

Hemocholecyst: laparoscopic approach, case report, and review of the literature

Hemocolecisto: abordaje laparoscópico, reporte de un caso y revisión de la literatura

César Óscar Decanini-Terán,* Martín Vega-de Jesús,‡
Edwin Leopoldo Maldonado-García,§
Edgar Agustín González-Macedo,‡ Jorge Enrique Pereyra-Arzate¶

Keywords:

hemocholecystitis,
hemorrhagic
cholecystitis,
laparoscopic
cholecystectomy.

Palabras clave:

hemocolecisto,
colecistitis
hemorrágica,
colecistectomía
laparoscópica.

ABSTRACT

Hemorrhagic cholecystitis is a rare complication of acute cholecystitis. We present the case of a 77-year-old male patient with a history of ischemic heart disease, pulmonary thromboembolism, and aortic aneurysm. He was taken oral anticoagulants; he attended the emergency room for presenting abdominal pain; a computed angiogram scan reported active bleeding into the gallbladder lumen and hemoperitoneum, a four-port laparoscopic cholecystectomy was performed, with the following findings: perforated gallbladder, hemoperitoneum, and active intravesicular bleeding. **Conclusion:** hemocholecystitis is a rare pathology, and laparoscopic cholecystectomy is a safe technique for treating this pathology.

RESUMEN

La colecistitis hemorrágica es una complicación rara de la colecistitis aguda. Presentamos el caso de un paciente masculino de 77 años de edad con el antecedente de cardiopatía isquémica, tromboembolia pulmonar y aneurisma aórtico por medio de manejo con anticoagulación oral; acudió a urgencias por presentar dolor abdominal, la angiotomografía computarizada reportó sangrado activo hacia la luz de la vesícula biliar y hemoperitoneo, se realizó una colecistectomía laparoscópica de cuatro puertos, con los siguientes hallazgos: vesícula biliar perforada, hemoperitoneo y sangrado activo intravesicular. **Conclusión:** el hemocolecisto es una patología poco frecuente, la colecistectomía laparoscópica constituye una técnica segura en el tratamiento de esta patología.

* Digestive surgery,
coloproctology, and
minimally invasive.
Chief of Surgery.

‡ Colon and Rectal
Surgeon.

§ Postgraduate Course
of High Specialty in
Endoscopic Surgery.

¶ General Surgery
Resident.

ABC Medical
Center. Mexico.

Received: 07/17/2021
Accepted: 07/22/2022



INTRODUCTION

Hemorrhagic cholecystitis is a rare complication of acute cholecystitis. This entity is difficult to detect since its symptoms are easily confused with more common diagnoses.¹ It was first described in 1892 by Naunyn, although it was not until 1938 that Fiessinger and colleagues used the term hemocholecystitis. Since then, there have been only series and case reports of this pathology, with different diagnostic and therapeutic protocols.²

Despite being a rare entity, hemorrhagic cholecystitis with gallbladder perforation and hemoperitoneum has a high mortality.² Ultrasonographic findings may present as acute cholecystitis with indirect signs of complex free fluid, gallbladder fossa hematoma, and intrahepatic hemorrhage.³

PRESENTATION OF THE CASE

A 77-year-old male patient with a history of unspecified ischemic heart disease in 2001. He was managed with the placement

How to cite: Decanini-Terán CÓ, Vega-de Jesús M, Maldonado-García EL, González-Macedo EA, Pereyra-Arzate JE. Hemocholecyst: laparoscopic approach, case report, and review of the literature. Cir Gen. 2022; 44 (1): 40-43. <https://dx.doi.org/10.35366/109318>

of two coronary stents and acetylsalicylic acid. Additionally, he had a pulmonary thromboembolism in 2009, treated with acenocoumarin. He also had an aortic aneurysm treated in 2012 with an aortoiliac stent. He went to the emergency department for diffuse abdominal pain of 12 hours of evolution and an intensity 8/10 on the VAS scale, without irradiation nor exacerbating factors, and with nausea without vomiting. The patient self-medicated with butylthioscine and presented partial improvement of 6/10 on VAS scale. Physical examination showed a Glasgow score of 15, oxygen saturation at 90%, arterial hypertension of 211/116, temperature 36 °C, and respiratory rate of 13x'. He had a distended abdomen with signs of peritoneal irritation. Lab tests reported hemoglobin 18.5 g/dL (14.5-18.5), hematocrit 54.4% (42.0-50.0), leukocytes $13.9 \times 10^3/\mu\text{L}$ (4.8-10.0), platelets $170 \times 10^3/\mu\text{L}$ (150-450), PT 42.34 seconds (9.60-12.00), INR 4.33 (0.90-1.20) and TTPa 34 seconds (22-35). Due to the patient's medical and surgical history, the medical team decided to perform a computerized angiography scan. The results showed active bleeding towards the gallbladder lumen (*Figures 1 and 2*), hemoperitoneum, a permeable aortoiliac stent in normal condition, and an obliterated inferior mesenteric artery. The medical team admitted the patient to the intensive care unit for hemodynamic stabilization. The patient

