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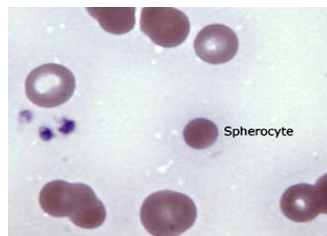


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## **CAUSES OF FELINE ANEMIA – 3 PAGES**



In order to better determine appropriate diagnostics, it is important to classify the anemia as regenerative or non-regenerative. Regenerative anemia would be indicated by a high number of reticulocytes and sometimes other earlier red blood cell precursors, and macrocytosis. Remember that acute blood loss and hemolysis will not show a regenerative response for 2-4 days after the inciting event.

Cats reticulocyte are punctate and larger than in dogs and circulate in large numbers normally and in disease. And must be separated into punctate and aggregate to reflect the different stages of maturation. Therefore, cytology reports regarding red blood cell regeneration must include the aggregate and punctate numbers since aggregates mature in a half day and punctate mature over 10-12 days. Otherwise the reticulocyte report has no value in cats. Also in cats Heinz bodies and punctate reticulocytes resemble one another and may be easily confused. Polychromasia reflects bone marrow erythropoiesis 3-7 days earlier and magnitude reflects strength of erythropoiesis.

Healthy cats have up to 10% Heinz bodies in circulation. Heinz bodies diff: propylene glycol In fish based diets, onion powder in baby food, diabetes, hyperthyroidism, lymphosarcoma, other oxidative processes.

**Regenerative Anemia** indicates blood loss or red cell lysis.

**Blood Loss:** Splenic contraction occurs in the first few hours.

**GI:** Occult blood in feces is indicated but can have false + from myoglobin in meat ingested.

**Intracavitary:** Abdomen Thorax

**External:** Trauma, other

**Hemolysis:** Marked anemia without hypoproteinemia or other evidence of blood loss

**Toxins:** Common toxins include *zinc, acetaminophen, methimazole, benzocaine, propylene glycol, methionine, onions.*

Typically create a Heinz body anemia, visible in peripheral blood smears.

**Infectious Agents:** FeLV\*, *Mycoplasma hemophilus* (hemoplasmosis), *Cytauxzoon felis* (Cytauxzoonosis), *Bartonella* species (possible, hemolytic anemia seen in humans), Ehrlichial species, Anaplasmosis.

(\* FeLV can cause both a hemolytic regenerative anemia and a nonregenerative anemia)

**Primary Immune Mediated Hemolytic Anemia:** not as common in cats as in dogs, based on ruling out other conditions. Look for FELV, *Haemobartonella* (as a trigger, PCR test for *H. felis*), or drug induction. Coombs testing indicated. Marked leukocytosis does not occur in cats as it does in dogs. Spherocytosis is more difficult to identify.

**Secondary Immune Mediated Hemolytic Anemia:** secondary to neoplastic conditions creating an immune response. Thoracic radiographs and abdominal ultrasound would be indicated to evaluate patient for neoplasia.

**Non-Regenerative Anemia** causes include iron deficiency, chronic inflammatory disease, infection (primarily FIV), renal failure, neoplasia, bone marrow abnormalities. Remember that Abyssinian and Somali cats can have hereditary fragile erythrocyte membranes leading to anemia. This may be diagnosed through an osmotic fragility test.

**Note: some cases of IMHA especially those involving an immune response to erythrocyte precursors at the level of the bone marrow.**

**References:**

ACVIM 2009 proceedings.

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