Dear Editor:

Bilemia and bile pulmonary embolization (BPE) are very uncommon and practically always associated to liver traumatism (1-6). We present a case of non-traumatic BPE secondary to calculous cholecystitis, which—as far as we know—has not been previously described.

Case report

A 57-year-old woman—in pharmacological treatment of depression and arterial hypertension—was found dead in her house. Four days before she had consulted for non-specific abdominal pain in an emergency room, starting treatment with anti-inflammatories.

Autopsy findings: Aside to obesity (CMI 34.9 kg/m²), the only significant finding was that the gallbladder was enlarged, markedly dilated, and with a large combined gallstone impacted in the neck (4.5 x 2.5 cm). Its wall was thickened, and the mucosa hyperaemic with focal hemorrhage. There were not suppurative exudates, perforations, abscess, fistulas or peritonitis. The common bile duct was permeable. Toxicological testing revealed benzodiazepines, mianserin, ibuprofen and ketoprofen in therapeutic concentrations.

Microscopic findings: Bile emboli were identified in lungs (small arteries, arterioles and alveolar capillaries) (Fig. 1), liver (portal veins and sinusoids), gallbladder mucosa and spleen. Numerous fibrin thrombus and neutrophils were present in the lungs and liver. Focal necrosis of hepatocytes, leukocytosis in the hepatic sinusoids and occasionally cholesterol emboli in the lungs were seen. The gallbladder showed gangrenous cholecystitis and bile aggregates and cholesterol clefts adhered to the mucosa.

These findings are consistent with disseminated intravascular coagulation, bile embolism and probable sepsis.

Discussion

About 50 cases of bilemia and less than 20 of BPE have been reported in the medical literature, however, subclinical bile embolism may occur more commonly (1-6). Practically in
all the cases, BPE is consequence of the combination of an underlying pathology, which produces cholestasis and higher pressure in the biliary system than in the hepatic vein; and a liver trauma which creates a biliary-vascular communication (biliary-venous fistula) (1-3).

The most common underlying pathology is tumoral: Pancreas head, ampullary or common bile duct carcinoma (1-3), and less frequently cholecystitis (4). The hepatic trauma is usually iatrogenic: Percutaneous transhepatic cholangiodrainage and cholangiography (the most frequent), liver needle biopsy, surgical manipulation or radiofrequency thermoablation (1-4). Only in three cases (two of purulent cholangitis with hepatic abscess and one of common bile duct obstruction by metastatic carcinoma) liver trauma was not mentioned (5,6).

In the present case there was not cholestasis nor hepatic damage or injury, but we found an obstructive calculus that raised intraluminal pressure. This condition associated to necrosis of the mucosa and inflammation related alterations (vasodilatation and increase vascular permeability) could have favored the entrance of bile into the systemic circulation, through gallbladder submucosa vessels or through the posterior wall of the gallbladder, whose venous drainage reaches directly the liver parenquima. An occult or microscopic perforation of the gallbladder to an adjacent vein cannot be excluded. The pharmacological treatment could explain the absence of symptoms.

BPE can be an incidental finding in patients with cholestasis or can cause clinical signs of pulmonary embolization, such as pulmonary hypertension, acute right heart failure (1). In the present case, death could be due to pulmonary emboli and/or endotoxic shock.

The possibility of BPE has to be kept in mind in patients with pulmonary embolism symptoms after diagnostic or surgical manipulation of the liver or biliary tract. However, according with this report, BPE can be secondary to biliary tract infection without medical manipulation.

B. Morentin, B. Aguilera1, V. Portugal2, M. P. Suárez-Mier1 and J. F. Arnaiz

Section of Pathology. Institute of Forensic Medicine. Bilbao, Spain. 1Section of Histopathology. National Institute of Toxicology and Forensic Sciences. Madrid, Spain. 2Department of Digestive Surgery. Hospital of Galdakao, Bilbao, Spain

References