

World Journal of *Clinical Cases*

World J Clin Cases 2022 September 26; 10(27): 9550-9969



OPINION REVIEW

- 9550 Psychiatric disorders and pain: The recurrence of a comorbidity
Vyshka G

REVIEW

- 9556 Cardiovascular disease and COVID-19, a deadly combination: A review about direct and indirect impact of a pandemic
Vidal-Perez R, Brandão M, Pazdernik M, Kresoja KP, Carpenito M, Maeda S, Casado-Arroyo R, Muscoli S, Pöss J, Fontes-Carvalho R, Vazquez-Rodriguez JM
- 9573 Molecular factors, diagnosis and management of gastrointestinal tract neuroendocrine tumors: An update
Pavlidis ET, Pavlidis TE

MINIREVIEWS

- 9588 Human-induced pluripotent stem cell-atrial-specific cardiomyocytes and atrial fibrillation
Leowattana W, Leowattana T, Leowattana P
- 9602 COVID-19 and the cardiovascular system-current knowledge and future perspectives
Chatzis DG, Magounaki K, Pantazopoulos I, Bhaskar SMM

ORIGINAL ARTICLE**Case Control Study**

- 9611 PDCA nursing in improving quality management efficacy in endoscopic submucosal dissection
He YH, Wang F

Retrospective Study

- 9619 Impact of COVID-19 pandemic on the ocular surface
Marta A, Marques JH, Almeida D, José D, Sousa P, Barbosa I
- 9628 Anatomy and clinical application of suprascapular nerve to accessory nerve transfer
Wang JW, Zhang WB, Li F, Fang X, Yi ZQ, Xu XL, Peng X, Zhang WG
- 9641 Therapeutic effect of two methods on avulsion fracture of tibial insertion of anterior cruciate ligament
Niu HM, Wang QC, Sun RZ
- 9650 Efficacy of transcatheter arterial chemoembolization using pirarubicin-loaded microspheres combined with lobaplatin for primary liver cancer
Zhang C, Dai YH, Lian SF, Liu L, Zhao T, Wen JY

- 9657** Prognostic significance of sex determining region Y-box 2, E-cadherin, and vimentin in esophageal squamous cell carcinoma

Li C, Ma YQ

- 9670** Clinical characteristics and prognosis of orbital solitary fibrous tumor in patients from a Chinese tertiary eye hospital

Ren MY, Li J, Wu YX, Li RM, Zhang C, Liu LM, Wang JJ, Gao Y

Observational Study

- 9680** Altered heart rate variability and pulse-wave velocity after spinal cord injury

Tsou HK, Shih KC, Lin YC, Li YM, Chen HY

- 9693** Intra and extra pelvic multidisciplinary surgical approach of retroperitoneal sarcoma: Case series report

Song H, Ahn JH, Jung Y, Woo JY, Cha J, Chung YG, Lee KH

META-ANALYSIS

- 9703** Meta-analysis of gemcitabine plus nab-paclitaxel combined with targeted agents in the treatment of metastatic pancreatic cancer

Li ZH, Ma YJ, Jia ZH, Weng YY, Zhang P, Zhu SJ, Wang F

- 9714** Clinical efficacy analysis of mesenchymal stem cell therapy in patients with COVID-19: A systematic review

Cao JX, You J, Wu LH, Luo K, Wang ZX

CASE REPORT

- 9727** Treatment of gastric cancer with dermatomyositis as the initial symptom: Two case reports and review of literature

Sun XF, Gao XD, Shen KT

- 9734** Gallbladder hemorrhage—An uncommon surgical emergency: A case report

Valenti MR, Cavallaro A, Di Vita M, Zanghi A, Longo Trischitta G, Cappellani A

- 9743** Successful treatment of stage IIIB intrahepatic cholangiocarcinoma using neoadjuvant therapy with the PD-1 inhibitor camrelizumab: A case report

Zhu SG, Li HB, Dai TX, Li H, Wang GY

- 9750** Myocarditis as an extraintestinal manifestation of ulcerative colitis: A case report and review of the literature

Wang YY, Shi W, Wang J, Li Y, Tian Z, Jiao Y

- 9760** Endovascular treatment of traumatic renal artery pseudoaneurysm with a Stanford type A intramural haematoma: A case report

Kim Y, Lee JY, Lee JS, Ye JB, Kim SH, Sul YH, Yoon SY, Choi JH, Choi H

- 9768** Histiocytoid giant cellulitis-like Sweet syndrome at the site of sternal aspiration: A case report and review of literature

Zhao DW, Ni J, Sun XL

- 9776** Rare giant corneal keloid presenting 26 years after trauma: A case report
Li S, Lei J, Wang YH, Xu XL, Yang K, Jie Y
- 9783** Efficacy evaluation of True Lift®, a nonsurgical facial ligament retightening injection technique: Two case reports
Huang P, Li CW, Yan YQ
- 9790** Synchronous primary duodenal papillary adenocarcinoma and gallbladder carcinoma: A case report and review of literature
Chen J, Zhu MY, Huang YH, Zhou ZC, Shen YY, Zhou Q, Fei MJ, Kong FC
- 9798** Solitary fibrous tumor of the renal pelvis: A case report
Liu M, Zheng C, Wang J, Wang JX, He L
- 9805** Gastric metastasis presenting as submucosa tumors from renal cell carcinoma: A case report
Chen WG, Shan GD, Zhu HT, Chen LH, Xu GQ
- 9814** Laparoscopic correction of hydronephrosis caused by left paraduodenal hernia in a child with cryptorchism: A case report
Wang X, Wu Y, Guan Y
- 9821** Diagnosed corrected transposition of great arteries after cesarean section: A case report
Ichii N, Kakinuma T, Fujikawa A, Takeda M, Ohta T, Kagimoto M, Kaneko A, Izumi R, Kakinuma K, Saito K, Maeyama A, Yanagida K, Takeshima N, Ohwada M
- 9828** Misdiagnosis of an elevated lesion in the esophagus: A case report
Ma XB, Ma HY, Jia XF, Wen FF, Liu CX
- 9834** Diagnostic features and therapeutic strategies for malignant paraganglioma in a patient: A case report
Gan L, Shen XD, Ren Y, Cui HX, Zhuang ZX
- 9845** Infant with reverse-transcription polymerase chain reaction confirmed COVID-19 and normal chest computed tomography: A case report
Ji GH, Li B, Wu ZC, Wang W, Xiong H
- 9851** Pulmonary hypertension secondary to seronegative rheumatoid arthritis overlapping antisynthetase syndrome: A case report
Huang CY, Lu MJ, Tian JH, Liu DS, Wu CY
- 9859** Monitored anesthesia care for craniotomy in a patient with Eisenmenger syndrome: A case report
Ri HS, Jeon Y
- 9865** Emergency treatment and anesthesia management of internal carotid artery injury during neurosurgery: Four case reports
Wang J, Peng YM

