

SPURIOUS WHITE BLOOD CELLS SCATTERGRAM AND DISCREPANCY IN WHITE BLOOD CELLS COUNTS IN ONE DOG

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Signalement

A 7-years old neutered male Labrador retriever dog.

Clinical History

The dog was referred to the internal medicine unit for evaluation of abdominal petechia, edemas and acute hematochezia.

Clinical findings

Physical examination revealed hyperthermia (39.6°C), tachypnea, tachycardia and congested mucous membranes. Caudal abdominal palpation was painful and an oblong mass was identified. Numerous edemas and abdominal and thoracic suffusions were also observed. The dog vomited twice during the consultation. Hematochezia was objectified by rectal palpation. Buccal examination revealed slight gingival bleeding.

Diagnostic procedures

A biochemistry, coagulation and hematology panel was performed. Results are displayed in tables 1, 2, 3, figures 1 and 2.

Table 1: Complete blood cell count results

Analyte	Results	Reference intervals (Sysmex)
WBC ($10^9/L$)	32.1	5.6-20.4
D-WBC ($10^9/L$)	66.5	ND*
NEUT ($10^9/L$)	/	2.9-13.6
LYMPH ($10^9/L$)	/	1.1-5.3
MONO ($10^9/L$)	/	0.4-1.6
EOS ($10^9/L$)	/	0.1-1.5
RBC ($10^{12}/L$)	5	5.2-7.9
HGB (g/dL)	12.1	12.4-19.2
HCT (L/L)	32.2	35-52
MCV (fL)	64.7	60-71
MCHC (g/dL)	37.6	34.4-38.1
PLT-I ($10^9/L$)	371	64-613
PLT-O ($10^9/L$)	352	108-562
RET ($10^9/L$)	28.9	19.4-150.1

* ND not determined, D-WBC is DIFF WBC count. WBC is the Baso WBC count.

Table 2: Plasma biochemistry results

Analyte	Results	Reference intervals (Vitros)
Creatinine ($\mu\text{mol/L}$)	116	44-133
Total proteins (g/L)	66	48-66
Albumin (g/L)	33.3	23-39
ALP (U/L)	43	20-155
ALT (U/L)	26	3-50
Sodium (mmol/L)	144	138-148
Potassium (mmol/L)	4.6	3.2-5.0
Chloride (mmol/L)	115	110-118
Bicarbonates (mmol/L)	18	16-25
Glucose (g/L)	1.42	0.7-1.8

Table 3: Coagulation profile results

Analyte	Results	Reference intervals (Stago)
Fibrinogen (g/L)	2.3	1.3-4.8
PT (s)	8.4	7.1-9
aPTT (s)	11.3	12.8-17.2

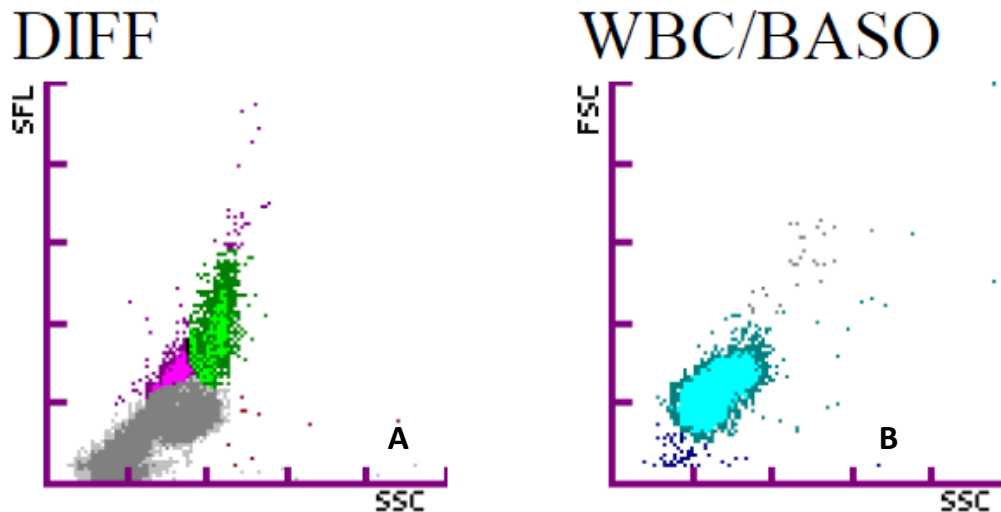


Figure 1: WBC scattergrams by the DIFF (A) and BASO (B) channels from the dog

Questions:

1. Give the differential diagnosis of the abnormal WBC scattergram and the discrepancy between WBC count given by the DIFF (D-WBC) and the BASO (default WBC count) channels (Figure 1)?
2. Among the previous differential diagnosis, give the most probable hypothesis according to the features observed in the blood smear picture (Figure 2)?

