The Fluid Facade: Acute Ascites in a Child Uncovers High-Grade B Cell Lymphoma

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A 12-year-old male presented with a two-week history of acute weight loss, night sweats, right upper quadrant pain and progressive abdominal distention. He was previously in a good state of health without any prior history of cardiac, renal, or liver disease. He denied any recent infectious exposure or travel outside the country. On exam, he had moderately severe abdominal distention with no hepatosplenomegaly. Initial labs showed mild leukocytosis and elevated erythrocyte sedimentation rate. Liver function tests, including liver enzymes, direct and indirect bilirubin as well as albumin were within normal range for age. Prothrombin time with international normalized ratio was also normal. Liver ultrasound showed normal echotexture with no suspicious lesions, prompting additional investigations.

To identify the cause of ascites, a diagnostic paracentesis was performed that showed serum ascites albumin gradient of 0.9 g/dl, suggestive of a peritoneal cause of ascites. Abdominal computed tomography (**Image 1**) showed peritoneal nodularity, thickening, and diffuse intraabdominal lymphadenopathy concerning for an oncologic process. Pediatric oncology and surgery were consulted, and patient

Image 1. Computed tomography imaging of abdomen and pelvis with intravenous contrast demonstrates a thick rind of peritoneal thickening/peritoneal caking (red arrows) with diffuse pathologically enlarged lymphadenopathy. Blue arrows demonstrate a more focal matted conglomeration of adenopathy in the right lower quadrant.

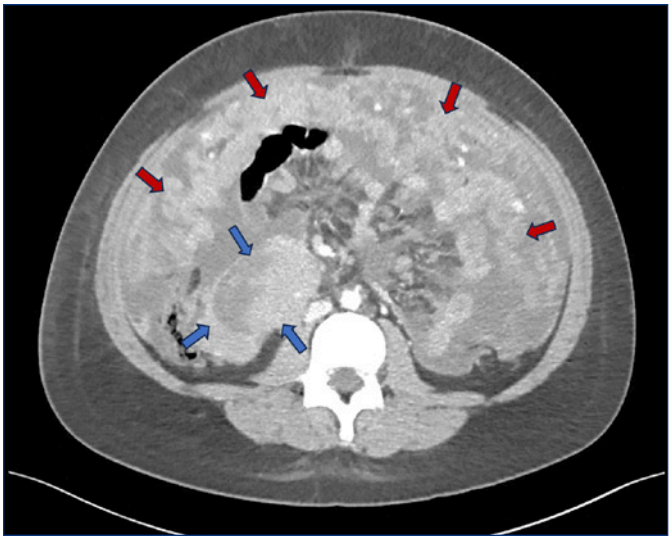


Image 2. Histopathology of lymph node specimens demonstrates complete effacement of the normal lymphoid architecture by a monotonous proliferation of atypical lymphoid cells consistent with a diagnosis of lymphoma. Red arrows point towards some of these atypical cells.

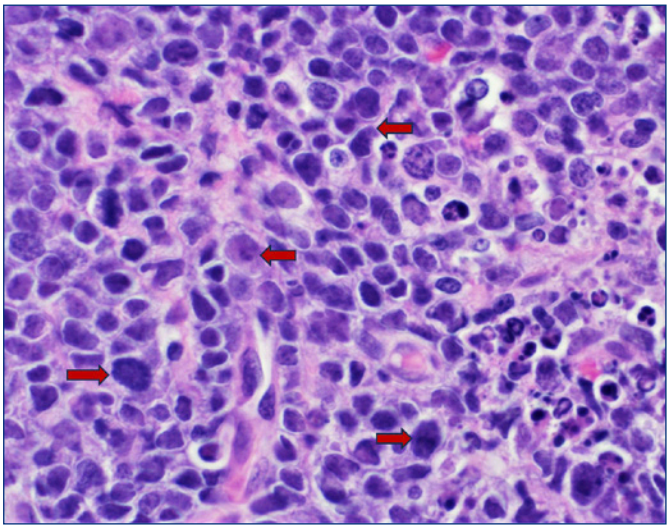
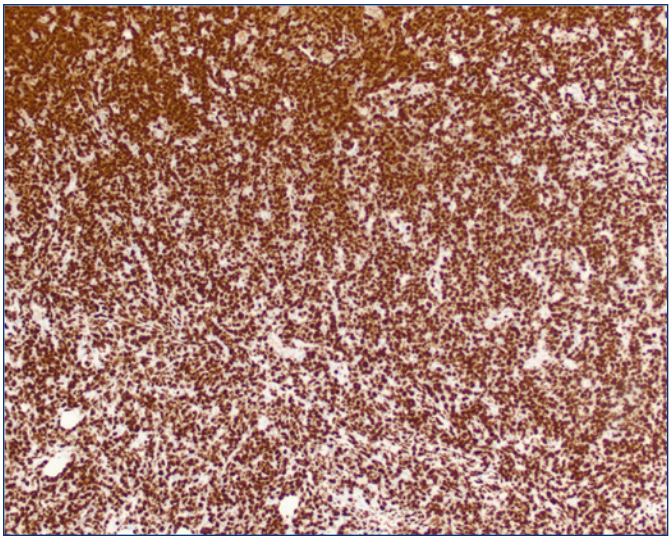


Image 3. Immunohistochemical staining on lymph node and omental specimens utilizing a monoclonal antibody against Ki-67 (well-established marker of cellular proliferation) demonstrates that almost 100% of the cell nuclei exhibit positive staining (brown). This exceptionally high proliferation index correlates with the presence of a rapidly growing tumor.



was then scheduled for a diagnostic laparoscopy that demonstrated a serosanguinous peritoneal fluid with omental and peritoneal caking. Pathology specimen from omental nodules and intra-abdominal lymph nodes confirmed high-grade B cell lymphoma (**Images 2,3**). Tuberculosis infection was ruled out with negative T-Spot test. Patient was started on chemotherapy for high grade B cell lymphoma and follow up imaging showed significant improvement in ascites and overall tumor burden. Now one year post-chemotherapy completion, patient continues to do overall well.

High-grade B cell lymphoma is a rare malignancy in pediatrics that can present with a variety of symptoms, most commonly being weight loss, night sweats, and lymphadenopathy.[1] In pediatric patients, common cause of ascites include liver diseases that lead to cirrhosis and hepatic failure, nephrotic syndrome, congestive heart failure, and infections (such as tuberculosis).[2] Less common causes include malignancies (such as lymphoma or leukemia).[3] Pediatric healthcare providers typically see children with more benign and commonly occurring causes of ascites. In cases where liver function tests and liver imaging are normal, it's prudent to expand the workup to diagnose the less common presentations in a timely manner.[3]

High-grade B cell lymphoma should be considered in the differential diagnosis of pediatric patients presenting with acute ascites as early diagnosis and prompt treatment are essential for optimal outcomes.

References

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Disclosures

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