- 9873** Resolution of herpes zoster-induced small bowel pseudo-obstruction by epidural nerve block: A case report
Lin YC, Cui XG, Wu LZ, Zhou DQ, Zhou Q
- 9879** Accidental venous port placement *via* the persistent left superior vena cava: Two case reports
Zhou RN, Ma XB, Wang L, Kang HF
- 9886** Application of digital positioning guide plates for the surgical extraction of multiple impacted supernumerary teeth: A case report and review of literature
Wang Z, Zhao SY, He WS, Yu F, Shi SJ, Xia XL, Luo XX, Xiao YH
- 9897** Iatrogenic aortic dissection during right transradial intervention in a patient with aberrant right subclavian artery: A case report
Ha K, Jang AY, Shin YH, Lee J, Seo J, Lee SI, Kang WC, Suh SY
- 9904** Pneumomediastinum and subcutaneous emphysema secondary to dental extraction: Two case reports
Ye LY, Wang LF, Gao JX
- 9911** Hemorrhagic shock due to submucosal esophageal hematoma along with mallory-weiss syndrome: A case report
Oba J, Usuda D, Tsuge S, Sakurai R, Kawai K, Matsubara S, Tanaka R, Suzuki M, Takano H, Shimozawa S, Hotchi Y, Usami K, Tokunaga S, Osugi I, Katou R, Ito S, Mishima K, Kondo A, Mizuno K, Takami H, Komatsu T, Nomura T, Sugita M
- 9921** Concurrent severe hepatotoxicity and agranulocytosis induced by *Polygonum multiflorum*: A case report
Shao YL, Ma CM, Wu JM, Guo FC, Zhang SC
- 9929** Transient ischemic attack after mRNA-based COVID-19 vaccination during pregnancy: A case report
Chang CH, Kao SP, Ding DC
- 9936** Drug-induced lung injury caused by acetaminophen in a Japanese woman: A case report
Fujii M, Kenzaka T
- 9945** Familial mitochondrial encephalomyopathy, lactic acidosis, and stroke-like episode syndrome: Three case reports
Yang X, Fu LJ
- 9954** Renal pseudoaneurysm after rigid ureteroscopic lithotripsy: A case report
Li YH, Lin YS, Hsu CY, Ou YC, Tung MC

LETTER TO THE EDITOR

- 9961** Role of traditional Chinese medicine in the initiative practice for health
Li Y, Li SY, Zhong Y
- 9964** Impact of the COVID-19 pandemic on healthcare workers' families
Helou M, El Osta N, Husni R

- 9967** Transition beyond the acute phase of the COVID-19 pandemic: Need to address the long-term health impacts of COVID-19

Tsioutis C, Tofarides A, Spernovasilis N

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Yusuf Tutar, PhD, Chairman, Director, Full Professor, Department of Basic Pharmaceutical Sciences, Division of Biochemistry, University of Health Sciences, Istanbul 34668, Turkey. ytutar@outlook.com

AIMS AND SCOPE

The primary aim of *World Journal of Clinical Cases (WJCC, World J Clin Cases)* is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING

The *WJCC* is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 Edition of Journal Citation Reports® cites the 2021 impact factor (IF) for *WJCC* as 1.534; IF without journal self cites: 1.491; 5-year IF: 1.599; Journal Citation Indicator: 0.28; Ranking: 135 among 172 journals in medicine, general and internal; and Quartile category: Q4. The *WJCC*'s CiteScore for 2021 is 1.2 and Scopus CiteScore rank 2021: General Medicine is 443/826.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Ying-Yi Yuan*; Production Department Director: *Xiang Li*; Editorial Office Director: *Jin-Lei Wang*.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

EDITORS-IN-CHIEF

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

September 26, 2022

COPYRIGHT

© 2022 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>

Gallbladder hemorrhage—An uncommon surgical emergency: A case report

Maria Rosaria Valenti, Andrea Cavallaro, Maria Di Vita, Antonio Zanghi, Giovanni Longo Trischitta, Alessandro Cappellani

Specialty type: Surgery

Provenance and peer review:

Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): 0

Grade B (Very good): 0

Grade C (Good): 0

Grade D (Fair): D, D

Grade E (Poor): 0

P-Reviewer: Kai K, Japan;
Yasukawa K, Japan

Received: May 10, 2021

Peer-review started: May 10, 2021

First decision: June 5, 2021

Revised: June 14, 2021

Accepted: June 30, 2022

Article in press: June 30, 2022

Published online: September 26, 2022



Maria Rosaria Valenti, Andrea Cavallaro, Maria Di Vita, Antonio Zanghi, Giovanni Longo Trischitta, Alessandro Cappellani, Department of Surgery, University of Catania Medical School, University of Catania, Catania 95123, Italy

Corresponding author: Andrea Cavallaro, MD, PhD, Associate Research Scientist, Doctor, Medical Assistant, Surgeon, Surgical Oncologist, Teaching Assistant, Department of Surgery, University of Catania Medical School, University of Catania, Via S. Sofia 78, Catania 95123, Italy. andrecavallaro@tiscali.it

Abstract

BACKGROUND

Gallbladder hemorrhage is a life-threatening disorder. Trauma (accidental or iatrogenic such as a percutaneous biopsy or cholecystectomy surgery), cholelithiasis, biliary tract parasitosis, vasculitis, vascular malformations, autoimmune and neoplastic diseases and coagulopathies have been described as causes of hemorrhage within the lumen of the gallbladder. The use of non-steroidal anti-inflammatory drugs and anticoagulants may represent a risk factor.

CASE SUMMARY

We report the case of a 76-year-old male patient. An urgent contrast computed tomography scan demonstrated relevant distension of the gallbladder filled with hyperdense non-homogeneous content. The gallbladder walls were of regular thickness. Near the anterior wall a focus of suspected active bleeding was observed. Due to the progressive decrease in hemoglobin despite three blood transfusions, this was an indication for urgent surgery.

CONCLUSION

Early diagnosis of this potentially fatal pathology is essential in order to plan a strategy and eventually proceed with urgent surgical treatment.

Key Words: Gallbladder; Hemorrhage; Anticoagulants; Cholecystectomy; Surgery; Case report

©The Author(s) 2022. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Gallbladder hemorrhage is an uncommon life-threatening disorder. There are many causes of this condition: trauma, cholelithiasis, biliary tract parasitosis, vasculitis, vascular malformations, autoimmune and neoplastic diseases and coagulopathies. We report the case of a 76-year-old male patient. An urgent contrast computed tomography scan demonstrated relevant distension of the gallbladder filled with hyperdense non-homogeneous content and a focus of suspected active bleeding. The patient underwent urgent surgery to stop the hemorrhage. Early diagnosis of this insidious and potentially fatal pathology is essential to plan the best treatment strategy for patients.