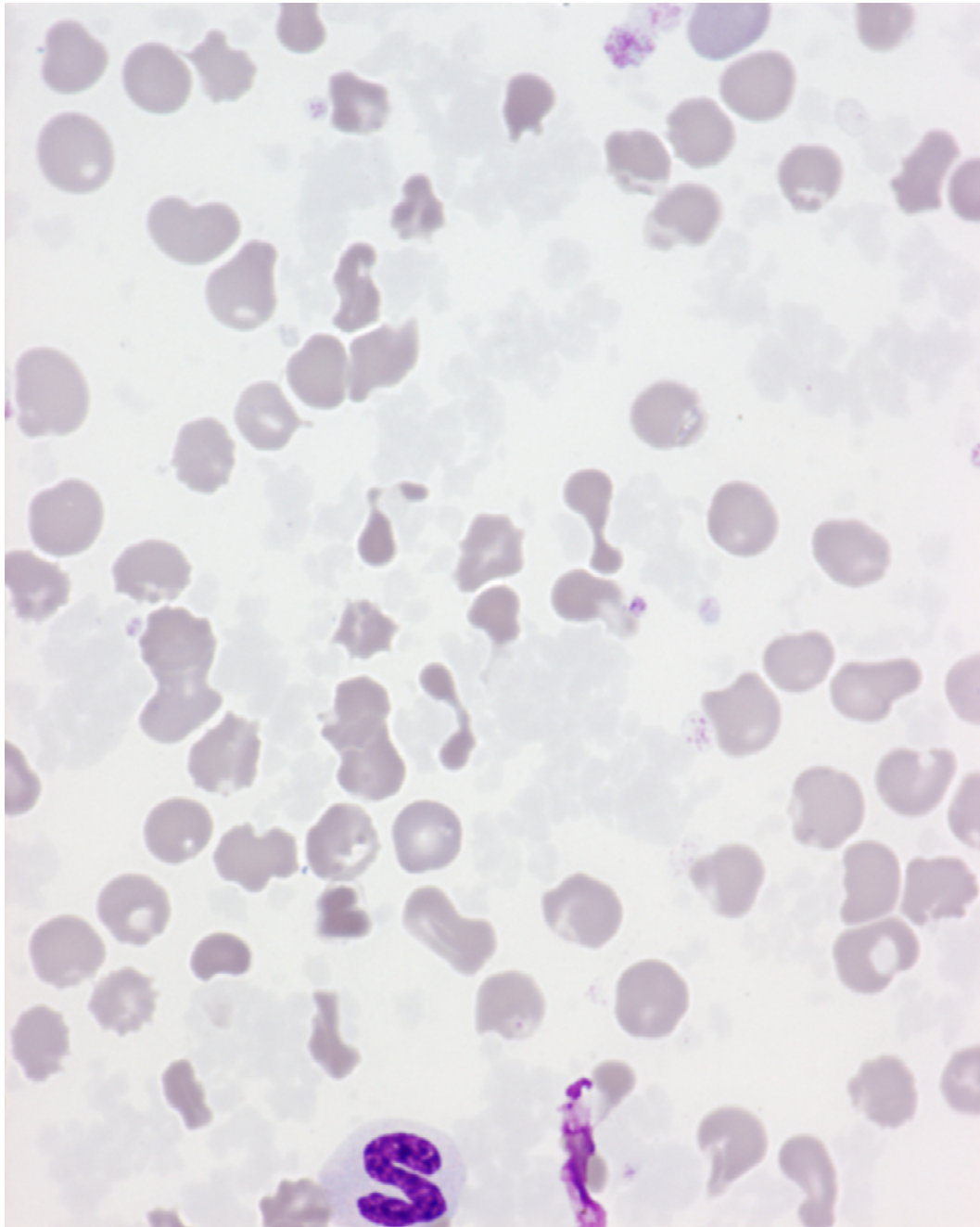


Figure 2: Blood smear from the dog. x40 Objective. May Grünwald Giemsa.