Hepatic Hematoma After Endoscopic Retrograde Cholangiopancreatography in a Patient with Mirizzi Syndrome: Case Report and Summary of Literature

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Abstract

Endoscopic Retrograde Cholangiopancreatography (ERCP) is currently the most widely used minimally invasive technique for diagnosing and treating biliary and pancreatic diseases. Although uncommon, subcapsular hematoma is a known cause of morbidity with only 63 cases documented in literature. We present the case of a 43-year-old Mexican woman who immediately presented with pain and anemia after undergoing ERCP for obstructive jaundice with suspicion of Mirizzi syndrome. She was hemodynamically stable, and the Computed Tomography (CT) showed a 205 x 148 x 77 cm subcapsular hematoma managed conservatively with crystalloid fluids, blood products, antibiotics and oral proteolytic agent. At the two-month follow up, the hematoma remained stable, and there were no signs of liver failure or compressive symptoms. Treatment selection should be based on an individual basis, adopting an approach similar to that of hepatic trauma.

Keywords: Endoscopic retrograde; Cholangiopancreatography; Hepatic subcapsular hematoma; Mirrizzi syndrome; Trypsin

Introduction

ERCP was developed in 1968 and is currently the most commonly performed minimally invasive technique for the diagnosis and treatment of biliary and pancreatic diseases. However, it has been associated with highest incidence of complications among all endoscopic procedures of the upper gastrointestinal tract [1]. Even in experienced centers, the rate of pancreatitis can be as high as 10% for pancreatitis, while for duodenal perforation can be as low as 0.08%. Mortality incidence ranges from 0.3% to 1%, especially when therapeutic procedures are involved [2,3].

Subcapsular hematoma is a rare cause of morbidity, with only 63 cases reported in literature since its first publication in 2000. Four of these resulted in a fatal outcome [1]. Diagnostic and management criteria have not yet been established. As a result, maintaining a high level of clinical suspicion and offering prompt, individualized treatment is crucial in preventing mortality. In the following section, we present a case of this uncommon condition that was presented in our unit.

Clinical Case

This is the case of a single 43-year-old Mexican woman who presented with icterus, asthenia, acholia, choluria and pruritus, accompanied by stabbing pain in the right hypochondrium two weeks after an acute episode of optic neuritis managed with systemic steroid boluses and use of cannabidiol for three days by her own decision. She had a family history of pancreatic cancer, cholelithiasis and unspecified hepatic tumors. She recently underwent a ketogenic dietary regimen and lost 14 kg in 4 months. Her blood chemistry revealed elevated levels of transaminases, alkaline phosphatase and bilirubin (2.6 mg/dl) with predominance of direct fraction (2.3 mg/dl). Coagulation tests and blood cell count (hemoglobin 14 g/dl) were normal. Echosonogram reported alithiasic cholecystitis, intrahepatic bile duct dilatation, and hepatomegaly. Based on these findings, the patient was diagnosed with drug-induced hepatitis, as jaundice spontaneously resolved. Nevertheless, the patient continued to experience and one month after the initial evaluation jaundice, recurred. A simple CT scan was performed, which showed dilatation of the intrahepatic bile duct and common hepatic duct. The gallbladder was observed to have liquid content and material of varying densities that may be indicative of non-calcified calculi or biliary sludge. Additionally, there was an image of the gallbladder protruding towards the common hepatic duct suggestive of Mirizzi syndrome and choledocholithiasis. ERCP was indicated finding a non-mobile eccentric stenosis of the common bile duct at its junction with the common hepatic and hemobilia on manipulation, coinciding with a diagnosis of Mirizzi syndrome. A 10 fr stent was implanted (Figure 1), and a brush biopsy was taken, ruling out gallbladder carcinoma. Almost immediately after the procedure the patient experienced severe pain in the right subcostal region, which...
radiated to the ipsilateral shoulder, nausea, vomiting and mucocutaneous pallor. She was then referred to the emergency department of a specialized center. Upon admission, she was hemodynamically stable, but had moderate anemia, elevated transaminases and alkaline phosphatase. Autoimmune and viral etiologies of hepatobiliary disease were ruled out. The echo-sonogram demonstrated a well-defined, irregularly shaped collection without blood-flow in the hepatic segment VII with a volume of approximately 216 cc (Figure 2). Additionally, the CT scan showed pneumobilia, perihepatic fat striation and delimited the collection without contrast enhancement, displaying hematoma-like density which involved segments VI, VII, and VIII, with dimensions of 205 x 148 x 77 cm, and a volume of approximately 1214 cc (Figure 3).