Citation: Valenti MR, Cavallaro A, Di Vita M, Zanghi A, Longo Trischitta G, Cappellani A. Gallbladder hemorrhage—An uncommon surgical emergency: A case report. *World J Clin Cases* 2022; 10(27): 9734-9742

URL: <https://www.wjgnet.com/2307-8960/full/v10/i27/9734.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v10.i27.9734>

INTRODUCTION

Gallbladder hemorrhage is a rare condition, which can be difficult to diagnose. It manifests symptoms present in other more common pathologies, such as fever, nausea, abdominal pain, and Murphy's sign. Trauma (accidental or iatrogenic such as a percutaneous biopsy or cholecystectomy surgery), cholelithiasis, biliary tract parasitosis (*e.g.*, ascariasis), vasculitis, vascular malformations, neoplastic diseases, and coagulopathies have been described as causes of hemorrhage within the lumen of the gallbladder. The use of non-steroidal anti-inflammatory drugs (NSAIDs) and anticoagulants may represent a risk factor. During the evolution of flogosis, necrosis of the gallbladder mucosa may result in bleeding from the vessels located within the organ wall. The use of imaging methods such as ultrasound, computed tomography (CT) and angiography can be useful in diagnosing this uncommon condition. As a medical emergency with a reported mortality rate of 15%-20%, early diagnosis is mandatory and can result in a better outcome for the patient[1-4]. We describe the case of a patient treated with NSAIDs and anticoagulants, who developed severe anemia due to intracolecystic hemorrhage that required urgent surgery.

CASE PRESENTATION

Chief complaints

The patient complained of abdominal pain and constipation.

History of present illness

We report the case of a 76-year-old male patient who attended the emergency room due to abdominal pain and constipation.

History of past illness

In the anamnesis he presented osteoporosis, parkinsonism, vertebral stabilization (metal plates and screws) for L2-L3 arthrodesis (2016), L1-L2 spondylodiscitis, chronic pain in the lumbar region, stiffness in the upper limbs and lower limbs, small steps and impairment of the extensor muscles of the spinal column with bent spine syndrome. In July 2020, due to trauma, he attended the emergency room, where, lacking diagnostic evidence, he was discharged and transferred to a rehabilitation institution. He had been taking the following drugs for the last few years at home: Pantoprazole, CardioASA, Bromazepam, Durogesic, and Cardicor.

Personal and family history

No relevant personal and family history.

Physical examination

On physical examination, the patient appeared oriented, cooperative, eupnoic, malnourished, with muscle atrophy and widespread hypotonia. Abdominal examination demonstrated diffuse abdominal pain. His heart rate was 68 bpm, blood pressure was 120/70 mmHg, and temperature was 36°C.

Laboratory examinations

Blood chemistry showed the following: hemoglobin 11.2 g/dL; white blood cell count 10.790/μL; total bilirubin 0.50 mg/dL; aspartate aminotransferase 40 U/L; alanine aminotransferase 28 U/L; alkaline

phosphatase 115 U/L; amylase 406 U/L; C-reactive protein: 150 mg/L.

Imaging examinations

To assess the suspicion of chronic pancreatitis, the patient underwent abdominal ultrasound, and the pancreas showed multiple calcifications in the parenchyma. Moreover, the aorta demonstrated an irregular caliber with progressive stenosis. This finding required an in-depth study; therefore, CT angiography was performed and the common right artery demonstrated CT signs of dissection and ulcerated atheromatous plaque at the origin. Dilated gallbladder, slightly dilated extrahepatic biliary tract, increased volume in the pancreatic gland with small hypodense formations in the pancreas head (maximum diameter 3 mm) were also highlighted. Due to the finding of ulcerated atheromatous plaque, Fondaparinux 2.5 mg/d was administered as suggested by the vascular surgeon consultant.

However, the persistence of continuous lumbar pain led the patient to NSAIDs and morphine-like analgesic self-administration, the dosage of which was increased and reduced according to the patient's symptoms relief. Approximately 10 d after Fondaparinux administration, the patient suddenly experienced severe anemia, hyperbilirubinemia, increased cholestasis and transaminase. On physical examination the abdomen was painless. No blood was found in the stool. An urgent abdominal ultrasound, with the patient still in bed, was performed. Evidence of distended gallbladder filled with non-homogeneous hyperechoic material and a slightly dilated intrahepatic biliary tract were observed (Figure 1). The common bile duct was not visible due to intestinal gas.

Therefore, the patient underwent an urgent CT scan, which demonstrated relevant distension of the gallbladder filled with hyperdense non-homogeneous content. The gallbladder walls were of regular thickness. Near the anterior wall, a focus of suspected active bleeding was noted. Intra- and extra-hepatic biliary ducts demonstrated wider dilatation when compared to the previous CT scan (Figure 2).

FINAL DIAGNOSIS

Gallbladder hemorrhage.

TREATMENT

Our hospital is an emergency referring center, with multidisciplinary expertise readily available. An interventional radiological consultation was sought with the aim of evaluating the risk-benefit ratio of cystic artery embolization and/or cholecystostomy. The risk of gallbladder necrosis due to cystic artery occlusion and the risk of hemoperitoneum due to percutaneous drainage led the surgical team to select upfront surgery. The decrease in hemoglobin despite three blood transfusions, coagulation disorders and worsening of his general condition required an effective and timely solution. Therefore, the patient underwent urgent surgery. Open cholecystectomy was performed. Choledocotomy with Kehr tube apposition completed the surgery due to the presence of dilated hepatocoeleus (approximately 25 mm) (Figure 3A). When the gallbladder was inspected at the backtable, it appeared entirely occupied by clots (Figure 3B).

OUTCOME AND FOLLOW-UP

A further blood transfusion, plasma and supportive medical therapy were administered during the perioperative period. The patient had a regular post-operative course until discharge. The T tube was removed 50 d after surgery. Histological examination demonstrated acute lithiasic cholecystitis without any relevant finding.

DISCUSSION

Gallbladder hemorrhage is a rare complication of cholelithiasis, and is difficult to diagnose due to the non-specificity of the symptoms, which may easily lead to possible thoracic aortic dissection for back pain or acute cholecystitis for right hypochondrium pain. It can also manifest with fever, nausea, jaundice, melena and increased indices of inflammation and markers of liver damage in blood tests (neutrophilic leukocytosis, hypertransaminasemia, hyperbilirubinemia)[1-4].

