

QUESTION

A 60-year-old male patient with a long history of hypertension and chronic kidney disease (CKD) presents to the clinic with a 2-week history of increasing fatigue and weakness. He reports a recent weight loss of approximately 10 pounds and has noticed a decrease in his energy levels. His medical history is significant for hypertension, CKD (stage 3), and a recent diagnosis of anemia. He is currently on lisinopril for hypertension and erythropoietin for his anemia.

On physical examination, the patient appears pale and has a heart rate of 100 beats per minute. His blood pressure is 150/90 mmHg. Laboratory tests reveal a hemoglobin level of 10 g/dL, hematocrit of 30%, and a mean corpuscular volume (MCV) of 80 fL. His serum ferritin is low, and his transferrin saturation is also decreased. His renal function is stable, with a serum creatinine of 1.8 mg/dL and an estimated glomerular filtration rate (eGFR) of 30 mL/min/1.73 m².

Given the patient's clinical presentation and laboratory findings, the most likely cause of his anemia is:

- Iron deficiency anemia
- Chronic kidney disease (CKD)
- Acute kidney injury (AKI)
- Thrombotic thrombocytopenic syndrome (TTP)

ANSWER

The correct answer is **B. Chronic kidney disease (CKD)**. The patient's anemia is most likely due to the underlying CKD. CKD is a common cause of anemia, particularly in the later stages of the disease. The pathophysiology involves decreased production of erythropoietin by the kidneys, which leads to a reduced number of red blood cells. Additionally, CKD can cause a functional iron deficiency due to decreased iron absorption and increased iron loss in the urine. The patient's laboratory findings, including a low hemoglobin level, low ferritin, and low transferrin saturation, are consistent with anemia of chronic disease (ACD) or CKD. The other options are less likely: iron deficiency anemia (A) would typically show a low ferritin and a low transferrin saturation, but the patient's ferritin is also low; acute kidney injury (C) would typically show a rapid decline in renal function; and TTP (D) would typically show a microangiopathic process with thrombocytopenia and hemolytic anemia.

KEY POINTS:

1. CKD is a common cause of anemia, particularly in the later stages of the disease.

QUESTION



ANSWER

The correct answer is **B. Chronic kidney disease (CKD)**. The patient's anemia is most likely due to the underlying CKD. CKD is a common cause of anemia, particularly in the later stages of the disease. The pathophysiology involves decreased production of erythropoietin by the kidneys, which leads to a reduced number of red blood cells. Additionally, CKD can cause a functional iron deficiency due to decreased iron absorption and increased iron loss in the urine. The patient's laboratory findings, including a low hemoglobin level, low ferritin, and low transferrin saturation, are consistent with anemia of chronic disease (ACD) or CKD. The other options are less likely: iron deficiency anemia (A) would typically show a low ferritin and a low transferrin saturation, but the patient's ferritin is also low; acute kidney injury (C) would typically show a rapid decline in renal function; and TTP (D) would typically show a microangiopathic process with thrombocytopenia and hemolytic anemia.

KEY POINTS:

1. CKD is a common cause of anemia, particularly in the later stages of the disease.