Cirujano General
April-June 2018
Vol. 40, no. 2 / p. 117-121

Intraparenchymal rupture hepatic haematoma a render complication after endoscopic cholangiopancreatography. Case report

Hematoma subcapsular intraparenquimatoso hepático roto, una rara complicación post-colangiopancreatografía retrógrada endoscópica. Reporte de un caso

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Key words:
Endoscopic retrograde cholangiopancreatography, hematoma, packaging, hydrophilic, sphincterotomy.

Palabras clave:
Colangiopancreatografía retrógrada endoscópica, hematoma, empaquetamiento, hidrofílica, esfinterotomía.

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Received: 25/04/2017
Accepted: 26/02/2018

ABSTRACT

Objective: To describe a case of ruptured subcapsular hepatic hematoma as an uncommon complication of a retrograde endoscopic cholangiopancreatography. **Design:** Case report. **Description of the case:** The following case of a 49-year-old woman who developed an intrahepatic subcapsular hematoma, afte r a retrograde endoscopic cholangiopancreatography with sphincterotomy and lithium extraction. Whose procedure requires the passage of a guide (hydrophilic or metallic). Patient who has bad evolves at 48 hours with abdominal pain, in epigastrium and right hypochondrium, fever. Who enters the operating room observing the subcapsular rupture hepatic hematoma and hemoperitoneum. Packaged and later unpacked. With good postoperative evolution. The importance is to report one more case to the few that exist.

RESUMEN

Objetivo: *Describir un caso de un hematoma hepático subcapsular roto como complicación infrecuente de una colangiopancreatografía retrógrada endoscópica.* ***Diseño:*** *Reporte de caso.* ***Descripción del caso:*** *Mujer de 49 años de edad quien desarrolló un hematoma subscapular intrahepático posterior a una colangiopancreatografía retrógrada endoscópica con esfinterotomía y extracción de litos. Su procedimiento requiere el paso de una guía (hidrofílica o metálica). Paciente que muestra mala evolución a las 48 horas con dolor abdominal en epigastrio e hipocondrio derecho y fiebre. Ingresa a quirófano observándose hematoma hepático subcapsular roto en lóbulo derecho y hemoperitoneo. Se realiza empaquetamiento y lavado de cavidad, posteriormente desempaquetamiento. Con buena evolución postoperatoria. La importancia de este estudio es reportar un caso más a los pocos que existen.*

INTRODUCTION

Endoscopic retrograde cholangiopancreatography (ERCP) has been a useful method for the diagnosis and treatment of pancreatobiliary disorders for a number of years. It began as a diagnostic procedure, and is currently used also for treatment. In general terms, it has a low rate of complications, and is performed on a regular basis. It requires a sound knowledge of anatomy, as well as mastering endoscopic techniques that are not devoid of complications .[1,2]

The current rate of complications of ERCP ranges from 0.6% to 1%. Complications, in descending order of frequency, include pancreatitis, cholangitis, hemorrhage, duodenal perforation, and acute cholecystitis. The main indication is choledocholithiasis. The rate of complications varies according to the characteristics of the population involved.[2]

The first report of a hepatic hematoma as a post-ERCP complication dates back to the year 2000; several other cases were reported later on, most of them with conservative management.[3] Since it is an infrequent

complication, once diagnosed it becomes a challenge for the surgeon.

We present a case of a subcapsular hepatic hematoma than required surgical treatment, plus a review of the literature.