Among the causes of gallbladder hemorrhage, trauma, neoplasms of the biliary tract, lithiasic cholecystitis, parasitosis, vasculitis, autoimmune diseases, and primary or secondary coagulopathies (*e.g.*, liver cirrhosis, renal failure) have been reported[5-10]. Most patients diagnosed with gallbladder hemorrhage have comorbidities and most take anticoagulants and NSAIDs. To date, approximately 51



DOI: 10.12998/wjcc.v10.i27.9734 Copyright ©The Author(s) 2022.

Figure 1 Ultrasound scan. Distended gallbladder filled with non-homogeneous hyperechoic material and slightly dilated intrahepatic biliary tract, the common bile duct was not visible due to intestinal gas.



DOI: 10.12998/wjcc.v10.i27.9734 Copyright ©The Author(s) 2022.

Figure 2 Computed tomography scan of intra- and extra-hepatic biliary ducts demonstrated wider dilatation.

case reports have been reported in the literature since 1980[5]. We performed a brief revision of the cases reported in the literature, and their treatment strategies (Table 1). Among the reports, over 80% of patients underwent surgery with cholecystectomy. Of these, 6/45 patients underwent elective laparoscopic cholecystectomy after conservative treatment. Open surgery was dominant in the urgent setting (24 vs 15 patients), and we could hypothesize that this surgical technique was chosen with the aim of better evaluation and control of extra-gallbladder sources of hemorrhage.

The elevated prevalence (47%) of patients treated with antiplatelet agents and/or anticoagulants clearly underlines these drugs as risk factors. However, the role of other causes of hemorrhage (accidental or iatrogenic trauma, cholelithiasis, neoplasm, vascular anomalies and coagulopathies) in patients who did not take the aforementioned drugs is not insignificant.

Finally, we can assume that the incidence of this rare pathology is somehow underestimated, given the small number of cases in the literature. In the case described in this report, the patient had been taking cardioaspirin at home.

Moreover, the finding of dissection of the right iliac artery and ulcerated atheromatous plaque, and the thromboembolic risk derived from the patient's bed rest due to chronic lumbar pain suggested the administration of low molecular weight heparin. The self-administration and potential abuse of NSAIDs may have represented an additional risk factor.

Cholelithiasis and the intake of antithrombotic drugs may have played a primary role in the etiology of gallbladder hemorrhage. The damage caused by gallbladder mucosal stones usually heals spontaneously, but this may not occur in patients taking anticoagulants, creating blood oozing that can result in

Table 1 Case reports in the literature since 1980

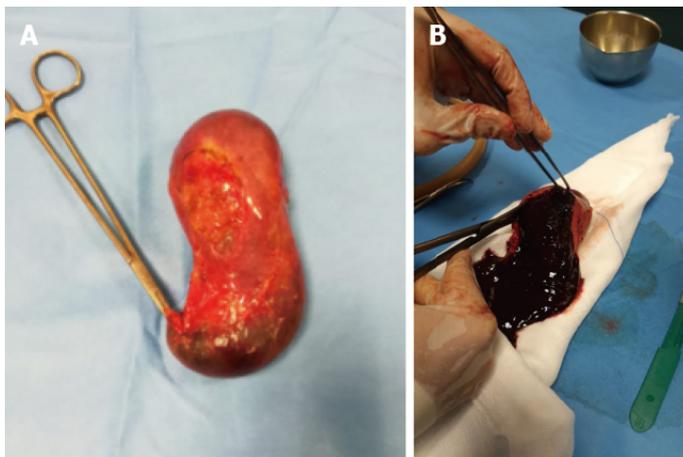
Ref.	Journal	Patient age/gender	Anti-coagulation	Treatment choice
Nguyen D <i>et al</i> [16], 2021	Journal of Radiology Case Reports		N	Cystic artery embolization, cholecystectomy
Chen X <i>et al</i> [17], 2021	Hepatobiliary Surgery and Nutrition	63 F	Not mentioned	ERCP and ENBD, cholecystectomy
Leaning[18], 2021	Journal of Surgical Case Reports	73 M	Y-Apixaban	Laparoscopic Cholecystectomy
Azam <i>et al</i> [19], 2021	Journal of the National Medical Association	55 M	Y-Apixaban	Cholecystectomy
Yam <i>et al</i> [2], 2020	Radiology Case Reports	51 F	N	Cystic artery embolization, cholecystostomy, open cholecystectomy
Gomes <i>et al</i> [20], 2020	BMJ Case Reports	87 M	Y-Aspirin	Open cholecystectomy
Kishimoto <i>et al</i> [21], 2020	Gan To Kagaku Ryoho. Cancer and Chemotherapy	96 F	N	Laparoscopic cholecystectomy
Tarazi <i>et al</i> [5], 2019	Journal of Surgical Case Reports	87 M	Y-Warfarin	Cholecystostomy
		65 F	Y-Warfarin	Conservative with IV antibiotics
		92 F	N	Cholecystostomy
Reens <i>et al</i> [22], 2019	The Journal of Emergency Medicine	76 M	Y-Warfarin	Cholecystostomy
Itagaki <i>et al</i> [23], 2019	Journal of Medical Case Reports	86 F	Y-Edoxaban	Conservative with IV antibiotics, elective laparoscopic cholecystectomy
Honda <i>et al</i> [24], 2019	Journal of Clinical Rheumatology: practical reports on rheumatic & musculoskeletal diseases.	71 M	N	Laparoscopic cholecystectomy
San Juan López C <i>et al</i> [25], 2019	Revista española de enfermedades digestivas: organo oficial de la Sociedad Española de Patología Digestiva.	55 M	N	Laparoscopic cholecystectomy
Ng <i>et al</i> [26], 2018	BMJ Case Reports	68 F	N	Open cholecystectomy
Liefman <i>et al</i> [27], 2018	International Annals of Medicine	73 F	Y-Rivaroxaban	Conservative with IV antibiotics, elective laparoscopic cholecystectomy
López <i>et al</i> [28], 2018	Radiology	84 M	Not mentioned	Laparoscopic cholecystectomy
Berndtson <i>et al</i> [29], 2017	Surgical Infections Case Reports	75 F	N	Open cholecystectomy
Choi <i>et al</i> [30], 2017	Trauma Image and Procedure	65 M	N	Laparotomy + open cholecystectomy
Kinnear <i>et al</i> [31], 2017	BMJ Case Reports	74 M	Y- Apixaban	Laparotomy + open cholecystectomy
Sishida <i>et al</i> [32], 2017	Case Reports in Gastroenterology	79 M	Y-Heparin for dialysis	ERCP and ENBD
Oshiro <i>et al</i> [33], 2017	International Surgery	61 F	Y - Warfarin	Conservative with IV antibiotics, elective laparoscopic cholecystectomy
Yoshida <i>et al</i> [34], 2017	J-Stage	73 M	Y	Laparoscopic cholecystectomy
Tsai <i>et al</i> [35], 2016	Medicine	80 M	N	Cholecystostomy, elective laparoscopic cholecystectomy
Calvo Espino <i>et al</i> [36], 2016	Cirugía Española	59 M	N	Laparotomy + Open cholecystectomy
Cho <i>et al</i> [37], 2015	Korean Journal of Thoracic and Cardiovascular Surgery	61 M	Y-Warfarin	Cholecystostomy drainage
Aljiffry <i>et al</i> [38], 2014	Journal of Surgical Case Reports	57 M	N	Cystic artery embolization + open cholecystectomy
Onozawa <i>et al</i>	International Surgery	58 F	N	Laparoscopic cholecystectomy

