

**QUESTION**  
 A 65-year-old male patient with a long history of hypertension and hyperlipidemia presents to the clinic with a 2-week history of increasing fatigue, weight loss, and intermittent fevers. He reports that he has been unable to complete his usual activities of daily living. He has no cough, hemoptysis, or chest pain. He has no recent travel history and no contact with anyone who has been ill. He is currently on lisinopril and atorvastatin. His medical history is significant for type 2 diabetes mellitus, chronic kidney disease, and a recent diagnosis of atrial fibrillation. He is a former smoker and does not drink alcohol. He has no known drug allergies. His current medications include lisinopril, atorvastatin, metformin, and warfarin. He has a body mass index of 28 kg/m<sup>2</sup>. His vital signs are temperature 38.0°C, heart rate 102 bpm, blood pressure 145/90 mmHg, and respiratory rate 18 breaths per minute. His physical examination is unremarkable. His laboratory studies show hemoglobin 10.5 g/dL, hematocrit 32%, and ferritin 150 ng/mL. His chest X-ray is normal. His computed tomography scan of the chest shows no abnormalities. His echocardiogram shows a normal left ventricular size and function. His electrocardiogram shows atrial fibrillation. His complete blood count shows a white blood cell count of 12,000 cells/mm<sup>3</sup> with a neutrophilic leukocytosis. His serum lactate dehydrogenase is elevated at 450 U/L. His serum ferritin is 150 ng/mL. His serum ferritin is 150 ng/mL.

**ANSWER**  
 The patient's presentation is consistent with a diagnosis of acute leukemia. The most likely type of leukemia is acute myeloid leukemia (AML). The patient's symptoms of fatigue, weight loss, and intermittent fevers are common in AML. The physical examination is unremarkable, which is also typical for AML. The laboratory studies show a hemoglobin of 10.5 g/dL, a hematocrit of 32%, and a ferritin of 150 ng/mL. The chest X-ray is normal, and the computed tomography scan of the chest shows no abnormalities. The echocardiogram shows a normal left ventricular size and function. The electrocardiogram shows atrial fibrillation. The complete blood count shows a white blood cell count of 12,000 cells/mm<sup>3</sup> with a neutrophilic leukocytosis. The serum lactate dehydrogenase is elevated at 450 U/L. The serum ferritin is 150 ng/mL.

## ACUTE LEUKEMIA

Acute leukemia is a group of hematologic malignancies characterized by the presence of immature, blast cells in the bone marrow and peripheral blood. The two main types are acute myeloid leukemia (AML) and acute lymphoblastic leukemia (ALL). AML is more common in older adults, while ALL is more common in children. The symptoms of acute leukemia are nonspecific and can include fatigue, weight loss, and intermittent fevers. The physical examination is usually unremarkable. The laboratory studies show a hemoglobin of 10.5 g/dL, a hematocrit of 32%, and a ferritin of 150 ng/mL. The chest X-ray is normal, and the computed tomography scan of the chest shows no abnormalities. The echocardiogram shows a normal left ventricular size and function. The electrocardiogram shows atrial fibrillation. The complete blood count shows a white blood cell count of 12,000 cells/mm<sup>3</sup> with a neutrophilic leukocytosis. The serum lactate dehydrogenase is elevated at 450 U/L. The serum ferritin is 150 ng/mL.

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