CASE REPORT

This was a 49-year-old female with a 20-year history of type 2 diabetes, treated with 14 units of intermediate insulin; Bartholin's cyst removal 30 years ago; Bartholin's gland marsupialization 27 years ago; internal fixation for right humerus fracture 42 years ago; unspecified spinal surgery on L1-L2 in the year 2000. Allergic to naproxen and paracetamol. The patient presented with oppressive abdominal pain that had lasted for 8 days, of moderate intensity (8/10 in the visual analogue scale). It started in the epigastric region and radiated to the right hypochondrium and the interscapular region, accompanied by nausea and vomiting of gastric contents. The patient self-medicated with oral ketorolac that provided temporary improvement; however, choluria and conjunctival jaundice appeared three days before presentation. Physical examination revealed that the patient was alert and oriented, with skin and mucosal jaundice. Mesomorph thorax with normal air entry and exit, no rales or wheezes. Heart sounds with regular rate, rhythm, and intensity, without added phenomena. Her abdomen was soft and depressible, with tenderness upon intermediate and deep palpation on the epigastric and right hypochondriac region; positive Murphy's sign; peristalsis was decreased in intensity and frequency. The limbs showed no alterations. Laboratory results included amylase 12.4 U/l, prothrombin time (PT) 12.5 seconds, partial thromboplastin time (PTT) 27.4 seconds, international normalized ratio (INR) 1.05, white blood cell count 11.180 $\times$ $10^3/\mu l$ with neutrophil count 73%, hemoglobin 16.2 g/dl, hematocrit 49.0%, platelet count 350,000/μl, sodium 133 mmol/l, potassium 3.7 mmol/l, chloride 92.7 mmol/l, total bilirubin 4.15 mg/dl, direct bilirubin 3.89 mg/dl, indirect bilirubin 0.25 mg/dl, lactic dehydrogenase (LDH) 617 U/l, aspartate aminotransferase (AST) 355 U/l, alanine aminotransferase (ALT) 576.7 U/l, glucose 158.3 mg/dl, blood urea nitrogen (BUN) 7 mg/dl, urea 15.5 mg/dl, creatinine 0.7 mg/dl. Ultrasound of the liver and bile ducts: liver in the usual anatomical location, with normal shape and size; no dilation of the intrahepatic bile ducts was observed. Dilated common bile duct, 9 mm in diameter. Distended gallbladder in the normal anatomical location, measuring 7.1 $\times$ 3.2 $\times$ 4.1 cm, with heterogeneous contents that included hyperechoic oval images, the largest one measuring 7 mm, projecting a posterior shadow. Normal pancreas and spleen. No free fluid in the abdominal cavity. Diagnosis: dilation of the extrahepatic bile duct, gallstones, fatty liver disease. Plain and contrast computed tomography of the abdomen revealed dilation of the extrahepatic bile ducts, normal intrahepatic bile ducts, presence of gallbladder stones, and no other alteration *(Figure 1)*.

ERCP was performed, with the following findings: the main bile duct was cannulated with a sphincterotome; cholangiogram with undiluted contrast medium was carried out, revealing intrahepatic and extrahepatic bile ducts 1 cm in diameter; a 9-mm filling defect was observed in the middle third of the common bile duct. Sphincterotomy and sweeping with a 5-cm^3 extraction balloon was performed, with removal of a gallstone. Postoperative diagnosis: gallstone disease resolved by ERCP *(Figure 2)*.

The patient's status did not improve; she suffered from diffuse abdominal pain, more intense in the upper half, and tenderness upon intermediate and deep palpation, with no signs of peritoneal irritation. Her vital signs were: heart rate 100, respiratory rate 21,

Figure 1: *Abdominal CT scan showing a thickened gallbladder wall.*

Figure 2: *Cholangiogram revealing a dilated common bile duct with a filing defect.*

blood pressure 100/60, temperature 37 ºC. The day after ERCP (Dec 15, 2016), results of control laboratory tests were (reference values in parentheses): amylase 189.3 (13-53 U/l), lipase 534.9 (23-300 U/l), sodium 140 mmol/l, potassium 3.5 mmol/l, chloride 99.5 mmol/l, total bilirubin 7.58 mg/dl, direct bilirubin 6.67 mg/dl, indirect bilirubin 0.91 mg/dl, DHL 504 U/l, AST 144 U/l, ALT 189.3 U/l, glucose 148.6 mg/dl, BUN 14.0 mg/dl, urea 31 mg/dl, creatinine 0.6 mg/dl. Based on the clinical picture and the laboratory results, post-ERCP pancreatitis was diagnosed and targeted therapy was initiated.

One day later (Dec 16, 2016), diffuse abdominal pain persisted; the patient was in poor general condition, with the following vital signs: heart rate 120, respiratory rate 23, blood pressure 90/60, temperature 38 ºC. Laboratory results revealed hemoglobin 10 g/dl, hematocrit 29%, leukocytosis (white blood cells 14.0 × $10^3/\mu l$), and neutrophils 88%. Due to such findings, surgery was decided upon, starting out as a laparoscopy that revealed hemoperitoneum and a hepatic hematoma, which led to turn it into open surgery. An exploratory laparotomy was performed, with cholecystectomy and gallstone removal through the cystic duct, intraoperative cholangiography, abdominal cavity lavage, and packing; only the skin was sutured. Surgical

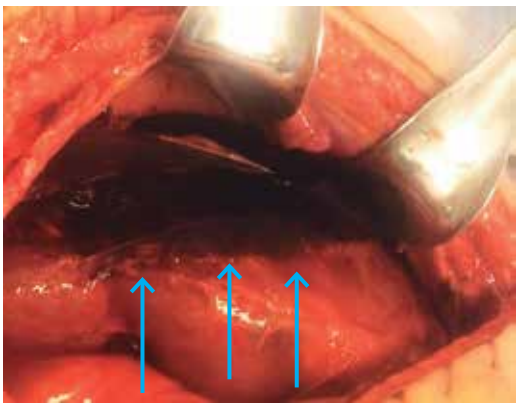

Figure 3: *Intraoperative image of the ruptured subcapsular hematoma of the right lobe (arrows).*