[39], 2014					
Matsukiyo <i>et al</i> [40], 2014	J-Stage	68 F	Y-thrombolysis	Laparotomy + open cholecystectomy	
Seok <i>et al</i> [41], 2013	Korean Journal of Internal Medicine	84 M	N	Laparoscopic cholecystectomy	
Taniguchi <i>et al</i> [42], 2013	J-Stage	48 M	Y-Heparin for dialysis	Laparotomy + open cholecystectomy	
Choi[43], 2012	Zeitschrift für Gastroenterologie	36 M	Y-Aspirin and Clopidogrel	Laparoscopic cholecystectomy	
Kwon <i>et al</i> [1], 2012	Korean Journal of Hepatobiliary Pancreatic Surgery	75 M	Y-Warfarin	Laparoscopic cholecystectomy	
Perez <i>et al</i> [10], 2011	Revista Española De Enfermedades digestivas	24 F	N	Laparoscopic to open cholecystectomy + intra-operative cholangiography	
Jung <i>et al</i> [44], 2011	Journal of the Korean Surgical Society	55 M	N	Laparoscopic cholecystectomy	
Parekh <i>et al</i> [7], 2010	JAMA Surgery	60 M	N	ERCP + Laparoscopic cholecystectomy	
		50 M	N	Laparoscopic to open cholecystectomy	
Lin <i>et al</i> [45], 2010	Journal of Internal Medicine of Taiwan	80 M	Y-Warfarin	Laparoscopic cholecystectomy	
Chen <i>et al</i> [46], 2010	The American Journal of the Medical Sciences	Elderly M	Y-Heparin	Laparoscopic cholecystectomy	
Miyamoto <i>et al</i> [5], 2009	J-Stage	42 F	N	Conservative with IV antibiotics, elective laparoscopic cholecystectomy	
Oh <i>et al</i> [47], 2009	Journal of the Korean Society of Magnetic Resonance in Medicine	40 M	Not mentioned	Laparoscopic cholecystectomy	
Lai <i>et al</i> [8], 2009	Journal of Chinese Medical Association	81 M	Y-Heparin for dialysis	Conservative with IV antibiotics, elective laparoscopic cholecystectomy	
Morris <i>et al</i> [48], 2008	Case Reports in Gastroenterology	91 F	N	Open cholecystectomy	
Pandya <i>et al</i> [6], 2008	Abdominal Imaging	85 F	Y-Warfarin	Conservative with IV antibiotics	
Kim <i>et al</i> [49], 2007	World Journal of Gastroenterology	55 M	N	Cholecystostomy drainage	
Gremmels <i>et al</i> [50], 2004	Journal of Ultrasound in Medicine	66 M	N	Laparotomy + open cholecystectomy	
Hanaki <i>et al</i> [5], 2000	J-Stage	66 M	Not mentioned	Laparotomy + open cholecystectomy	
Nishiwaki <i>et al</i> [51], 1999	Journal of Gastroenterology	58 M	N	Laparotomy + open cholecystectomy	
Stempel <i>et al</i> [14], 1993	Journal of Vascular and Interventional Radiology	78 M	Y-Heparin during AAA repair	Cholecystostomy drainage	
Brady <i>et al</i> [9], 1985	Disease of the Colon & Rectum	79 M	N	Open cholecystectomy	
Berland <i>et al</i> [52], 1980	Journal of Computed Assisted Tomography	56 M	N	Laparotomy + open cholecystectomy	

ERCP: Endoscopic Retrograde Cholangiopancreatography.

acute bleeding. The patient's medical history, physical examination, laboratory tests and radiological imaging are relevant to the diagnosis, to exclude other pathologies[11,12], in order to promptly plan a strategy, as gallbladder hemorrhage represents a potentially fatal surgical emergency. An initial evaluation with ultrasound can be carried out. Most cases of gallbladder hemorrhage demonstrate ultrasound features not common in acute cholecystitis.

The sonographic findings in hemorrhagic cholecystitis include focal wall thickening, intraluminal membranes and non-shadowing, non-mobile intraluminal echogenic material. There may be some echogenic layering material for which the differential diagnosis includes sludge[13]. The suspicion can be further confirmed by CT examination, which may demonstrate high attenuation within the gallbladder lumen with layering high attenuation fluid-fluid level representing blood or sludge. An early phase contrast-enhanced CT helps to detect active extravasation of contrast and blush within the lumen of the gallbladder[5,6].



DOI: 10.12998/wjcc.v10.i27.9734 Copyright ©The Author(s) 2022.

Figure 3 Surgical specimen. A: When open cholecystectomy was performed, choledocotomy with Kehr tube apposition completed the surgery due to dilated hepatocolodocus (approximately 25 mm); B: When the gallbladder was inspected at the backtable, it appeared entirely occupied by clots.

The most suitable treatment for gallbladder bleeding is urgent laparoscopic or laparotomic cholecystectomy. In some selected cases, it is possible to plan a non-interventional strategy with antibiotic therapy and supportive medical therapy, postponing subsequent cholecystectomy surgery[5, 10].

Rarely, in the case of patients ineligible for surgery, a percutaneous cholecystostomy may be indicated[14,15]. In our case, given the patient's sudden anemia, despite blood transfusions and supportive medical therapy, due to the persistence of hemodynamic instability we proceeded with urgent surgery.

CONCLUSION

Gallbladder hemorrhage is a life-threatening complication of cholelithiasis. Early diagnosis of this potentially fatal pathology is essential in order to plan a treatment strategy and eventually proceed with urgent surgical treatment, to ensure timely life-saving decisions and the best results for the patient.

FOOTNOTES

Author contributions: All authors discussed the results and contributed to the final manuscript.

Informed consent statement: Written informed consent was obtained from the patient for publication of this case report.

Conflict-of-interest statement: All authors report no relevant conflict of interest for this article.

