Key Learning Points

Barkley

Case Diagnosis: Iron Deficiency Anemia

1) **Microcytic anemia is highly suggestive of iron deficiency.**
   - Microcytosis is an otherwise uncommon hematological finding.
   - The most likely cause of microcytosis in an anemic patient is iron deficiency. Iron deficiency results from:
     - Chronic blood loss
     - Dietary deficiency
   - Microcytosis is found in dogs with portosystemic shunts, but those dogs are not expected to be anemic.
   - Microcytosis without anemia might be noted in some of the Japanese breeds (e.g., the Akita).

2) **Patients with iron deficiency have a variable regenerative response.**
   - About 50% have an absolute reticulocyte count, which is consistent with a mild or moderate regenerative response at the time of diagnosis.

3) **Chronic blood loss, the most common cause of iron deficiency, can be due to:**
   - Gastrointestinal (GI) tract loss
     - This is most likely.
     - Many patients with chronic GI blood loss have normal stools; lack of melena does not exclude this possibility.
   - Loss through the respiratory tract or urinary system

4) **Iron deficiency should be confirmed in a patient with a microcytic anemia.**
   - Evaluate serum ferritin concentrations (the author's preference).
   - Serum iron and iron binding capacity can be used to determine the percent saturation (affected by hemolysis; results can be hard to interpret).
   - Documentation of low serum iron concentration alone is not specific for iron deficiency.
     - Many inflammatory and neoplastic diseases result in iron sequestration.

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