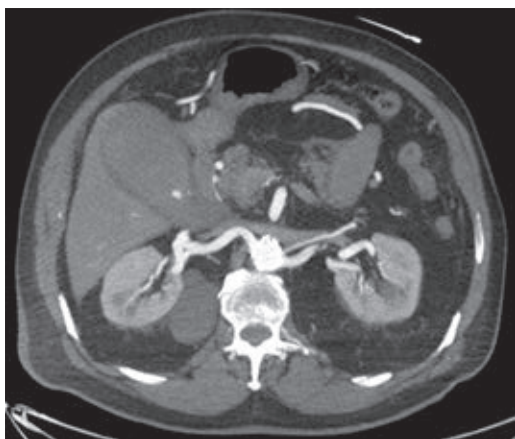


Figure 1: Axial CT scan with arterial phase contrast, showing active bleeding into the gallbladder lumen, which is distended.



Figure 2: Contrast CT scan in the venous phase, showing extravasation of the contrast medium into the gallbladder lumen.

received ix Octaprop® (coagulation factors IX, II, VII, and X), two packs of red blood cells, four plasmas, and three platelet apheresis. Two hours after admission, a laparoscopic cholecystectomy was performed.

Surgical technique

Under general anesthesia, the patient was placed in the American position; pneumoperitoneum was performed through a 12 mm trans umbilical port with open technique; a 10 mm subxiphoid port and two 5 mm working ports were placed under direct vision. A diagnostic laparoscopy found a perforated gallbladder, hemoperitoneum, and active intravesicular bleeding (*Figure 3*). Hemoperitoneum and bile were aspirated; zenithal traction of the gallbladder and cystic artery dissection and clipping with Hem-O-Lok® in the cystic artery and duct was done after critical view (*Figure 4*). The gallbladder was resected with a harmonic scalpel, and the surgical piece was removed using an endoscopic bag; the cavity was washed and aspirated. Surgicel® in the surgical bed and a Blake 19 Fr drainage were placed. The working ports were removed, under direct vision, without evidence of bleeding. The aponeurosis and skin were confronted, and the surgical act was concluded. 1,000 mL of bleeding and a surgical time of 100 minutes

were reported. After the surgical procedure, the patient exhibited a favorable postoperative evolution, successfully transitioning to the oral route on the second day. The medical team determined that the patient was ready for discharge on the fifth postoperative day. Pathology reported a gallbladder with acute perforated cholecystitis and transmural necrosis, with no evidence of malignancy.

DISCUSSION

The origin of hemoperitoneum due to gallbladder perforation can be a rupture of the cystic artery or any of its branches, transhepatic perforation of the gallbladder, and bleeding from the margins of the perforation. The presence of hemoperitoneum during gallbladder perforation is very rare.⁴

The patient with gallbladder hemorrhage may present in several ways. Blood may clot

within the gallbladder, resulting in distention of the gallbladder and possibly perforation in the abdomen, leading to peritonitis. Blood may also clot within the common bile duct, resulting in obstructive symptoms. Blood may enter the intestinal lumen, with subsequent hematemesis or melena.⁵

Pathogenesis is an acute necroinflammatory process leading to bleeding. Gremmels et al. described the pathologic findings of acute cholecystitis, which show that intramural inflammation damages the mucosa with infarction and erosion. Rupture of the mucosa may cause bleeding into the gallbladder lumen.⁶

The etiology of cholecystitis involves various factors, including gallstones (accounting for 50% of cases), anticoagulation, anti-aggregation or coagulopathy, gallbladder cancer, trauma, portal hypertension, corticotherapy, blood dyscrasias, ectopic gastric or pancreatic mucosa, and parasites.⁷

Patients receiving anticoagulant therapy have a high risk of hemorrhagic diathesis and may present with symptoms of biliary colic, hematemesis, jaundice, and melena. So, they should be considered with the possibility of hemorrhagic cholecystitis. The clinical picture of hemocholecystitis is nonspecific, and patients may present with pain in the right hypochondrium due to gallbladder distension secondary to cystic duct obstruction by blood clots.⁸

The importance of a thorough initial evaluation in patients with suspected hemorrhagic cholecystitis should be recognized, in addition to performing the indicated radiological studies that help to suspect this rare and challenging manifestation of gallbladder pathology.⁹

Ultrasound findings of hemorrhagic cholecystitis may show thickening of the gallbladder wall, intraluminal membranes, and nonmobile, non-shadowed intraluminal echogenic material. Computed tomography (CT) findings may demonstrate contrast extravasation, high attenuation within the gallbladder lumen, and fluid-fluid stratification.¹⁰