CARE Checklist (2016) statement: The authors have read the Care Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

Country/Territory of origin: Italy

ORCID number: Maria Rosaria Valenti 0000-0003-4185-1816; Andrea Cavallaro 0000-0002-0311-5191; Maria Di Vita 0000-0002-5578-2834; Antonio Zanghi 0000-0002-7765-9626; Giovanni Longo Trischitta 0000-0001-5958-5638; Alessandro Cappellani 0000-0002-9113-2396.

S-Editor: Wu YXJ

L-Editor: Webster JR

P-Editor: Wu YXJ

REFERENCES

- 1 **Kwon JN.** Hemorrhagic cholecystitis: report of a case. *Korean J Hepatobiliary Pancreat Surg* 2012; **16**: 120-122 [PMID: 26388920 DOI: 10.14701/kjhbps.2012.16.3.120]
- 2 **Yam MKH, Sim SW, Tam KY, Li YL.** A 51-year-old female presenting with shock due to hemorrhagic cholecystitis. *Radiol Case Rep* 2020; **15**: 2547-2549 [PMID: 33082895 DOI: 10.1016/j.radcr.2020.09.045]
- 3 **Hasegawa T, Sakuma T, Kinoshita H, Nakagawa Y, Kawachiya T, Hara J, Teraoka H.** A Case of Hemorrhagic Cholecystitis and Hemobilia Under Anticoagulation Therapy. *Am J Case Rep* 2021; **22**: e927849 [PMID: 33419958 DOI: 10.12659/AJCR.927849]
- 4 **Rahesh J, Anand R, Ciubuc J, Athas V, Brooks S, Ronaghan C.** Atraumatic spontaneous hemorrhagic cholecystitis. *Proc (Bayl Univ Med Cent)* 2020; **34**: 107-108 [PMID: 33456163 DOI: 10.1080/08998280.2020.1829961]
- 5 **Tarazi M, Tomalieh FT, Sweeney A, Sumner D, Abdulaal Y.** Literature review and case series of haemorrhagic cholecystitis. *J Surg Case Rep* 2019; **2019**: rjy360 [PMID: 30647900 DOI: 10.1093/jscr/rjy360]
- 6 **Pandya R, O'Malley C.** Hemorrhagic cholecystitis as a complication of anticoagulant therapy: role of CT in its diagnosis. *Abdom Imaging* 2008; **33**: 652-653 [PMID: 18629579 DOI: 10.1007/s00261-007-9358-2]
- 7 **Parekh J, Corvera CU.** Hemorrhagic cholecystitis. *Arch Surg* 2010; **145**: 202-204 [PMID: 20157090 DOI: 10.1001/archsurg.2009.265]
- 8 **Lai YC, Tarng DC.** Hemorrhagic acalculous cholecystitis: an unusual location of uremic bleeding. *J Chin Med Assoc* 2009; **72**: 484-487 [PMID: 19762317 DOI: 10.1016/S1726-4901(09)70412-5]
- 9 **Brady E, Welch JP.** Acute hemorrhagic cholecystitis causing hemobilia and colonic necrosis. *Dis Colon Rectum* 1985; **28**: 185-187 [PMID: 3971827 DOI: 10.1007/BF02554241]
- 10 **García Pérez R, Ruiz de Angulo D, López Poveda MJ, Febrero Sánchez B, Navas Carrillo D, Parrilla Paricio P.** Hemorrhagic cholecystitis and hemobilia: two infrequent complications of systemic lupus erythematosus. *Rev Esp Enferm Dig* 2011; **103**: 431-433 [PMID: 21867355 DOI: 10.4321/s1130-01082011000800009]
- 11 **Cavallaro A, Piccolo G, Di Vita M, Zanghi A, Cardì F, Di Mattia P, Barbera G, Borzì L, Panebianco V, Di Carlo I, Cavallaro M, Cappellani A.** Managing the incidentally detected gallbladder cancer: algorithms and controversies. *Int J Surg* 2014; **12** Suppl 2: S108-S119 [PMID: 25182380 DOI: 10.1016/j.ijssu.2014.08.367]
- 12 **Cavallaro A, Piccolo G, Panebianco V, Lo Menzo E, Berretta M, Zanghi A, Di Vita M, Cappellani A.** Incidental gallbladder cancer during laparoscopic cholecystectomy: managing an unexpected finding. *World J Gastroenterol* 2012; **18**: 4019-4027 [PMID: 22912553 DOI: 10.3748/wjg.v18.i30.4019]
- 13 **Chinn DH, Miller EI, Piper N.** Hemorrhagic cholecystitis. Sonographic appearance and clinical presentation. *J Ultrasound Med* 1987; **6**: 313-317 [PMID: 3302297 DOI: 10.7863/jum.1987.6.6.313]
- 14 **Stempel LR, Vogelzang RL.** Hemorrhagic cholecystitis with hemobilia: treatment with percutaneous cholecystostomy and transcatheter urokinase. *J Vasc Interv Radiol* 1993; **4**: 377-380 [PMID: 8513211 DOI: 10.1016/s1051-0443(93)71882-5]
- 15 **Imamura H, Minami S, Isagawa Y, Morita M, Hirabaru M, Kawahara D, Tokai H, Noda K, Inoue K, Haraguchi M, Eguchi S.** The impact of antithrombotic therapy in patients undergoing emergency laparoscopic cholecystectomy for acute cholecystitis - A single center experience. *Asian J Endosc Surg* 2020; **13**: 359-365 [PMID: 31430063 DOI: 10.1111/ases.12751]
- 16 **Nguyen D, Goodwin JS, Bhowmik N, Boiteau G, Potts J.** Acute Hemorrhagic Cholecystitis with Large Hemoperitoneum: Treatment with Microcoil Embolization and Subsequent Cholecystectomy. *J Radiol Case Rep* 2021; **15**: 25-34 [PMID: 33717408 DOI: 10.3941/jrcr.v15i2.3901]
- 17 **Chen X, Yu L.** A haemorrhagic cholecystitis presenting as obstructive jaundice. *Hepatobiliary Surg Nutr* 2021; **10**: 299-300 [PMID: 33898585 DOI: 10.21037/hbsn-20-737]
- 18 **Leaning M.** Surgical case report-acalculous hemorrhagic cholecystitis. *J Surg Case Rep* 2021; **2021**: rjab075 [PMID: 33796260 DOI: 10.1093/jscr/rjab075]
- 19 **Azam MU, Ibrahim MA, Perry I, Ellison SB, Barrett A, Vega KJ.** It's the Bloody Gallbladder! *J Natl Med Assoc* 2021; **113**: 252-254 [PMID: 33454137 DOI: 10.1016/j.jnma.2020.12.008]
- 20 **Gomes AF, Fernandes S, Martins J, Coutinho J.** Carcinoma of the gallbladder presenting as haemorrhagic cholecystitis. *BMJ Case Rep* 2020; **13** [PMID: 32169978 DOI: 10.1136/bcr-2019-232953]
- 21 **Kishimoto T, Hashimoto Y, Imamura H, Shigetsu K, Murotani M, Yoneda N, Kidogami S, Mokutani Y, Hirose H, Yoshioka S, Endo S, Tamura S, Sasaki Y.** [A Case of Rapidly Progressive Gallbladder Cancer Presented with Gallbladder Hemorrhage]. *Gan To Kagaku Ryoho* 2020; **47**: 2361-2363 [PMID: 33468961]
- 22 **Reens D, Podgorski B.** Hemorrhagic Cholecystitis: A Case of Expedited Diagnosis by Point-of-Care Ultrasound in the Emergency Department. *J Emerg Med* 2019; **57**: 74-76 [PMID: 31000429 DOI: 10.1016/j.jemermed.2019.03.010]
- 23 **Itagaki H, Katuhiko S.** Gallbladder hemorrhage during orally administered edoxaban therapy: a case report. *J Med Case Rep* 2019; **13**: 383 [PMID: 31875787 DOI: 10.1186/s13256-019-2328-9]
- 24 **Honda F, Tsuboi H, Toko H, Terasaki T, Terasaki M, Shimizu M, Ohyama A, Yagishita M, Takahashi H, Yokosawa M, Asashima H, Hagiwara S, Kondo Y, Matsumoto I, Sumida T.** Contrast Enhanced Computed Tomography Revealed Gallbladder Hemorrhage Due to Active Vasculitis in a Patient With Microscopic Polyangiitis. *J Clin Rheumatol* 2019; **25**: e84-e85 [PMID: 29561470 DOI: 10.1097/RHU.0000000000000758]
- 25 **San Juan López C, Lázaro Sáez M, Hernández Martínez Á, López González J, Vega Sáenz JL.** Bleeding from gallbladder varices in a patient with an unknown liver cirrhosis. An exceptional entity. *Rev Esp Enferm Dig* 2019; **111**: 723-724 [PMID: 31333039 DOI: 10.17235/reed.2019.5351/2017]
- 26 **Ng ZQ, Pradhan S, Cheah K, Wijesuriya R.** Haemorrhagic cholecystitis: a rare entity not to be forgotten. *BMJ Case Rep* 2018; **2018** [PMID: 30244228 DOI: 10.1136/bcr-2018-226469]
- 27 **Liefman D, Wullschleger M.** Hemorrhagic cholecystitis: a rare cause of presentation with upper gastrointestinal bleeding. *Int Ann Med* 2018; **2**: 5 [DOI: 10.24087/IAM.2018.2.5.480]
- 28 **López V, Alconchel F.** Hemorrhagic Cholecystitis. *Radiology* 2018; **289**: 316 [PMID: 30179111 DOI: 10.1148/radiol.2018171200]

