

Acalculous Cholecystitis as the Initial Presentation of Systemic Diffuse Large B-Cell Lymphoma

Narisorn Lakananurak, MD, Nitchakarn Laichuthai, MD, and Sombat Treeprasertsuk, MD, PhD

Department of Medicine, King Chulalongkorn Memorial Hospital, Bangkok, Thailand

Abstract

The involvement of the gallbladder in systemic lymphoma is extremely rare. We report a challenging case of systemic diffuse large B-cell lymphoma (DLBCL) that initially presented with septic shock from acalculous cholecystitis. After extensive investigation, DLBCL was found to be the underlying cause of gallbladder disease.

Introduction

Acute acalculous cholecystitis (AAC) is a necroinflammatory disease of the gallbladder in the absence of gallstones associated with a mortality rate of 10-90%. The pathogenesis of AAC is multifactorial and likely a result of bile stasis, ischemia, or both. Common associated risk factors of AAC are severe trauma, shock, burn, total parenteral nutrition, and infections.^{1,2}

Case Report

A 75-year-old-man was admitted with a 5-day history of right upper quadrant pain, fever, and delirium. His past medical history was significant for hypertension, dyslipidemia, and an ischemic stroke with residual left hemiparesis. He was afebrile, hypotensive (blood pressure 80/50 mm Hg), drowsy, confused, and had a positive Murphy's sign on examination. He had no lymphadenopathy or hepatosplenomegaly. Initial laboratory studies showed mild direct hyperbilirubinemia and pancytopenia with no abnormal cells detected in the peripheral blood smear. His lactate dehydrogenase was 617 U/L. Blood cultures were negative.

Abdominal ultrasound showed gallbladder wall thickening to 5.5 mm with a positive sonographic Murphy's sign, but no gallstones or pericholecystic fluid, confirming a diagnosis of acalculous cholecystitis with septic shock. After 2 days of resuscitation and empiric antibiotic coverage with piperacillin/tazobactam, his blood pressure stabilized and he regained full consciousness. Testing for underlying causes of acalculous cholecystitis, including viral hepatitis A, B, E, scrub typhus, leptospirosis, *Cytomegalovirus*, and Epstein-Barr virus, was negative.¹

Twenty-four hours later, his condition deteriorated from septic shock and developed right upper quadrant tenderness again. Abdominal computed tomography showed a collapsed, thickened gallbladder wall with pericholecystic fluid without gallstones, intra-abdominal free air, or intra-abdominal lymphadenopathy (Figure 1). He continued to deteriorate with progression to generalized peritonitis. An emergency cholecystectomy showed a swollen gallbladder without gallstone or free fluid. Preliminary pathology reported irregular thickening of gallbladder wall with lymphocyte and polymorphonuclear cell infiltration along the mucosa, consistent with cholecystitis. Bone marrow biopsy, done to investigate pancytopenia, showed a severely hypocellular marrow with increased interstitial histiocytes and interstitial small to medium-sized lymphoid cells.

ACG Case Rep J 2015;2(2):110-112. doi:10.14309/crj.2015.21. Published online: January 16, 2015.

Correspondence: Narisorn Lakananurak, MD, Department of Medicine, King Chulalongkorn Memorial Hospital, 1873 Rama 4 Road, Pathumwan, Bangkok 10330, Thailand (jobjobs@gmail.com).



Copyright: © 2015 Lakananurak et al. This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0>.

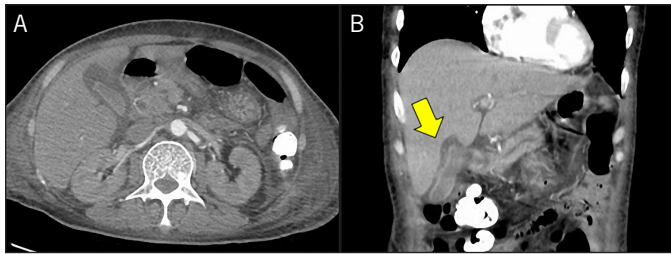


Figure 1. (A) Axial and (B) coronal view of abdominal CT showing collapsed, thickened gallbladder wall with pericholecystic fluid (yellow arrow).

