

## Clinical pathology diagnostic challenge: case #5

**Signalment:** Giant poodle, male, 3 years old.

**History:** complete anorexia for the last 3 days, antibiotic-responsive hyperthermia a few weeks ago.

**Physical exam observations:** generalized weakness, pale mucous membranes.

CBC results		Clinical chemistry results	
Hematocrit (0.37-0.55 L/L)	0.08*	Glucose (3.38-6.88 mmol/L)	4.6
Hemoglobin (120-180 g/L)	53	BUN (2.09-7.91 mmol/L)	7.7
Erythrocytes ( $5.5-8.5 \times 10^{12}$ /L)	0.99	Creatinine (58-127 $\mu$ mol/L)	68
MCV (60-77 fL)	202	ALT (4-62 U/L)	33
MCHC (320-360 g/L)	663	Alkaline phosphatase (6-80 U/L)	421
Reticulocytes (<1 %)	8.2	Total protein (56.6-74.8 g/L)	58.6
Reticulocytes ( $<60\,000 \times 10^6$ /L)	81 334	Albumin (29.1-39.7 g/L)	29.7
Platelets ( $200-900 \times 10^9$ /L)	11	Globulins (23.5-39.1 g/L)	28.9
Plasma protein (60-80 g/L)	72	Calcium (2.38-3.00 mmol/L)	2.38
Leukocytes ( $6.0-17.0 \times 10^9$ /L)	33.5	Phosphorus (0.75-1.70 mmol/L)	1.37
Neutrophils (mature) ( $3.0-11.5 \times 10^9$ /L)	27.1	Potassium (3.82-5.34 mmol/L)	4.38
Neutrophils (band) ( $0-0.3 \times 10^9$ /L)	1.0	Sodium (143-154 mmol/L)	146
Lymphocytes ( $1.0-4.8 \times 10^9$ /L)	1.3	Chloride (108-117 mmol/L)	112
Monocytes ( $<1.4 \times 10^9$ /L)	4.0	Total CO <sub>2</sub> (17-25 mmol/L)	21
Eosinophils ( $0.1-1.3 \times 10^9$ /L)	0.1	Anion Gap (12-24 mmol/L)	17
Basophils (0 - rare $\times 10^9$ /L)	0		

\*Sample observations: hemolysis 2+ and mildly icteric. The hematocrit showed in the list was calculated by an automated hematology analyzer. Using the same sample, a microhematocrit was done and 0.20 L/L was the obtained packed cell volume.

Using the laboratory changes, submit a differential diagnosis and justify it (pathophysiology). If needed list other possible tests to confirm your diagnosis.