- 10.1148/radiol.2018181161]
- 29 **Berndtson AE**, Hamel MG, Costantini TW, Coimbra R. Acalculous Perforated Hemorrhagic Emphysematous Cholecystitis Caused by *Clostridium perfringens* in a Patient with Myeloma Taking Daratumumab. *Surg Infect Case Rep* 2017; **2**: 1-4 [DOI: [10.1089/crsi.2016.0050](https://doi.org/10.1089/crsi.2016.0050)]
 - 30 **Choi KK**, Lee MA, Ma DS, Lee GJ, Yu BC, Lee JN. A Hemorrhagic Cholecystitis in a Penetrating Hepatic Injury Trauma Image Proced. 2017; **2**(1): 15-16. Published online: May 31, 2017 [DOI: [10.24184/tip.2017.2.1.15](https://doi.org/10.24184/tip.2017.2.1.15)]
 - 31 **Kinnear N**, Hennessey DB, Thomas R. Haemorrhagic cholecystitis in a newly anticoagulated patient. *BMJ Case Rep* 2017; **2017** [PMID: [28404563](https://pubmed.ncbi.nlm.nih.gov/28404563/) DOI: [10.1136/bcr-2016-214617](https://doi.org/10.1136/bcr-2016-214617)]
 - 32 **Shishida M**, Ikeda M, Karakuchi N, Ono K, Tsukiyama N, Shimomura M, Oishi K, Miyamoto K, Toyota K, Sadamoto S, Takahashi T. Hemorrhagic Cholecystitis in a Patient on Maintenance Dialysis. *Case Rep Gastroenterol* 2017; **11**: 488-493 [PMID: [29033767](https://pubmed.ncbi.nlm.nih.gov/29033767/) DOI: [10.1159/000479497](https://doi.org/10.1159/000479497)]
 - 33 **Oshiro Y**, Tsukamoto S, Owada Y, Takahashi K, Oda T, Sakamoto N, Ohkohchi N. Hemorrhagic Cholecystitis During Anticoagulant Therapy in a Patient With Systemic Lupus Erythematosus and Antiphospholipid Syndrome Undergoing Elective Laparoscopic Cholecystectomy. *Int Surg* 2017; **105**: 1-3 [DOI: [10.9738/INTSURG-D-15-00319.1](https://doi.org/10.9738/INTSURG-D-15-00319.1)]
 - 34 **Yoshida S**, Yokoyama K, Nishida T, Ikuta H. A Case of Gallbladder Hemorrhage Occurred during Anticoagulation Therapy. *J Japan Surg Associa* 2017; **78**: 359-364 [DOI: [10.3919/jjsa.78.359](https://doi.org/10.3919/jjsa.78.359)]
 - 35 **Tsai JL**, Tsai SF. Gallbladder bleeding-related severe gastrointestinal bleeding and shock in a case with end-stage renal disease: A case report. *Medicine (Baltimore)* 2016; **95**: e3870 [PMID: [27281100](https://pubmed.ncbi.nlm.nih.gov/27281100/) DOI: [10.1097/MD.00000000000003870](https://doi.org/10.1097/MD.00000000000003870)]
 - 36 **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 [PMID: [25986890](https://pubmed.ncbi.nlm.nih.gov/25986890/) DOI: [10.1016/j.ciresp.2015.03.016](https://doi.org/10.1016/j.ciresp.2015.03.016)]
 - 37 **Cho SH**, Lee HY, Kim HS. Anticoagulant Therapy-Induced Gallbladder Hemorrhage after Cardiac Valve Replacement. *Korean J Thorac Cardiovasc Surg* 2015; **48**: 432-434 [PMID: [26665115](https://pubmed.ncbi.nlm.nih.gov/26665115/) DOI: [10.5090/kjtc.2015.48.6.432](https://doi.org/10.5090/kjtc.2015.48.6.432)]
 - 38 **Aljiffry MM**, Almulhim AN, Jamal MH, Hassanain MM. Acute cholecystitis presenting with massive intra-abdominal haemorrhage. *J Surg Case Rep* 2014; **2014** [PMID: [24876458](https://pubmed.ncbi.nlm.nih.gov/24876458/) DOI: [10.1093/jscr/rju019](https://doi.org/10.1093/jscr/rju019)]
 - 39 **Onozawa H**, Saito M, Yoshida S, Sakuma T, Matsuzaki M, Katagata N, Watanabe F, Yamaguchi Y, Takenoshita S, Nomizu T. Multiple metastatic malignant melanoma presenting intraluminal gallbladder bleeding. *Int Surg* 2014; **99**: 600-605 [PMID: [25216428](https://pubmed.ncbi.nlm.nih.gov/25216428/) DOI: [10.9738/INTSURG-D-13-00143.1](https://doi.org/10.9738/INTSURG-D-13-00143.1)]
 - 40 **Asai K**, Watanabe M, Kusachi S, Matsukiyo H, Saito T, Kodama H, Dotai K, Hagiwara O, Enomoto T, Nakamura Y, Okamoto Y, Saida Y, Nagao J. Changes in the therapeutic strategy for acute cholecystitis after the Tokyo guidelines were published. *J Hepatobiliary Pancreat Sci* 2013; **20**: 348-355 [PMID: [22869101](https://pubmed.ncbi.nlm.nih.gov/22869101/) DOI: [10.1007/s00534-012-0536-4](https://doi.org/10.1007/s00534-012-0536-4)]
