

## QUESTION

A 62-year-old woman with a 20-year history of rheumatoid arthritis (RA) presents to her primary care physician with a 2-week history of increasing weakness and fatigue. She reports that she has been unable to perform her usual activities of daily living, such as climbing stairs and carrying groceries. She has also noticed some swelling in her hands and feet. Her medical history is significant for RA, hypertension, and type 2 diabetes mellitus. She is currently taking prednisone 5 mg daily, hydroxychloroquine 400 mg twice daily, and aspirin 81 mg daily. Her last laboratory tests were normal 6 months ago.

On physical examination, she appears pale and has a body mass index of 28. Her vital signs are stable. There is mild tachycardia with a regular rhythm and a heart rate of 98 beats per minute. Her lungs are clear to auscultation. There is mild lower extremity edema, and her hands show mild joint swelling. Her neurological examination is normal. Her laboratory tests show a hemoglobin of 10.2 g/dL, hematocrit of 30.8%, and mean corpuscular volume of 100 fL. Her serum ferritin is 150 ng/mL, and her serum iron is 150 µg/dL. Her total iron-binding capacity is 300 µg/dL, and her transferrin saturation is 50%. Her serum creatinine is 1.2 mg/dL, and her estimated glomerular filtration rate is 60 mL/min/1.73 m<sup>2</sup>. Her serum vitamin B12 level is 180 pg/mL, and her methylmalonic acid level is 0.2 µg/mL. Her serum folate level is 12 µg/mL, and her homocysteine level is 15 µmol/L.

## ANSWER

The patient's clinical presentation and laboratory findings are consistent with iron deficiency anemia. The low hemoglobin and hematocrit, along with the high mean corpuscular volume, are characteristic of this condition. The elevated serum ferritin and serum iron levels, along with the low total iron-binding capacity and transferrin saturation, further support this diagnosis. The patient's history of RA and long-term use of prednisone may contribute to her iron deficiency, as chronic inflammation and corticosteroid use can lead to decreased iron absorption and increased iron loss.

## DISCUSSION

Iron deficiency anemia is a common condition characterized by a low hemoglobin and hematocrit, along with a high mean corpuscular volume. It is caused by a deficiency of iron, which is essential for the synthesis of hemoglobin. The most common cause of iron deficiency anemia is chronic blood loss, but it can also be caused by decreased iron absorption or increased iron loss.

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