

MACROCYTOSIS AND HYPERNATRAEMIA IN A DOG

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Dick White Referrals, Station Farm, Six Mile Bottom, Newmarket, UK.

SIGNALMENT

6-month-old, female entire, Staffordshire Bull Terrier

HISTORY

The dog was initially presented to the referring veterinarian for a non-pruritic alopecia and pyoderma of the ventrum with mild lethargy. Demodex and bacterial pyoderma were diagnosed on skin scrape and pustule content cytology. The dermatological disease showed partial response to treatment with an ectoparasiticide effective against Demodex and antibiotics; however, the alopecia persisted. The lethargy did not improve with treatment and the dog became increasingly lethargic and appeared weak at times. The owners reported the dog was never seen to drink and occasionally had generalised tremors. The dog was referred to Dick White Diagnostics for further investigation.

CLINICAL FINDINGS

On presentation, the dog was very depressed. There was generalised bi-lateral, symmetrical alopecia affecting the entire body. The gait was stiff, especially on the back legs and a cerebellar ataxia was suspected. The remainder of the physical examination was unremarkable.

INITIAL DIAGNOSTIC INVESTIGATION

A complete blood count was performed using an ADVIA 120 (Siemens) automated haematology analyser and blood film examination (Table 1 and Figure 1). Biochemistry parameters were evaluated using a Beckman Coulter AU480 (Table 2)

Table 1: Haematology

PARAMETER	PATIENT			REFERENCE INTERVAL
RBC	3.62	10 ¹² /L	LOW	5.50-8.50
Haemoglobin	9.9	g/dL	LOW	12.0-18.0
HCT	0.38	L/L		0.37-0.55
MCV	104.0	fL	HIGH	60.0-77.0
MCHC	26.4	g/dL	LOW	30.0-38.0
MCH	27.5	pg	HIGH	19.5-25.5
Red cell distribution width	16.0	%	HIGH	12.0-13.2
WBC	10.41	x10 ⁹ /L		6.00 - 15.00
Neutrophils	6.94	x10 ⁹ /L		3.00 - 11.50
Lymphocytes	1.72	X10 ⁹ /L		1.00 - 4.80
Monocytes	1.37	x10 ⁹ /L		0.20 - 1.40
Eosinophils	0.35	X10 ⁹ /L		0.10 - 1.20
Basophils	0.02	x10 ⁹ /L		0.00 - 0.10
Platelets	103	x10 ⁹ /L	LOW	200-500
WBC morphology	Moderate number of neutrophils are mildly toxic with Dohle bodies and slight foamy cytoplasm			
RBC morphology	Marked anisocytosis, no polychromasia			
Platelet morphology	Platelets are consistent with analyser count. No clumping seen. Manual estimate approximately 100x10 ⁹ /L			

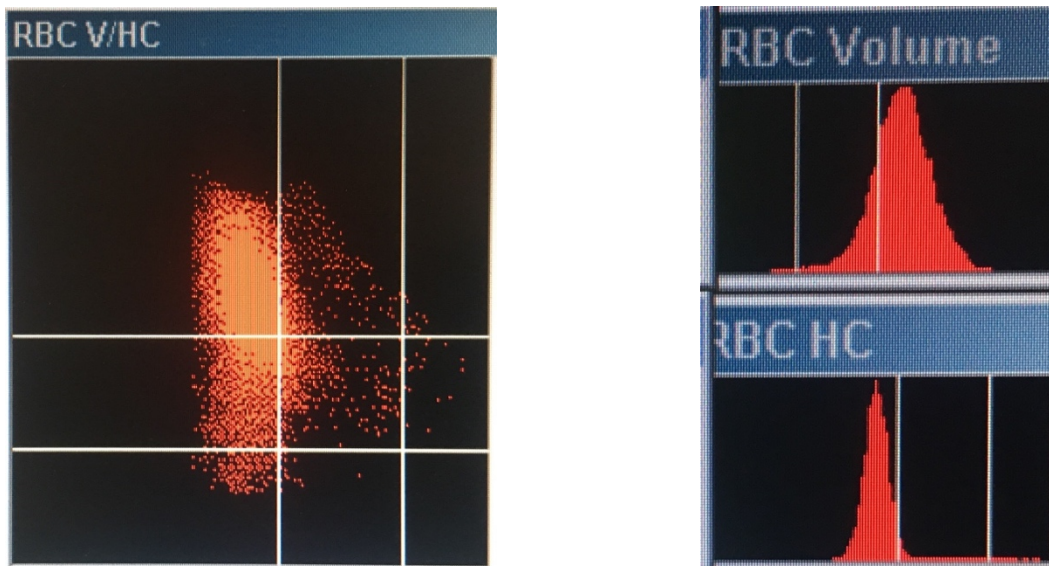


Figure 1. ADVIA cytograms

Table 2: Biochemistry

ANALYTE	PATIENT RESULT		REFERENCE INTERVAL
Total Protein	59	g/L	54 – 77
Albumin	29	g/L	25 – 40
Globulin	30	g/L	23 – 45
Urea	23.6	mmol/L	HIGH 2.5 – 7.4
Creatinine	169	umol/L	HIGH 40 – 145
Potassium	4.1	mmol/L	3.4 – 5.6
Sodium	195	mmol/L	HIGH 139 – 154
Sodium:Potassium Ratio	47.6	mmol/L	>27.0
Chloride	165	mmol/L	HIGH 105 – 122
Calcium	2.9	mmol/L	HIGH 0.6 – 1.4
Inorganic Phosphate	1.9	mmol/L	HIGH 0.6 – 1.4
Glucose	4.7	mmol/L	3.3 – 5.8
ALT	131	IU/L	HIGH 13 – 88
AST	291	IU/L	HIGH 13 – 60
ALP	594	IU/L	HIGH 14 – 105
GGT	11	IU/L	0 – 14
Bilirubin	5	umol/L	0 – 16
Cholesterol	17.2	mmol/L	HIGH 3.8 – 7.0
Triglyceride	5.1	mmol/L	HIGH 0.56 – 1.14
Lipase (DGGR)	21	IU/L	8 – 120
Creatine Kinase	7005	IU/L	HIGH 0 – 190

What is the likely cause of the clinical signs and what are the differential diagnoses?

What is the likely cause of the haematological alterations?