 - 41 **Seok DK**, Ki SS, Wang JH, Moon ES, Lee TU. Hemorrhagic cholecystitis presenting as obstructive jaundice. *Korean J Intern Med* 2013; **28**: 384-385 [PMID: [23682239](https://pubmed.ncbi.nlm.nih.gov/23682239/) DOI: [10.3904/kjim.2013.28.3.384](https://doi.org/10.3904/kjim.2013.28.3.384)]
 - 42 **Taniguchi M**, Kanai S, Kitamura M, Nakamura I, Nakamura T, Shimomatsuya T. A case of gallbladder hemorrhage with intraperitoneal bleeding. *J Japan Surg Associa* 2013; **74**: 503-507 [DOI: [10.3919/jjsa.74.503](https://doi.org/10.3919/jjsa.74.503)]
 - 43 **Choi YS**. Gallbladder hemorrhage mimicking acute cholecystitis in a patient under antiplatelet therapy. *Z Gastroenterol* 2012; **50**: 285-287 [PMID: [22383284](https://pubmed.ncbi.nlm.nih.gov/22383284/) DOI: [10.1055/s-0031-1281997](https://doi.org/10.1055/s-0031-1281997)]
 - 44 **Jung YM**, Son BK, Ahn SB, Kim DH, Kim EK. Intramural gallbladder hematoma mimicking gallbladder neoplasm in a 55-year-old male patient. *J Korean Surg Soc* 2011; **81**: 216-220 [PMID: [22066124](https://pubmed.ncbi.nlm.nih.gov/22066124/) DOI: [10.4174/jkss.2011.81.3.216](https://doi.org/10.4174/jkss.2011.81.3.216)]
 - 45 **Lin HP**, Lin YC. Isolated intraluminal gallbladder hemorrhage after anticoagulation therapy: Report of a case. *Taiwa J Obstet Gynecol* 2010; **21**: 62-65 [DOI: [10.26420/austinjclincardiol.2021.1079](https://doi.org/10.26420/austinjclincardiol.2021.1079)]
 - 46 **Chen YY**, Yi CH, Chen CL, Huang SC, Hsu YH. Hemorrhagic cholecystitis after anticoagulation therapy. *Am J Med Sci* 2010; **340**: 338-339 [PMID: [20601855](https://pubmed.ncbi.nlm.nih.gov/20601855/) DOI: [10.1097/MAJ.0b013e3181e9563e](https://doi.org/10.1097/MAJ.0b013e3181e9563e)]
 - 47 **Oh SY**, Park MH, Jee KN, Jeon GS, Kim HJ. Acalculous hemorrhagic cholecystitis with chronic intraluminal hematoma: MRI findings. *Magn Reson Imaging* 2009; **13**: 195-198 [DOI: [10.13104/imri.2017.21.1.43](https://doi.org/10.13104/imri.2017.21.1.43)]
 - 48 **Morris DS**, Porterfield JR, Sawyer MD. Hemorrhagic cholecystitis in an elderly patient taking aspirin and cilostazol. *Case Rep Gastroenterol* 2008; **2**: 203-207 [PMID: [21490889](https://pubmed.ncbi.nlm.nih.gov/21490889/) DOI: [10.1159/000135693](https://doi.org/10.1159/000135693)]
 - 49 **Kim YC**, Park MS, Chung YE, Lim JS, Kim MJ, Kim KW. Gallstone spillage caused by spontaneously perforated hemorrhagic cholecystitis. *World J Gastroenterol* 2007; **13**: 5525-5526 [PMID: [17907301](https://pubmed.ncbi.nlm.nih.gov/17907301/) DOI: [10.3748/wjg.v13.i41.5525](https://doi.org/10.3748/wjg.v13.i41.5525)]
 - 50 **Gremmels JM**, Kruskal JB, Parangi S, Kane RA. Hemorrhagic cholecystitis simulating gallbladder carcinoma. *J Ultrasound Med* 2004; **23**: 993-995 [PMID: [15292572](https://pubmed.ncbi.nlm.nih.gov/15292572/) DOI: [10.7863/jum.2004.23.7.993](https://doi.org/10.7863/jum.2004.23.7.993)]
 - 51 **Nishiwaki M**, Ashida H, Nishimura T, Kimura M, Yagyu R, Nishioka A, Utsunomiya J, Yamamura T. Posttraumatic intra-gallbladder hemorrhage in a patient with liver cirrhosis. *J Gastroenterol* 1999; **34**: 282-285 [PMID: [10213133](https://pubmed.ncbi.nlm.nih.gov/10213133/) DOI: [10.1007/s005350050258](https://doi.org/10.1007/s005350050258)]
 - 52 **Berland LL**, Doust BD, Foley WD. Acute hemorrhage into the gallbladder diagnosed by computed tomography and ultrasonography. *J Comput Assist Tomogr* 1980; **4**: 260-262 [PMID: [7365026](https://pubmed.ncbi.nlm.nih.gov/7365026/) DOI: [10.1097/00004728-198004000-00029](https://doi.org/10.1097/00004728-198004000-00029)]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
Telephone: +1-925-3991568
E-mail: bpgoffice@wjgnet.com
Help Desk: <https://www.f6publishing.com/helpdesk>
<https://www.wjgnet.com>

