

Single Case

Infected Biloma after Endoscopic Ultrasound-Guided Fine-Needle Aspiration

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Keywords

Biloma · Endoscopic ultrasound-guided fine-needle aspiration · Percutaneous drainage

Abstract

Biloma is a severe complication that can result from bile duct disruption or hepatic trauma. It can occur after biliary surgery such as cholecystectomy or an endoscopic retrograde cholangiopancreatography manipulation and endoscopic biliary sphincterotomy. We present the case of a 59-year-old man admitted for jaundice, with pain in his right flank and fever, 10 days after an endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) for an ill-defined pancreatic lesion, associated with an infected biloma. Severe complications can occur after an EUS-FNA; therefore, this diagnosis should not be neglected after the intervention in symptomatic patients, to ensure an early and proper treatment.

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Introduction

A biloma is a severe complication that can result from bile duct disruption or hepatic trauma. It was first described by Patel and Gould [1] in 1979. It is defined as an abnormal, well-circumscribed, extra-biliary collection of bile and is associated with significant morbidity and mortality, especially when infected. Bilomas can occur after a biliary surgery

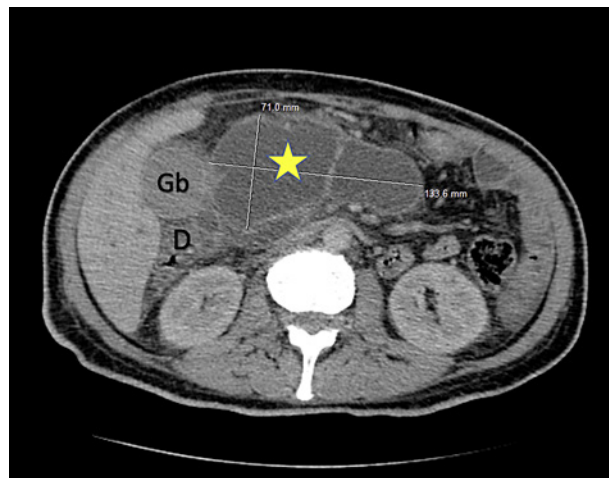


Fig. 1. Abdominal CT scan showing a large biloma: Abdominal axial nonenhanced CT scan image showing a large peri-duodenal liquid collection, measuring: 137 × 15 cm (yellow star). Gb, gallbladder; D, duodenum.

(cholecystectomy), an endoscopic retrograde cholangiopancreatography (ERCP) manipulation, and endoscopic biliary sphincterotomy. Ultrasound, computed tomography (CT), magnetic resonance cholangiopancreatography, or hepatobiliary cholescintigraphy can be used to assess the diagnosis. We describe the case of a 59-year-old patient presenting an infected biloma 10 days after an endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) for an ill-defined pancreatic lesion.

Case Presentation

A 59-year-old-man with a history of smoking (20 packs/year) and alcohol drinking (1 drink per day for 17 years) was admitted for progressive worsening jaundice with tea-colored urine, clay-colored stools, and marked weight loss (10 kg in 3 months, representing 15% of his body weight). His clinical examination revealed a conscious, afebrile patient, with normal vital signs and a frank jaundice; his abdomen was not distended, and no hepatomegaly or large gallbladder was palpable. Laboratory tests performed, when admitted in our ward, revealed a cytotoxicity with aspartate aminotransferase = 188 UI/L and alanine transaminase = 256 UI/L; a cholestasis with alkaline phosphatase = 893 UI/L, γ -glutamyltransferase = 1498 UI/L, total bilirubin = 268 mg/dL, and direct bilirubin = 180 mg/dL; and C-reactive Protein = 62 mg/dL. We performed a thoracoabdominal CT scan that showed a dilation of the main biliary tract and intrahepatic biliary tracts without any visible obstacle and no other anomaly. A complementary cholangiopancreatography MRI showed a double duct sign with a solid mass in the biliopancreatic junction, measuring approximately 2 cm. To establish a conclusive diagnosis and to decompress the biliary tract, EUS-FNA and ERCP were performed, and the EUS-FNA found an ill-defined hypoechoic tumor in the head of the pancreas invading the duodenal papilla, to which, we performed four passes with a 22-gauge needle, with no immediate bleeding noted from the puncture after withdrawal of the needle. Unfortunately, cytopathological evaluation of the EUS-FNA specimens was nonconclusive. Ten days after the procedure, the patient developed fever with constant abdominal pain. Clinical exam revealed a thickening in his right flank with signs of peritoneal irritation associated with a biological inflammatory syndrome. We performed an abdominal CT scan (shown in Fig. 1), revealing a large peri-duodenal collection (13 × 7 × 15 cm), to which a percutaneous scan-guided drainage was successfully made. The drainage depleted approximately 2 L of a purulent biliary fluid (shown in Fig. 2) after 3 days. The bacteriological analysis results revealed a sterile liquid

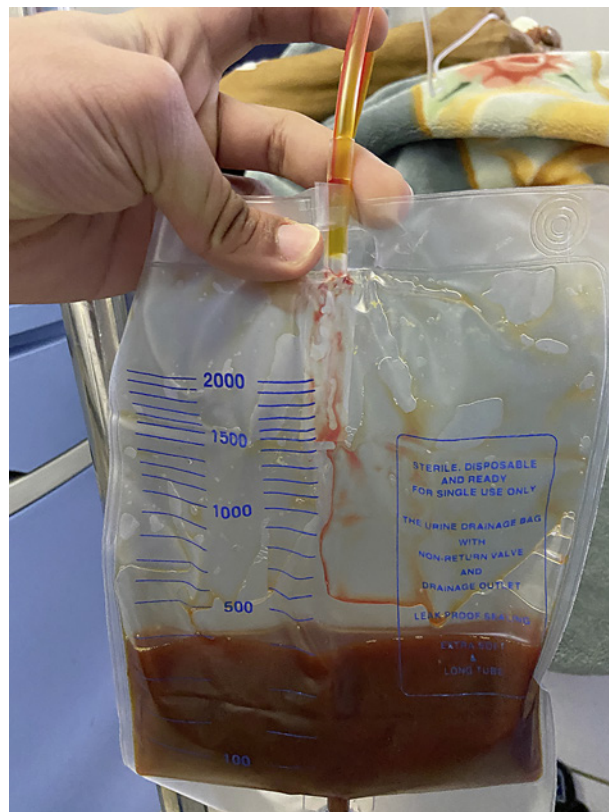


Fig. 2. Photograph of the purulent biliary fluid obtained after the drainage.

