

## An iatrogenic hepatic subcapsular biloma successfully treated by percutaneous drainage and endoscopic biliary stenting



**Fig. 1** A percutaneous transhepatic cholangiogram of the right hepatic lobe performed at the referring hospital.



**Fig. 2** Abdominal computed tomography showed thickening of the gallbladder wall (arrows) and a large subcapsular biloma (arrowheads) anterior and posterior to the right lobe of the liver.



**Fig. 3** Magnetic resonance cholangiopancreatography revealed the large hepatic subcapsular biloma as a high-intensity area around the liver.

A 65-year-old man presented to hospital with complaints of appetite loss and abdominal pain. Abdominal computed tomography demonstrated a tumor of the gallbladder and dilatation of intrahepatic bile ducts. Although he was not jaundiced, he was suspected to have a malignant hilar biliary stricture, and percutaneous transhepatic cholangiography was performed on the right lobe of the liver with placement of a drainage catheter (● Fig. 1). Cytological examination of the bile revealed adenocarcinoma.

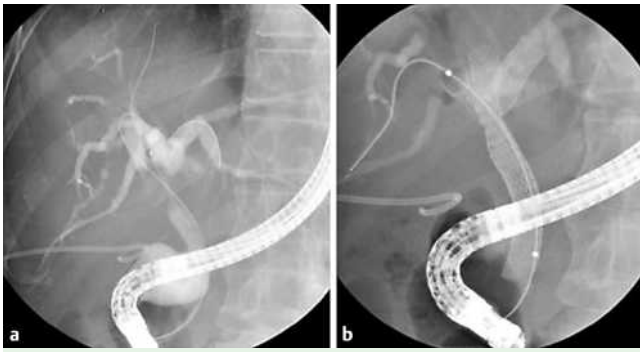
Unfortunately, 5 days after the catheter was placed it was accidentally removed and the patient was referred to our hospi-

tal. Abdominal computed tomography and magnetic resonance imaging showed a diffuse hepatic subcapsular fluid collection, which was considered to be an iatrogenic biloma (● Fig. 2, 3). A percutaneous catheter was placed in the biloma under ultrasound and fluoroscopic guidance. Because abdominal computed tomography had revealed multiple nodules in the peritoneum, the patient was diagnosed with unresectable gallbladder carcinoma due to peritonitis carcinomatosa. Endoscopic retrograde cholangiographic examinations showed a Bismuth type IIIa hilar biliary stricture (● Fig. 4a). We then performed a three-branched partial

stent-in-stent deployment using JoStent SelfX stents (Abbott Vascular Devices, Redwood City, California, USA) (● Fig. 4b) [1]. Once the metallic biliary stents were in place, abdominal computed tomography showed marked resolution of the biloma, and the percutaneous drainage catheter was then removed (● Fig. 5) and the patient was treated with gemcitabine chemotherapy.

Biloma, defined as an encapsulated collection of bile outwith the biliary tree, occurs secondary to traumatic or iatrogenic injury in most cases [2]. It has been reported that bilomas can be treated by percutaneous catheter drainage and/or endoprosthesis placement [3,4]. Particularly useful in patients with malignant biliary obstruction, the deployment of metallic biliary stents can also facilitate closure of the intrahepatic biliary duct injury that caused the biloma.

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**Fig. 4 a** Endoscopic retrograde cholangiography showed a type IIIa hilar biliary stricture. **b** Three JoStent SelfX stents were placed. These stents were deployed in the left intrahepatic bile duct, the right posterior branch, and the right anterior branch, in a three-branched configuration.



**Fig. 5** Abdominal computed tomography showed complete resolution of the biloma on day 23 after the stents were placed.

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