the radiological theater.

A 74-year-old man referred to our institute complained of asthenia and jaundice associated with altered laboratory liver tests. The patient's history included cardiopathy, dyslipidemia, arterial hypertension, and partial gastrectomy with Billroth II reconstruction due to a peptic ulcer. Abdominal ultrasound showed dilation of intrahepatic bile ducts associated with hepatic hilar tissue, strongly suspected for hilar tumor (Klatskin type IV according to Bismuth–Corlette classification) [1–3] on computed tomography (CT) scan (► **Fig. 1**), associated with low grade intra-abdominal fluid. Neoplastic markers (carbohydrate antigen 19-9, carcinoembryonic antigen, and alpha-fetoprotein) were negative. Percutaneous transhepatic-cholangiography with brushing and biliary internal-external 10-Fr drainage placement was considered the best option. Cytology examination was inconclusive.

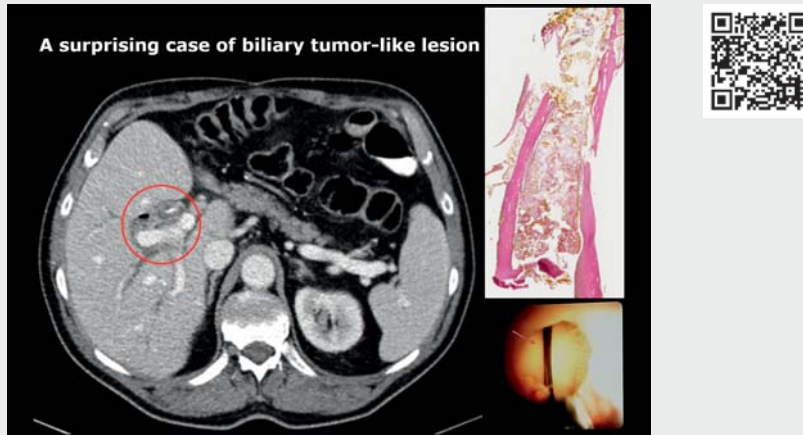
A post-procedural intrahepatic bleed from a pseudo-aneurysm of a branch of the hepatic artery caused an intrahepatic hematoma, solved by arterial embolization and percutaneous drainage (► **Fig. 2**). Later we performed an antegrade cholangioscopy through the percutaneous access. Cholangioscopy showed a papillary, friable, and angiogenetic tissue at the hilar site, which was sampled. Surprisingly, histologic examination

showed only inflammatory tissue. A second percutaneous cholangioscopy was performed in the radiologic theater (► **Fig. 3**) and an unexpected image appeared: a hard, brownish, oblong 17-mm formed papillary tissue, so it was gently ex-

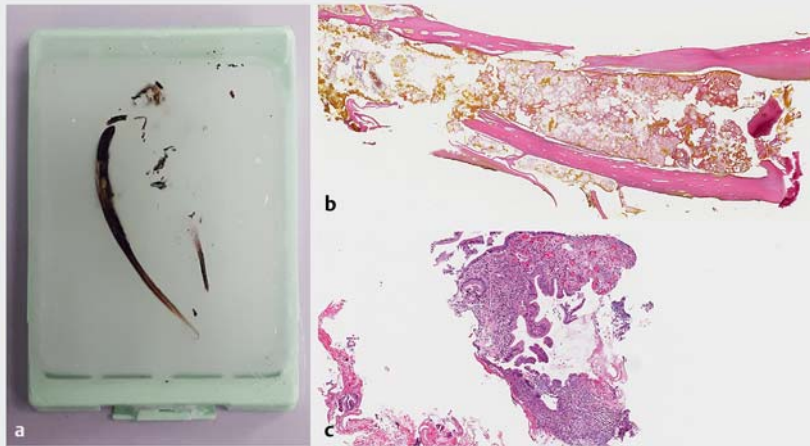
tracted using a forceps for foreign bodies (► **Fig. 4**, ► **Video 1**). On macroscopic evaluation it appeared as a fishbone; the histology showed an animal origin (vimentin dye negative) and mineral consistency comparable to a chicken bone (► **Fig. 5**). The histology on the hilar tissue identified inflammatory tissue without any sign of dysplasia/neoplasia, compatible with a foreign body reaction. The



► **Fig. 4 a, b** Endoscopic views of the hard, brownish, and oblong foreign body (arrows) embedded in the papillary hilar tissue.



▶ Video 1 Video showing how percutaneous cholangioscopy with biopsy is fundamental in differential diagnosis of hilar biliary tumors. A foreign body was identified and removed with forceps. The tissue covering the foreign body was sampled and the histology examination showed a mineral consistency comparable to a chicken bone.



▶ Fig. 5 **a** Fishbone-shaped foreign body after extraction. **b** Hematoxylin staining at 40 × magnification showing an animal origin and a mineral consistency. **c** 80 × magnification showing granular tissue adhered to the foreign body.

patient fully recovered after removal of biliary drainage, and the cholangiography showed a more regular hilar biliary tree with normal bile and contrast outflow. After 6 months of follow-up the patient did not complain about any other symptom and imaging did not show signs of malignancy.

Endoscopy_UCTN_Code_TTT_1AR_2AK

Competing interests

The authors declare that they have no conflict of interest.

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Endoscopy
DOI 10.1055/a-1759-2377
ISSN 0013-726X
published online 2022
© 2022, Thieme. All rights reserved.
Georg Thieme Verlag KG, Rüdigerstraße 14,
70469 Stuttgart, Germany