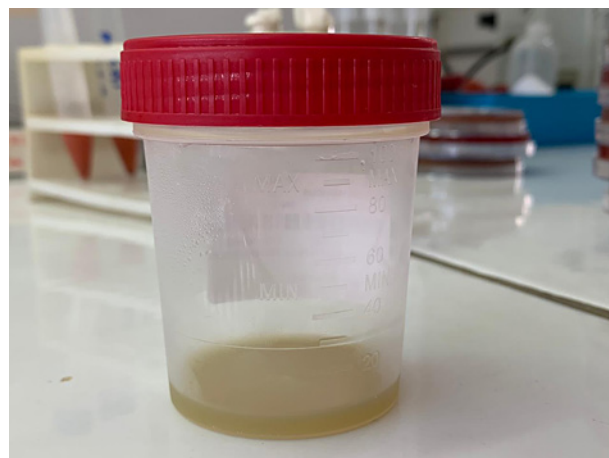


Fig. 3. Photograph of the sample sent for analysis in the laboratory of bacteriology.

(shown in Fig. 3) as the patient was under antibiotics, whereas the chemical analysis was positive for bile pigment and bile salts.

The patient underwent ERCP where a plastic stent was inserted in the common bile duct improving his condition as his jaundice and leukocytosis disappeared within a few days. Later on, the patient underwent a cephalic duodeno-pancreatectomy, and during the procedure, a 2-mm-diameter free perforation of the bile duct was found just above the superior border of the duodenum. Cytopathological evaluation of the resected specimen was suggestive of an adenocarcinoma. The patient was discharged and referred to the oncology ward for postoperative chemotherapy.

Discussion

A biloma is a well-defined, encapsulated or not, collection of bile outside the biliary tract. It is mainly caused by iatrogenic injury or any abdominal trauma involving bile duct disruption, or it can occur spontaneously. The leaking bile, by virtue of the detergent and tissue destroying action of bile acids, creates a low-grade inflammation, resulting in a thin capsule or adhesions resulting in an isolated collection called biloma [2] that can reach in some rare cases a large size.

Bile leaks are frequently associated with infections, causing the patient abdominal pain, nausea, vomiting, or abscess formation, resulting in a deterioration of the patient's state. The clinical history and the CT findings often establish the diagnosis. While they can resolve spontaneously, bilomas require a multidisciplinary approach when they become symptomatic. Due to a high morbidity rate, the need for surgical treatment has decreased and has been replaced with interventional endoscopy (ERCP and EUS-guided drainage) and interventional radiology. Indeed, percutaneous biliary drainage has been proved to be a safe and reliable method for the diagnosis and treatment of postoperative bile leaks [3].

EUS-FNA has become, since its introduction in 1992, a commonly performed endoscopic procedure [4], with numerous reports describing the diagnostic performance and safety of EUS-FNA with various types of lesions, which has led to its broad acceptance among endoscopists as an ideal diagnostic modality for pancreatic lesions [5]. The overall complication rate of EUS-FNA is approximately 0–2.5%, while the mortality rate is approximately 0.1–0.8%. The most frequent complications are hemorrhage, acute pancreatitis, secondary infection, pneumoperitoneum, and peritoneal dissemination. Several less common adverse events have also been described, including pancreatic, mediastinal, intrapulmonary, hepatic, biliary, and gallbladder lesions [6]. Bile duct perforation followed by an infected biloma is an EUS-FNA complication that has not been described yet in the literature. Diagnosis was retained through radiological exclusion of the most common complications, such as: internal bleeding, pancreatitis, and bowel wall perforation, and diagnosis was confirmed by percutaneous CT guided aspiration with biochemical tests revealing the presence of bilirubin. The prolonged examination time, the number of passes performed (four), and the close proximity of the tumor to the distal bile duct may have contributed to the occurrence of this complication.

All in all, EUS-FNA plays an important role in the diagnosis of numerous lesions, for instance, pancreatic lesions, and although it has a low rate of complications, some may be severe such as bile peritonitis or bilomas that can reach a very large size. Therefore, after this intervention, any clinical complaints from the patient should not be neglected as it may hide a serious underlying issue that can be diagnosed and treated at an early stage.

Statement of Ethics

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. Ethics approval was not required. The decision made by the Ethics Committee of the Faculty of Medicine and Pharmacy of Rabat, Morocco.

Conflict of Interest Statement

No potential conflict of interest relevant to this article was reported.

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Author Contributions

Dr. Benayad Aourarh and Dr. Lina Belkouchi are responsible for writing the manuscript. Dr. Ahlame Benhamdane obtained patient data. Dr. Sanaa Berrag, Dr. Tarik Adiou, Dr. Mouna Tamzaourte, and Dr. Aourarh Aziz approved the final draft submitted and provided expertise on the field. Dr. Rachida Saouab took care of the radiological aspect of the case. All the authors read and approved the final manuscript.

Data Availability Statement

All data that support the findings of this study are included in this article.

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