Intravascular Large B Cell Lymphoma of the Gallbladder

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Running Head: Primary Non-Hodgkin’s Lymphoma of the Gallbladder

To the Editor,

Intravascular large B cell lymphoma (IVLCL) is a rare type of extranodal B cell lymphoma characterized by the growth of lymphoma cells within the lumina of small vessels. Two major patterns of clinical presentation have been recognized: the first is in European countries with brain and skin involvement and the second in the Asian countries where patients typically present with multiorgan failure, hepatosplenomegaly, pancytopenia and hemophagocytic syndrome [1-5]. Primary IVLCL of the gallbladder are exceedingly rare.

A 60-year-old male patient was admitted to hospital with fever, abdominal pain and weight loss. Physical examination showed approximately 4 cm diameter epigastric mass and absence of hepatosplenomegaly and lymphadenopathy. Laboratory test revealed anemia (hemoglobin 10 g/dl), with normal leukocytes and platelets. Peripheral smear showed normocytic–normochromic anemia without any abnormal cells. An increase in liver function tests were positive laboratory findings (AST: 240U/L, ALT: 240U/L, ALP: 740U/L, GGT: 80U/L, total bilirubin/direct bilirubin: 2.06/1.2 mg/dL). A contrast enhanced abdominal computerized tomography (CT) for further evaluation revealed a greater curvature-based mass of 8 x 5 x 5.5 cm in size, at the level of distal gastric corpus significantly narrowing the gastric
lumen (Figure 1.A-B). CT also showed hypodense areas in liver segments 5 and 8, and gallbladder stones the largest being 1.5 cm in diameter. A dynamic liver magnetic resonance imaging (MRI) was performed to characterize liver lesions. MRI revealed calculous cholecystitis, choledocholithiasis and a mass lesion of 6.5x3 cm in size, thought to be based on the greater curvature at the corpus of the stomach. With no signs of distant metastasis, the patient primarily underwent both cholecystectomy and partial gastrectomy. Surgical biopsy of liver lesions revealed nonspecific inflammatory changes, and no evidence of tumor. Histologic examination confirmed GIST of the stomach. Histological analysis of cholecystectomy material showed cells with irregular nuclear contours and open chromatin confined to small vessels, which were characteristics of the intravascular large B-cell lymphoma phenotype. These cells were strongly positive for CD20 stain (Figure 1.C-D). Since intravascular infiltrations are easily missed on H&E stained sections, bone marrow and liver biopsy slides are also stained by CD 20 and no evidence of intravascular lymphoma was found. A whole-body integrated positron electron tomography- CT scan for tumor staging showed diffusely increased uptake of 18F-FDG the liver (SUVmax:7.0) and multiple lymph node lesions including submandibular, preauricular, cervical and jugular lymph nodes (SUVmax:8.3). He was treated with six cycles of an R-CHOP regimen. He didn't show any evidence of recurrence (normal gastroscopy and CT scan) at 36 months follow-up.

IVLCLBCL usually occurs in adults in the sixth and seventh decades. The tumor is often clinically unsuspected and can be easily overlooked on biopsy. The diagnosis is most commonly made at autopsy. The lymphoma cells are generally large with round nuclei and prominent nucleoli. The malignant cells uniformly express pan-B-cell antigens (CD20, CD79a) and variably express other antigens such as CD5 (38%) and CD10 (13%) [2]. There are no pathognomonic laboratory or radiologic abnormalities associated with IVLBCL. Abdominal CT and MRI findings of our patient with IVLBCL were nonspecific. What is the pathogenic mechanism for simultaneous presentation gallbladder intravascular B-cell lymphoma with GIST? An unifying hypothesis supports a single underlying genetic instability that could have led to both diseases. The finding of two different neoplasms in our patient seems to be coincidental rather than related with the same pathogenic triggering. The central nervous system (CNS) symptoms, skin manifestations, bone marrow involvement and hemophagocytic syndrome were the most common clinical and laboratory abnormalities but it was not seen in our case report. However, our patient presented with non-specific symptoms and laboratory abnormalities. The ability of IVLBCL to involve any organ system further makes it very difficult to suspect this condition in a patient with a rare presentation such as ours.

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REFERENCES


**Figure 1.A-B.** Axial CT image showing a greater curvature based intraluminal gastric mass (white arrows), stones in the gallbladder (asterix) and a vague hypodense area, which was proven to be caused by cholangitis, in the segment 5 of the liver (black arrow). **C.** Intravascular B-cell lymphoma. The numerous dilated blood vessels were filled with a large, atypical, centroblast-like lymphoid cells (HE, x400). **D.** CD20-positive atypical lymphoid cells (x400).