

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 has not been in contact with anyone who has been ill. He has no known drug allergies and is currently on lisinopril, atorvastatin, and aspirin. His medical history is significant for type 2 diabetes mellitus, chronic kidney disease, and a recent diagnosis of atrial fibrillation. He has a 20-pack-year smoking history and a 15-year history of alcohol consumption. He is currently taking warfarin for his atrial fibrillation. His current medications are lisinopril 10 mg daily, atorvastatin 20 mg daily, aspirin 81 mg daily, and warfarin 2 mg daily. He has a body mass index of 28 kg/m² and a body temperature of 38.2°C. His heart rate is 98 beats per minute, blood pressure is 140/90 mmHg, and respiratory rate is 18 breaths per minute. His oxygen saturation is 96% on room air. His physical examination is unremarkable. His laboratory studies show a hemoglobin of 12 g/dL, hemoglobin A1c of 7.5%, and a serum ferritin of 100 ng/mL. His chest X-ray is normal. His computed tomography scan of the chest is also normal. His echocardiogram shows a normal left ventricular size and function. His electrocardiogram shows a normal sinus rhythm. His complete blood count shows a white blood cell count of 10,000 cells/mm³ with a normal differential. His serum electrolytes are within normal limits. His renal function is stable. His liver function tests are also within normal limits. His prothrombin time is 15 seconds. His international normalized ratio is 1.2. His serum creatinine is 1.2 mg/dL. His serum albumin is 4.0 g/dL. His serum total protein is 7.5 g/dL. His serum uric acid is 5.0 mg/dL. His serum lactate dehydrogenase is 100 U/L. His serum ferritin is 100 ng/mL. His serum iron is 100 µg/dL. His serum transferrin saturation is 20%. His serum erythropoietin is 10 U/L. His serum erythropoietin level is low. His serum erythropoietin level is low. His serum erythropoietin level is low.

ANSWER
 The patient's symptoms and physical examination findings are consistent with a diagnosis of anemia of chronic disease. The patient's laboratory studies show a low serum ferritin level, which is consistent with a diagnosis of anemia of chronic disease. The patient's chest X-ray and computed tomography scan of the chest are normal, which rules out a diagnosis of lung cancer. The patient's echocardiogram shows a normal left ventricular size and function, which rules out a diagnosis of heart failure. The patient's electrocardiogram shows a normal sinus rhythm, which rules out a diagnosis of atrial fibrillation. The patient's complete blood count shows a white blood cell count of 10,000 cells/mm³ with a normal differential, which rules out a diagnosis of leukemia. The patient's serum electrolytes are within normal limits, which rules out a diagnosis of electrolyte imbalance. The patient's renal function is stable, which rules out a diagnosis of kidney disease. The patient's liver function tests are also within normal limits, which rules out a diagnosis of liver disease. The patient's prothrombin time and international normalized ratio are within normal limits, which rules out a diagnosis of coagulopathy. The patient's serum uric acid is within normal limits, which rules out a diagnosis of gout. The patient's serum lactate dehydrogenase is within normal limits, which rules out a diagnosis of hemolysis. The patient's serum ferritin is 100 ng/mL, which is low. The patient's serum iron is 100 µg/dL, which is low. The patient's serum transferrin saturation is 20%, which is low. The patient's serum erythropoietin is 10 U/L, which is low. The patient's serum erythropoietin level is low.

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