A CT scan with arterial phase can help diagnose and demonstrate the characteristic

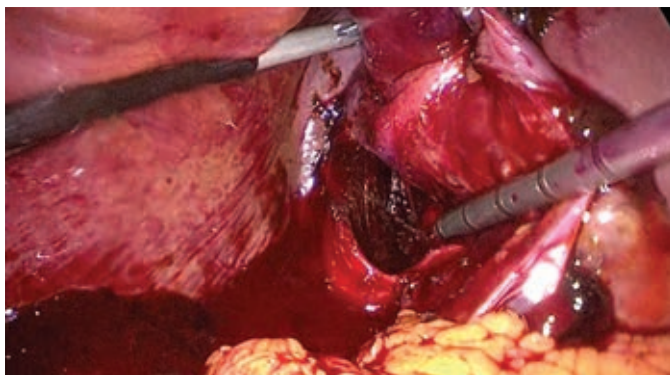


Figure 3: Laparoscopic cholecystectomy with findings of the perforated gallbladder with hemoperitoneum.



Figure 4: Laparoscopic cholecystectomy: cystic artery clipped with Hem-O-Lok®.

findings of wall thickening, distended gallbladder, and heterogeneous materials within it, in addition to active contrast extravasation into the gallbladder lumen.¹¹

Most of the literature reports cholecystectomy as the treatment for hemorrhagic cholecystitis. The literature generally recommends cholecystectomy as the treatment for hemorrhagic cholecystitis. In cases where the likelihood of associated injuries is low, laparoscopic surgical techniques have shown to be a safe option. These techniques can provide definitive treatment without increasing patient morbidity and mortality.¹²

CONCLUSION

Hemorrhagic cholecystitis with gallbladder perforation and hemoperitoneum is a rare entity in gallbladder pathology, establishing a medical challenge for the surgeon dealing with abdominal emergencies. Laparoscopic cholecystectomy is a safe technique in the treatment of this pathology.

REFERENCES

1. Kwon JN. Hemorrhagic cholecystitis: report of a case. *Korean J Hepatobiliary Pancreat Surg.* 2012; 16: 120-122.
2. Agrawal HS, Anderson RE. Hemocholecyst. A case report. *Arch Surg.* 1967; 94: 286-289.
3. Bolívar-Rodríguez M, Cázarez-Aguilar MA, Fierro-López R, Morales-Ramírez C. Hemorrhagic cholecystitis: case report and review of the literature. *Rev Chil Cir.* 2019; 71: 70-74.
4. López Pérez R, Marchena Gómez J, Flebes Molina G, Hernández Romero J. Hemoperitoneum: a rare complication of gallbladder perforation. *Rev Esp Enferm Dig.* 2004; 96: 516-517.
5. Lai YC, Tarng DC. Hemorrhagic acalculous cholecystitis: an unusual location of uremic bleeding. *J Chin Med Assoc.* 2009; 72: 484-487.
6. Morris DS, Porterfield JR, Sawyer MD. Hemorrhagic cholecystitis in an elderly patient taking aspirin and cilostazol. *Case Rep Gastroenterol.* 2008; 2: 203-207. doi: 10.1159/000135693.
7. Calvo Espino P, Chaparro Cabezas MD, Jiménez Cubedo E, Lucena de la Poza JL, Sánchez Turrión V. Perforated hemorrhagic cholecystitis. *Cir Esp.* 2016; 94: e35-e36.
8. García LDJ, Venegas EAI, Ramírez GS, Evaristo MG. Hemocolecystitis secondary to chronic cholecystitis: a case report. *Rev Esp Med Quir.* 2014; 19: 181-184.
9. Liefman D, Wullschlegler M. Hemorrhagic cholecystitis: a rare cause of presentation with upper gastrointestinal bleeding. *Int Ann Med.* 2018; 2. doi: 10.24087/iam.2018.2.5.480.
10. Sweeny A, Smith NA, Serfin JA. Hemorrhagic cholecystitis causing hemobilia and common bile duct obstruction. *J Surg Case Rep.* 2019; 2019: rjz081.
11. Tavernaraki K, Sykara A, Tavernaraki E, Chondros D, Lolis ED. Massive intraperitoneal bleeding due to hemorrhagic cholecystitis and gallbladder rupture: CT findings. *Abdom Imaging.* 2011; 36: 565-568.
12. Shope TR, Bass TL, Haluck RS. Laparoscopic management of traumatic hemorrhagic cholecystitis. *JLS.* 2004; 8: 93-95.

Ethical considerations and responsibility: the authors declare that they followed the protocols of their work center on the publication of patient data, safeguarding their right to privacy through the confidentiality of their data.

Funding: no financial support was received for this work.

Disclosure: the authors declare no conflict of interest in carrying out the work.

Correspondence:

César Óscar Decanini Terán, Acad. MD.

E-mail: cdecanini@decaniniyassociados.com