Clinical History:

The patient underwent left hepatectomy for colangiocarcinoma. Later during the same year she presented a recurrence of illness which was treated with transarterial chemoembolisation with LUF-beads (TACE). She did not show any symptoms after the procedure.

Imaging Findings:

CT images performed after TACE procedure showed chemoembolic beads leaving the site of the lesion through a branch of the hepatic artery. CT control one month after the percutaneous procedure showed a cystic hypodense mass (3.5 cm) at the same site, along the branch of the hepatic artery, without any contrast enhancement.

Discussion:

Transcatheter arterial embolisation (TACE) with anti-cancer agents is a frequent and relatively safe treatment used for hepatic cancer thanks to peculiar dual vascularisation of the liver via the hepatic artery and the portal vein. Main complications include hepatic failure, liver infarction or abscess, intrahepatic biloma and cholecystitis [1].

A biloma is an intrahepatic encapsulated bile collection outside the biliary tree [2, 3]. Its pathogenesis after TACE is not completely understood but the most likely mechanism is the peripheral bile duct necrosis and wall destruction caused by ischaemia and subsequent bile leakage. The ischaemic damage is due to the occlusion of the peribiliary capillary plexus from chemoembolisation agent (<60 μm) or chemical arteritis, causing the bile duct's only blood supply to stop [1, 4, 5].

Main risk factors for biloma formation after TACE is the tumour size, its localisation, especially if it is close to major bile ducts [6], presence of stenosis of the extrahepatic bile duct that can cause bile stasis and cholangitis, multiple procedures in a short period, injections of anti-cancer drugs, and metastatic nature of the hepatic tumour [4, 5].

Bilomas are usually asymptomatic or paucisymptomatic and diagnosis is usually made with clinical parameters, clinical history and symptoms and confirmed with imaging studies [7].

Sonography is useful for biloma identification: they appear as a cystic, encapsulated mass within the liver and contiguous to the biliary tree. Abdominal CT is the gold standard examination: it shows a well-defined or slightly irregular cystic mass without septa or calcifications. The pseudocapsule is not readily identifiable but in some cases there is an encapsulating rim that may enhance after administration of intravenous contrast medium [2, 7]. Most bilomas contain low-density fluid which is usually less than 20 HU but their density might be higher if there is blood or exudate. At MRI they usually appear to be intense on T1-weighted images and hyperintense on T2-weighted images [8]. Differential diagnosis includes Caroli's disease, biliary cystoadenoma or cystoadenocarcinoma, metastases, inflammatory abscess, hydatid cyst and other focal liver lesions. With CT or MRI images it is possible to
study the lesion characteristics such as its size, presence of the wall, septa, calcifications, internal nodules, enhancement pattern and the signal intensity, which allows, together with clinical information, to reach the final diagnosis. Usually bilomas resolve spontaneously and they do not need any treatment, occasionally they can increase in size or progress in infected abscess [2] requiring antibiotic therapy and percutaneous drainage or surgery [4].

**Differential Diagnosis List:** post-TACE biloma, Hepatic cyst, Bile duct hamartoma, Caroli disease, Undifferentiated sarcoma, Biliary cystadenoma or cystadenocarcinoma, Hepatocellular carcinoma, Cavernous haemangioma, Cystic metastases, Metastases from ovarian cancer, Abscess, Hydatid cyst, Subcapsular pseudocyst, Intrahepatic haematoma

**Final Diagnosis:** post-TACE biloma

**References:**


Figure 1

Description: CT images after TACE procedure showing LUF-beads leaving the site of the lesion through a branch of the hepatic artery. 

Origin: Department of Radiology, University of Pisa, Italy.
Description: CT images after TACE procedure showing LUF-beads leaving the site of the lesion through a branch of the hepatic artery. Origin: Department of Radiology, University of Pisa, Italy
Description: CT images after TACE procedure showing LUF-beads leaving the site of the lesion through a branch of the hepatic artery

Origin: Department of Radiology, University of Pisa, Italy
Description: CT control after one month with and without iv contrast

basal phase Origin: Department of Radiology, University of Pisa, Italy
Description: arterial phase Origin: Department of Radiology, University of Pisa, Italy
Description: venous phase
Origin: Department of Radiology, University of Pisa, Italy
Description: multiplanar reconstruction, sagittal plane

Origin: Department of Radiology, University of Pisa, Italy
Description: coronal plane  
Origin: Department od Radiology, University of Pisa, Italy
Description: coronal plane Origin: Department of Radiology, University of Pisa, Italy