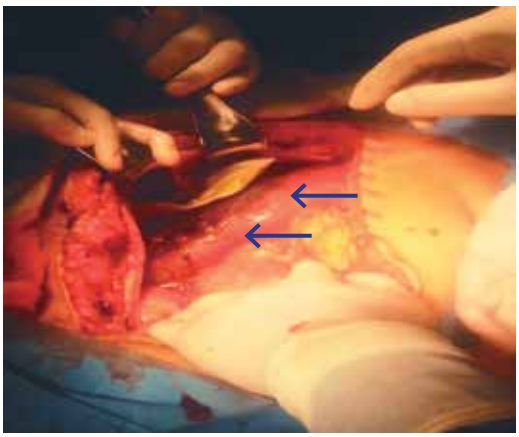

Figure 4: *Intraoperative image of the controlled ruptured subcapsular hematoma with no evidence of active bleeding (arrows).*

findings included hemoperitoneum due to a ruptured subcapsular hepatic hematoma of the right lobe, plus cholelithiasis and choledocholithiasis *(Figures 3 and 4)*. Total bleeding was 1,600 ml; two units of packed red blood cells and three units of fresh frozen plasma were transfused during surgery. Arterial blood gases revealed uncompensated metabolic acidosis. Considering the surgical and anesthetic conditions, the patient was transferred to the intensive care unit with an endotracheal tube. Four days later (Dec 20, 2016), a new exploratory laparotomy was performed for packing removal and cavity lavage; once again, the patient was transferred

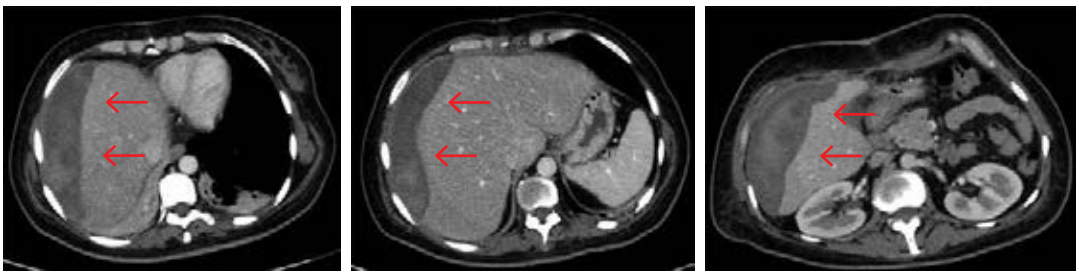

Figure 5: *Post-operative abdominal CT scan showing hematoma in segments VI, VII and part of the VIII.*

Figure 6: *Post-drainage abdominal CT scan; it shows that 80% of the hematoma was drained (arrows).*

to the ICU with an endotracheal tube. As a complication of her stay in the ICU, the patient developed ventilator-associated pneumonia (VAP); it subsided in a few days, and she was extubated. A control CT scan was performed nine days after surgery *(Figure 5)*. She was transferred to the general surgery ward 15 days after surgery, to continue her recovery, and was finally discharged three weeks later, based on her clinical improvement. During follow-up as an outpatient, she complained of fever and intermittent abdominal pain that subsided with analgesics (paracetamol). An abdominal CT scan performed six weeks after hospital discharge revealed an increase in the size of the hematoma, but with changes in density suggesting residual hematoma. Consequently, she was admitted to the general surgery ward, where computed tomography-guided percutaneous drainage was scheduled. Drainage of residual blood was uneventfully carried out *(Figure 6)*. The patient had a favorable evolution and was discharged from the hospital two weeks later.

DISCUSSION

Subcapsular hepatic hematoma is an uncommon but highly lethal complication of endoscopic retrograde cholangiopancreatography. Its frequency is less than 0.5% worldwide, although it varies. Only a few isolated cases have been reported –approximately 16–, and most of them received conservative management.[4,5]

The probable cause is an injury to small vessels due to the inadvertent rupture of the bile ducts while introducing the metallic or hydrophilic guidewire; another possible cause is high-pressure injection of contrast medium, or even the pressure caused by the extraction balloon.[5,6] According to published literature, management may be expectant with antibiotics and intravenous fluids, since these patients tend to be hemodynamically stable and seldom require surgery.[7]

In our case, as in other cases reported, persistence of pain was the reason leading to surgery. A laparoscopy revealed hemoperitoneum and a hepatic hematoma, which made it necessary to carry out a laparotomy. It was considered that the likely cause was the insertion of the guidewire. Management was consistent with what is described for this type of complication, but due to her poor status and the lack of improvement, the patient required reoperation.

Since this is an infrequent complication of ERCP, the diagnosis should be ruled out in cases with low output and poor clinical status.[7-9] The relevance of this paper is to contribute with one more case to the few

reported in the literature,[10] and to point out at this complication that should be ruled out in case of suspicion.

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