Immunohistochemistry found CD 20+, CD 138–, CD10+/, BCL6+/, MUM1+/, CD5–, EBER–, Cyclin D1–, BCL2+, CD43–, ISH lambda+/, kappa–, Ki67+, CD23–, and CD3–, diagnostic of B-cell non-Hodgkin lymphoma, mixed small and large cells (Figure 2). The gallbladder specimen was re-examined with immunohistochemistry and was found to be CD20+, ISH lambda+/, kappa–, CD138–, CD10–, BCL6+, MUM1+, BCL2–/+, Tdt–, CD34–, cyclinD1–, c-Myc–, EBER–, Ki67+, and CD3–, consistent with stage IV diffuse large B-cell lymphoma (DLBCL) with gallbladder involvement (Figure 3). He was treated with vincristine and dexamethasone, but his clinical course was complicated with severe ventilator-associated *Acinetobacter baumannii* pneumonia and, despite aggressive supportive measures, he died after 2 weeks of hospitalization.

Discussion

Gallbladder involvement of lymphoma is exceedingly rare, and, according to 1969 review, noted in only 2.4% systemic lymphoma patients.³ Both Hodgkin and non-Hodgkin lymphoma can be found.^{4–6} The largest case series of lymphomas with gallbladder involvement reported that systemic lymphoma presenting with gallbladder disease was less common than primary gallbladder lymphoma (5 vs. 14 cases).⁷ Patients with DLBCL were older than other subtypes (mean age 75.8 years vs. 47 years), and gallstones were present in 66% of cases. The underlying pathogenesis of lymphoma-associated AAC may be secondary to tumor cells

infiltrating the gallbladder wall and cystic duct.⁸

We report a rare case of secondary gallbladder involvement of DLBCL presenting with AAC and septic shock. The diagnostic challenge of this case was the absence of peripheral lymphadenopathy or hepatosplenomegaly, and that the patient's pancytopenia was indistinguishable from that of severe sepsis with disseminated intravascular coagulation (DIC). It was also difficult for the pathologist to distinguish malignant cells from lymphocyte infiltration associated with cholecystitis. The mucosal involvement of lymphoid cells in our case was different from transmural involvement in previous case series. In the setting of persistent pancytopenia without other obvious causes of AAC, bone marrow biopsy and reexamination of the gallbladder pathological specimen should be considered to assess for possible lymphoma.

Disclosures

Author contributions: All authors contributed to writing the manuscript. S. Treeprasertsuk is the article guarantor.

Financial disclosure: None to report.

Informed consent was obtained for this case report.

Received: July 2, 2014; Accepted: October 28, 2014

References

- Barie PS, Eachempati SR. Acute acalculous cholecystitis. *Gastroenterol Clin North Am.* 2010;39(2):343–57.
- Huffman JL, Schenker S. Acute acalculous cholecystitis: A review. *Clin Gastroenterol Hepatol.* 2010;8(1):15–22.
- Rosenberg SA, Diamond HD, Jaslowitz B, Craver LF. Lymphosarcoma: A review of 1269 cases. *Medicine (Baltimore).* 1961;40:31–84.
- Daiko EA. Acalculous cholecystitis due to Hodgkin's disease. *Calif Med.* 1970;112(3):28–30.
- Yadav S, Chisti MM, Rosenbaum L, Barnes MA. Intravascular large B cell lymphoma presenting as cholecystitis: Diagnostic challenges persist. *Ann Hematol.* 2014;93(7):1259–60.
- Jelic TM, Barreta TM, Yu M, et al. Primary, extranodal, follicular non-Hodgkin lymphoma of the gallbladder: Case report and a review of the

