CASE 7

Odd cells in the blood of a dog

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Signalment and history: A 7-year-old female Leonberg Lion dog was referred to the National Veterinary School of Lyon because of a 2-days history of loss of appetite and bleeding with haemostasis screening tests highly suggestive of disseminated intravascular coagulation. A mastectomy had been performed 7 months before because of a mammary mass, but no histological analysis had been done.

Clinical examination: At the physical examination, the dog was depressed but responsive, had pale mucous membranes and tachycardia. Numerous petechias and several cutaneous masses highly suggestive of haematomas were present, associated with evidence of bleeding from the elbows. A small subcutaneous mass in the left inguinal mammary gland was noted.

First complementary tests: The complete blood cell count revealed moderate normocytic and normochromic regenerative anaemia, marked thrombopenia and slight leukocytosis with neutrophilia and monocytosis (Table 1). The blood smear revealed the presence of rare large atypical round cells (Figure 1), confirmed by the buffy coat smear (Figure 2).

Parameter	Value	Reference interval
Total RBC count (10^{12}/L)	**3.7**	5.5-8.5
Hb (g/L)	**92**	120-180
HCT (%)	**25**	37-54
MCV (fL)	77	60-77
MCHC (%)	36.7	31-36
Total WBC count (10^9/L)	**20.8**	6-17
Segmented neutrophils (10^9/L)	**16.8**	2.5-10.5
Lymphocytes (10^9/L)	1.2	1-6.5
Monocytes (10^9/L)	**2.8**	0-0.8
Eosinophils (10^9/L)	0	0-0.5
Basophils (10^9/L)	0	0-0.1
Platelet (10^9/L)	**72**	200-500

Table 1: Haematology

The haemostasis screening tests showed a marked increase in buccal mucosal bleeding time and prolonged blood coagulation test, a marked increase of fibrin/fibrinogen degradation products and marked hypofibrinogenaemia (Table 2). These results were highly suggestive of disseminated intravascular coagulation.

Parameter	Value	Control
PT(s)	**>70**	7.4
aPTT (s)	**>70**	14.2
TT (s)	**>60**	16.7
Fibrinogen (g/L)	**<0.9**	2.4
FDP (µg/mL)	**>40**	<20

Table 2 : Haemostasis screening tests

Serum biochemistry was unremarkable besides a moderate hyperglycaemia (Table 3). Urinalysis revealed a specific gravity of 1.024 with marked haematuria and moderate proteinuria (2 +).

Parameter	Value	Reference interval
Blood Urea (mmol/L)	5.9	2-7
Creatinine (µmol/L)	66	0-135
Total Protein (g/L)	61	60-80
ALT (IU/L)	8	0-60
Alkaline phosphatases (IU/L)	114	0-200
Glucose (mmol/L)	**8.25**	3.5-6.5
Sodium (mmol/L)	153	140-158
Potassium (mmol/L)	4.4	3.8-5.2
Chlorure (mmol/L)	116	105-122

Table 3 : Serum biochemistry

1. What are your differential morphologic diagnoses regarding the large round atypical cells in blood? (Figure 1 and 2)
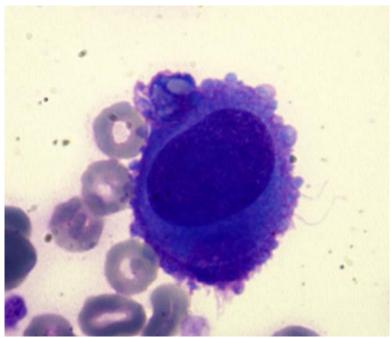*2. Which complementary tests would you perform?*
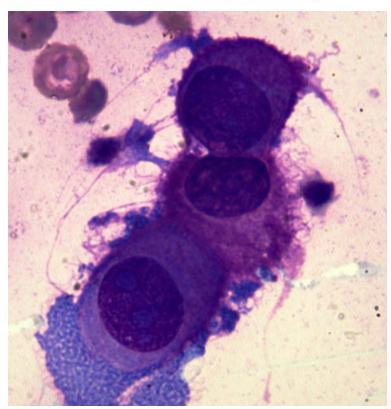
Fig.1: Peripheral blood smear. 100X. MGG

Fig.2: Buffy coat smear. 100X. MGG