Case Report

Abdominal Pain of Unusual Origin in a Teen

Urgent message: Always be mindful of the 'zebra' in a stampede of 'horses' in the differential diagnosis.

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Young adults often present to urgent care clinics with abdominal pain. In most cases, this symptom is secondary to a virus or assorted other issues in the gut. However, the broader differential includes a whole host of additional conditions, a few of which may catch an urgent care practitioner a little off guard.

Case Presentation

J.H. is a 19-year-old Hispanic male presenting with abdominal pain and shortness of breath for the last 4 days. He had visited the urgent care clinic about 2 days before with similar symptoms and was discharged with a diagnosis of muscle strain. J.H. returned with persistent symptoms and he indicates that the pain is mostly along the left upper quadrant. It is not associated with eating or drinking, and his urine output and bowel movements are normal (no black or bloody discoloration).

The patient also denies nausea, vomiting or diarrhea, fever, chest pain, or rash. He reports shortness of breath, but believes it's related to trouble inhaling deeply because of the abdominal pain. Of note, J.H. reports night sweats over the last 4 to 5 days, but no weight loss. He has taken acetaminophen or ibuprofen for the pain without much relief, and denies alcohol or drug use. Three weeks before presentation, he started working at a job where he lifts very heavy bags of food. The note from the previous visit also documents recent recovery from upper respiratory symptoms.

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Observations and Findings

Physical exam

Evaluation of the patient revealed the following:
Temp: 99 °F
BP: 140/76
HR: 93
RR: 20
O_2 Sat: 100%
General: Well-nourished, well-developed male in no acute distress
Chest: CTAB, no RRW
CVS: RRR, no mrg
ABD: NABS, soft, with tenderness to palpation along left

upper quadrant and mild guarding, no rebound or rigidity, non-distended, no masses and no appreciable organomegaly on exam.

Laboratory Results

J.H. presented to the urgent care clinic during hours when the laboratory was closed and imaging services other than for plain films were unavailable. Labs were drawn for the main hospital to run, and an ultrasound (U/S) of the abdomen was set up for the following morning.

The results were as follows:

Chemistries were within normal limits except for AST (SGPT) of 64 U/L
Monospot: negative
CBC: WBC 14.8 th/cmm; HCT: 41.5%;
Hgb: 14.8 gm/dL; Plt: 35 th/cumm

Man Diff:
Poly: 5%
Band: 9%
Lymph: 8%
Mono:3%
Eos: 0%
Baso: 1%
Blasts: 73%
Myelos: 1%

Peripheral smear revealed a monomorphic population of medium-sized leukocytes with scant cytoplasm, notched to irregular nuclei, finely dispersed to slightly clumped chromatin, and conspicuous nucleoli, consistent with blasts. Rare blasts showed azurophilic granules and cytoplasmic vacuoles, but Auer rods were not seen. Also noted were mature neutrophils and lymphocytes as well as circulating myeloid precursors and occasional nucleated red blood cells. There was also marked thrombocytopenia. The findings were those of acute leukemia with morphology most consistent with acute lymphoblastic leukemia (ALL).

Ultrasound: Hepatosplenomegaly

Diagnosis

B-cell ALL

Course and Treatment

From the urgent care clinic where he had the U/S performed, J.H. was sent to the main hospital for urgent evaluation of hepatosplenomegaly in light of the smear findings of blasts. He was urgently admitted to the pediatric oncology service for further work up and management, which elucidated the ALL diagnosis.

As urgent care physicians, we must be vigilant in care for our patients and always be on the look out for those zebras even though we are often working in a stampede of horses.

Discussion

The differential diagnosis for abdominal pain is expansive and includes, at a minimum, a myriad of gastrointestinal (GI) causes, conditions with visceral organ involvement, and conditions with soft-tissue involvement. Lacking any other GI symptoms or association with food, conditions that are fairly self-contained to the stomach and intestines—such as gastritis, reflux, ulcers, and gastroenteritis—fall low on the differential. Guarding on exam is more concerning for a differential consistent with visceral organ involvement (such as conditions that result in splenomegaly, hepatomegaly, or pancreatitis) or conditions with transmural effects on the intestines (such as diverticulitis or advancing tumor). Soft-tissue involvement, such as muscle sprain or spasm, is also of concern, particularly secondary to the patient's new employment that requires significant physical exertion. However, the patient also complained of several days of night sweats, which would be more in line with an infectious or inflammatory cause, such as mononucleosis, cancer, or abscess. Mononucleosis also was at the top of the differential, given the patient's age and symptoms. Therefore, we were a bit more than surprised when the U/S demonstrated hepatosplenomegaly, and the CBC returned with such low platelets and atypical lymphocytes.

Acute Lymphocytic Leukemia: A brief review

Precursor B-cell ALL is the cause of about 2% of the lymphoid cancers diagnosed in the United States. Although it is seen most often in children, it does occur in adults. The median age of presentation in adults is about 39. Frequency is slightly higher in males than females, and Hispanics have the highest incidence of any ethnic group.

Presentation can be acute or more gradual, and most symptoms are secondary to anemia, neutropenia, or thrombocytopenia. Symptoms on presentation can include fatigue, easy or spontaneous bruising, infections and the B symptoms of fever: night sweats or unintentional weight loss. As many as half of these patients also may present with hepatomegaly, splenomegaly or lymphadenopathy.

Diagnosis is made based on examination of bone marrow aspirate with or without biopsy, and results of flow cytometric and cytogenetic evaluation. B-cell lineage is distinguished from T-cell by expression of B-cell antigens (such as CD19 and CD22) and lack of T-cell antigens (such as CD3). Leukemia (precursor B-cell ALL) is differentiated from lymphoma (precursor B-cell lymphoblastic lymphoma) by the presence of more than 25% bone marrow blasts.

Prognosis for patients with ALL is generally dependent on age and genomic factors. It is better for children in general, and particularly children with hyperdiploidy and t(12;21) translocation (85% to 90% long-term survival rates). On the other hand, prognosis is poorer for infants younger than age 1 year and adults, as well as those with hypodiploidy and Ikaros mutations. In adults, t(9;22) and t(v11q23) abnormalities are associated with poor prognosis.

Conclusion

The distinguishing and concerning features in this patient presentation were repeat presentation within a couple days, night sweats for several days, and tenderness to palpation and mild guarding on abdominal exam. Together, those features could add up to something with a fairly innocuous course, such as mononucleosis, or something much more serious, such as ALL. As urgent care physicians, we must be vigilant in care for our patients and always be on the look out for those zebras even though we are often working in a stampede of horses. ■

Reference

Freedman, Arnold S. "Clinical manifestations, pathologic features, and diagnosis of precursor B-cell acute lymphoblastic leukemia/lymphoma. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA, 2011