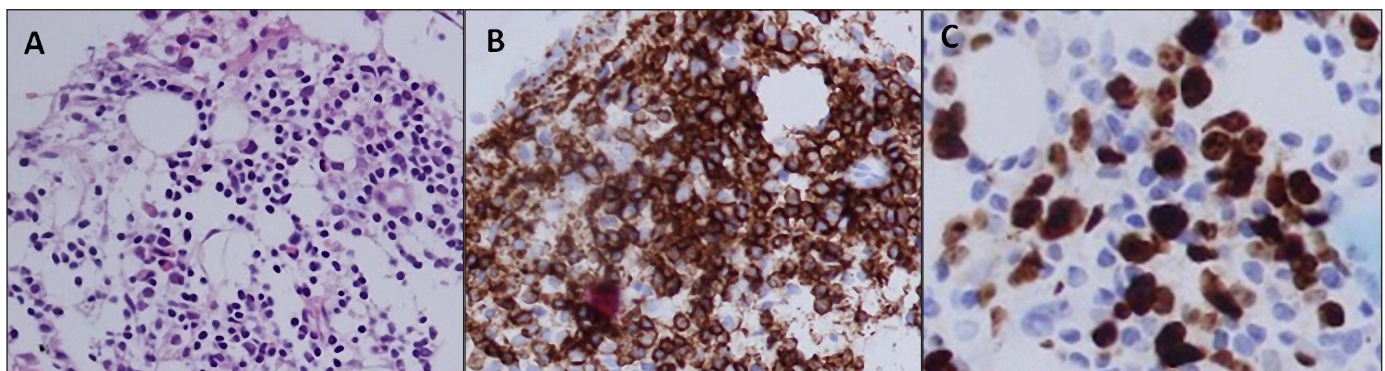


Figure 2. (A) H&E stain of the bone marrow biopsy showed severely hypocellular marrow and relatively increased interstitial small to medium-sized lymphoid cells. Immunohistochemistry of the biopsy confirmed diffuse large B-cell lymphoma with (B) positive CD20 and (C) positive Ki67.

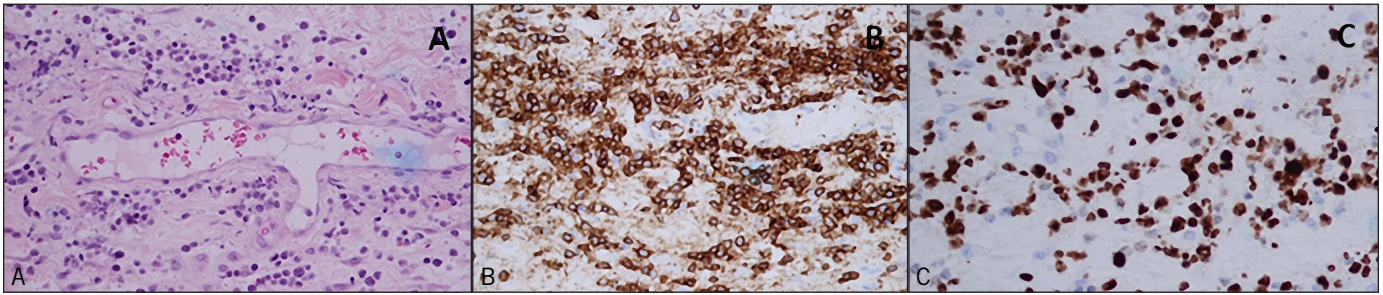


Figure 3. (A) H&E stain of the gallbladder biopsy showed atypical medium lymphoid cell infiltrate along mucosa. Immunohistochemistry of the biopsy confirmed diffuse large B-cell lymphoma with (B) positive CD20 and (C) positive Ki67.

literature. *Leuk Lymphoma*. 2004;45(2):381–7.

7. Mani H, Climent F, Colomo L, et al. Gallbladder and extrahepatic bile duct lymphomas: Clinicopathological observations and biological implications. *Am J Surg Pathol*. 2010;34(9):1277–86.
8. Ferluga D, Luzar B, Gadzijev EM. Follicular lymphoma of the gallbladder and extrahepatic bile ducts. *Virchows Arch*. 2003;442(2):136–40.

Publish your work in ACG Case Reports Journal

ACG Case Reports Journal is a peer-reviewed, open-access publication that provides GI fellows, private practice clinicians, and other members of the health care team an opportunity to share interesting case reports with their peers and with leaders in the field. Visit <http://acgcasereports.gi.org> for submission guidelines. Submit your manuscript online at <http://mc.manuscriptcentral.com/acgcr>.