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.

A 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.

Fluorodeoxyglucose (FDG) PET/CT: enlarged lymph nodes (LN) throughout the nodal compartments of the neck, especially in posterior triangle; malignant-appearing lymphadenopathy (LAD) in both axilla.

Immunohistochemical staining: CD20 and CD79a positive.

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.

The patient was started on ibrutinib and denied any complaints of nausea, vomiting, or diarrhea during this episode.

At her follow-up visit, the patient reported one episode of diarrhea.

FISH testing: deletion of chromosome 13q14.

Hematology/oncology was subsequently consulted.

Workup and Outcome

- General surgery was consulted, and a laparoscopic cholecystectomy was performed.

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.

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 periporal 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.

References