Consequently, she was admitted to the general surgery department for close monitoring and complementary diagnostic tests. Due to a 1 mg/dl drop in hemoglobin, two units of concentrated red blood cells were transfused. The patient remained normotensive and showed no signs or laboratory findings of sepsis. Antibiotic prophylaxis with meropenem was administered and the hematocrit progressively increased without the need for additional. The patient’s bilirubin levels normalized. Control ultrasounds and CT scans showed no increase in hematoma volume (Figure 4). Angiotomography excluded active bleeding. After evaluation by an interventional radiology specialist, she was determined to not be a candidate for percutaneous drainage. She was prescribed oral trypsin/chemotrypsin and discharged at 2 week for physical exam and image follow-up, pending MRI result for assessment of biliary tract morphology.

**Figure 1: ERCP image of stent placement.**

ERCP: Endoscopic Retrograde Cholangiopancreatography

**Figure 2: Liver ecsonogram showing an irregular, well-defined, heterogeneous, septated non-vascularized collection measuring 106 x 38 x 10 mm in segment VII.**

**Figure 3: Computed tomography in axial plane on admission with a subcapsular hematoma involving hepatic segments VI, VII, and VIII, measuring 205 x 148 x 77 cm. A) arterial phase B) portal phase without enhancement.**

**Figure 4: Follow-up Computed tomography in axial plane at A) one week and B) 2 months.**

**Discussion**

Endoscopic Retrograde Cholangiopancreatography (ERCP) is a preferred minimally invasive procedure for diagnosing and treating both benign and malignant hepatobiliary and pancreatic diseases. The use of this procedure is advised, with the potential risks carefully weighed against its benefits. The incidence of complications ranges from 2.5% to 8%, of which 1.67% are severe [3,4]. Mortality is higher in therapeutic ERCP at 0.4-0.5% compared to 0.2% in diagnostic ERC [5].

Clinically evident bleeding occurs in 0.1% to 2% of cases, typically at the site of sphincterotomy [6]. Subcapsular hematoma is another infrequent hemorrhagic complication, with only 63 cases published since the first in 2000 by Ortega et al [7]. The exact incidence is difficult to determine since many patients may course asymptomatic, and post ERCP follow-up imaging studies are not routinely conducted, unless indicated for other reason [8].

The pathophysiology of this condition is not fully understood, but two potential mechanisms have been proposed. The first involves direct injury to small intraparenchymal vessels caused by the guidewire tip. The second suggests a lesion caused by the balloon’s traction on the Glissonian pedicle during an attempt to remove the lithoscope [2]. Guidewire usage was mentioned in 80.3% of the reviewed publications. Nonetheless, in the remaining 19.7%, no statement was made in this regard, as in this case, being unable to ascertain the device responsible for the lesion.

García et al. reported a mean presentation age of 59 years, with a gender distribution of 58% women and 35% men. Cholelithiasis was the most common indication for ERCP.
Written informed consent was obtained following ERCP, typically presenting within 48 hours after the procedure. Early diagnosis and treatment require high suspicion and treatment should be analogous to liver trauma grade of lesion and hemodynamics along with administration of adequate antibiotic prophylaxis to avoid hepatic abscess and cholangitis. The addition of proteolytic enzymes as adjuvant therapy may constitute an area for further study to determine the effect on the risk of surgical intervention in lesions of similar or smaller volume.

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References

