# Hidden in the Wall: Chronic Lymphocytic Leukemia Disguised as Chronic Cholecystitis

Austin Bordelon, OMS III, James Bordelon, Jr., MD FACS
Edward Via College of Osteopathic Medicine – Louisiana Campus, Monroe, LA
Avoyelles Hospital, Marksville, LA

## Case Presentation

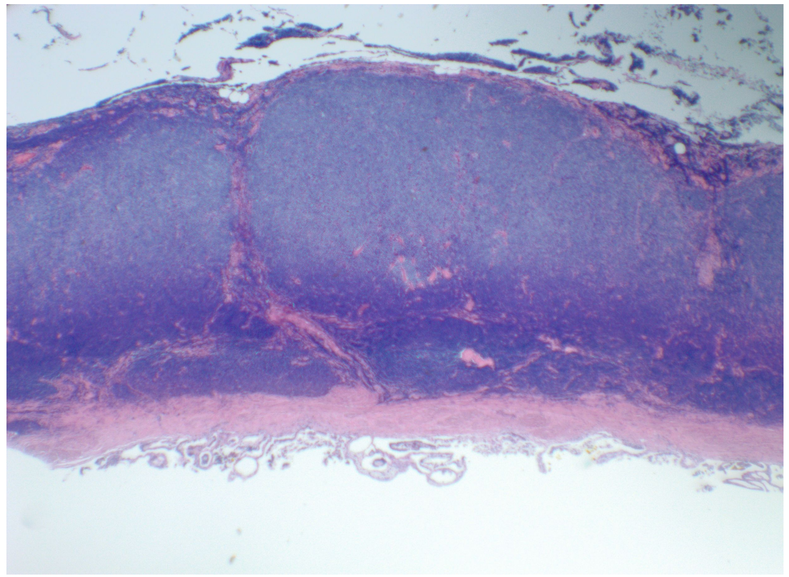
- A 70-year-old female presented with right upper quadrant (RUQ) abdominal pain radiating to the back, occasional nausea, and infrequent vomiting for 3 months. She denied fever, skin changes, or changes in stool color and frequency.
- Past medical history: essential hypertension and hyperlipidemia.
- Physical exam: active bowel sounds, no tenderness to palpation of the abdomen, and no rebound tenderness or guarding.
- Abdominal U/S: sludge and adenomyomatosis; positive Murphy's sign.

## Workup and Outcome

- General surgery was consulted, and a laparoscopic cholecystectomy was ordered.
- Preoperative laboratory studies:
  - CBC with auto-differential: WBC 19.4 K/mcL, lymphocytes 63.6%, eosinophilia 5.3%, and neutrophils 26.1%.
  - Hemoglobin and hematocrit were within normal range.
- Pathology: thick-walled gallbladder with dense lymphocytic infiltrate in the muscularis and serosal layers (Figure A).
  - Immunohistochemical staining: CD20 and CD79a positive (Figure B); background T cells observed with a CD3 stain; CD5, CD23, and BCL2 positive; SOX11, cyclin D, CD10, and BCL6 negative.
- Flow cytometric immunophenotyping: 45% of the total sample expressing CD5, CD19, CD20, CD22, CD23, HLA-DR, and CD45, and exhibit kappa immunoglobin light chain restriction, a phenotype characteristic of CLL.
- CT: malignant-appearing lymphadenopathy (LAD) in both axilla; minimal LAD of the right hilum; malignant-appearing periaortic, pericaval, and periportal LAD; LAD along both iliac nodal chains; and a diffusely thick-walled appearance of the stomach.
- Hematology/oncology was subsequently consulted.
- PET/CT: enlarged lymph nodes (LN) throughout the nodal compartments of the neck, especially in posterior triangle; enlarged LN in axillary regions and lateral chest wall bilaterally with diffuse localizing low FDG uptake.
- FISH testing: deletion of chromosome 13q14.
- At her follow-up visit, the patient reported one episode of severe RUQ pain lasting several hours; the patient denied any nausea, vomiting, or diarrhea during this episode.
- The patient was started on ibrutinib and denied any complaints or new side effects at her two week follow-up.

## Images

A



B

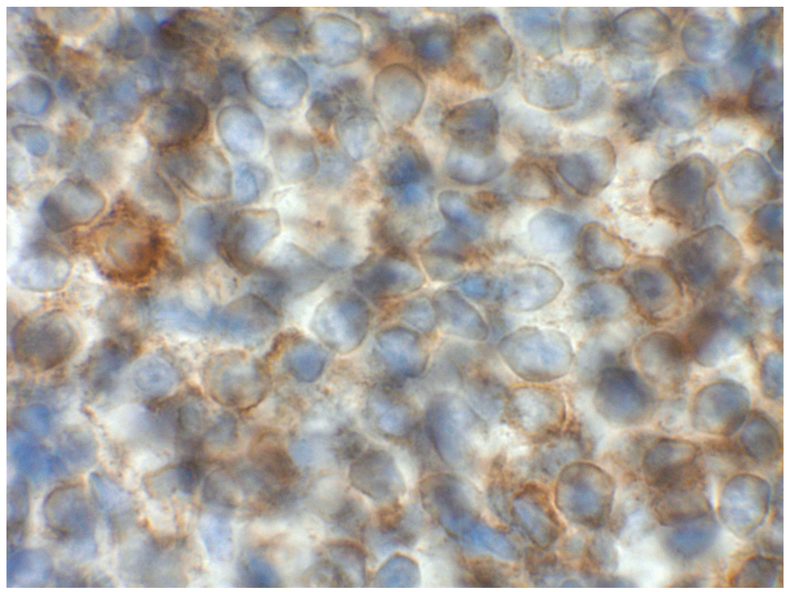


**Figure A**: Low power H&E examination revealing diffuse infiltration of the gallbladder. Tumor is present in groups or clusters in the muscularis (bottom) and serosal (top) layers.
**Figure B**: CD79a immunohistochemical stain showing a positive staining of the cell membrane.

## Discussion

- CLL/SLL rarely occurs in the gallbladder. Primary gallbladder lymphomas occurring more frequently include mucosa-associated lymphoid tissue (MALT), extranodal marginal zone lymphoma, and diffuse large B-cell lymphoma.
- Adenomyomatosis was not a reported histologic finding. The solid phase of the tumor created "mounds" in the muscularis and serosal layers. This could lead to a false adenomyomatosis interpretation.
- The perimuscular and serosal infiltrate could have contributed to biliary stasis and increased intraluminal pressure in cholecystitis.
- CT showed significant pericaval and periportal LAD, which could have caused a degree of portal vein compression to manifest post-cholecystectomy RUQ abdominal pain.
- Deletion of 13q14 is the most common alteration with CLL. 13q deletions are generally associated with a good prognosis
- No literature has been published on whether surgery could be avoided in patients with CLL with gallbladder involvement.
- This case does reinforce the importance of routine histological examination of cholecystectomy specimens.

## Conclusion

This case illustrates the potential for CLL to arise in the gallbladder and mimic a cholecystitis-like presentation. Consideration of CLL may evolve the differential diagnosis for RUQ pain as well as promote studies to determine whether surgical intervention is indicated prior to medical treatment.

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