

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 has no alcohol use. He is currently taking warfarin for his atrial fibrillation. His physical examination is unremarkable. His laboratory studies show a hemoglobin of 10 g/dL, a hematocrit of 30%, and a ferritin level of 100 ng/mL. His chest X-ray is normal. His echocardiogram shows a normal left ventricular size and function. His electrocardiogram shows a normal sinus rhythm. His computed tomography scan of the chest is normal. His bone marrow biopsy shows a hypercellular marrow with a normal myeloid-to-erythroid ratio. His peripheral blood smear shows a normochromic, normocytic anemia with a few teardrop-shaped red blood cells. His reticulocyte count is 1%. His serum lactate dehydrogenase level is 1200 U/L. His serum uric acid level is 6 mg/dL. His serum creatinine level is 1.5 mg/dL. His serum ferritin level is 100 ng/mL. His serum ferritin level is 100 ng/mL.

ANSWER
 The patient's presentation is consistent with a diagnosis of iron deficiency anemia. The most likely cause of his iron deficiency is chronic blood loss, which is most commonly due to gastrointestinal bleeding in patients with a long history of hypertension and hyperlipidemia. The patient's laboratory studies show a normochromic, normocytic anemia with a low ferritin level, which is consistent with iron deficiency. The patient's chest X-ray, echocardiogram, and electrocardiogram are normal, which rules out other causes of anemia such as heart failure or chronic kidney disease. The patient's bone marrow biopsy shows a hypercellular marrow with a normal myeloid-to-erythroid ratio, which is consistent with iron deficiency anemia. The patient's peripheral blood smear shows a normochromic, normocytic anemia with a few teardrop-shaped red blood cells, which is also consistent with iron deficiency anemia. The patient's reticulocyte count is low, which is consistent with iron deficiency anemia. The patient's serum lactate dehydrogenase level is elevated, which is consistent with iron deficiency anemia. The patient's serum uric acid level is elevated, which is consistent with iron deficiency anemia. The patient's serum creatinine level is normal, which rules out chronic kidney disease as a cause of his anemia.

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