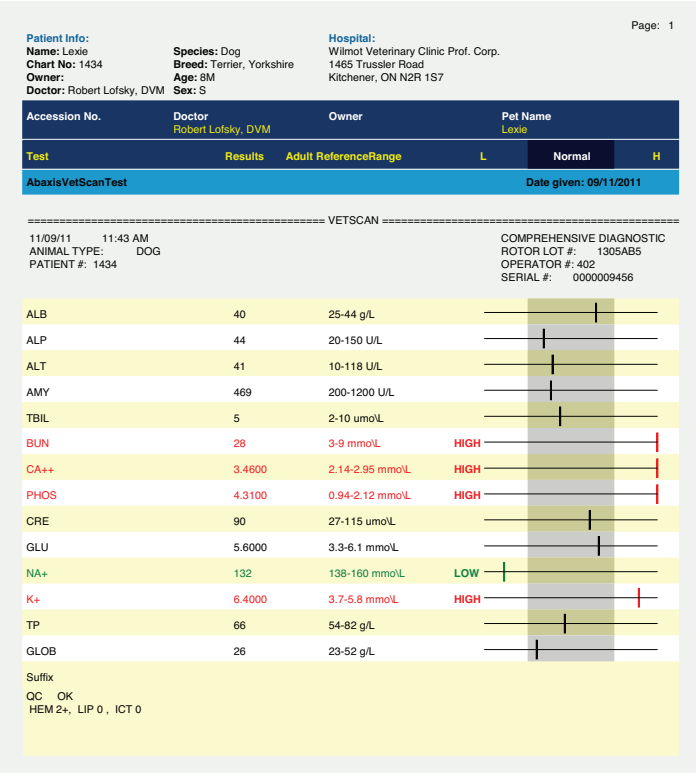
CASE STUDY WINNER

Dietary Indiscretion Becomes an Addisonian Case

Contributing Author *Robert Lofsky, DVM, Wilmot Veterinary Clinic, Kitchener, Ontario*

An eight month-old, spayed, 3 kg, Yorkshire Terrier, Lexie, presented to our clinic with a two day history of vomiting. On Sunday, Lexie got into various materials. The owner was in the process of moving and had boxes all over the house. Lexie vomited a clothing label tag on Monday and had been chewing on the baseboards and drywall. This was unusual, as Lexie had never chewed on the baseboards or drywall before. The owner had also changed Lexie's dog food one week ago. Lexie vomited several more times, mostly bile and foam, on Monday and Tuesday. When we saw Lexie on Wednesday, she had already vomited twice that morning. The owner told me that Lexie had not eaten since Monday and that she was drinking and keeping her water down.



Page: 1

Patient Info:
Name: Lexie
Chart No: 1434
Owner:
Doctor: Robert Lofsky, DVM
Species: Dog
Breed: Terrier, Yorkshire
Age: 8M
Sex: S

Hospital:
Wilmot Veterinary Clinic Prof. Corp.
1465 Trussler Road
Kitchener, ON N2R 1S7

Accession No.	Doctor	Owner	Pet Name
	Robert Lofsky, DVM		Lexie

AbaxisVetScanTest — Date given: 09/11/2011

VETSCAN

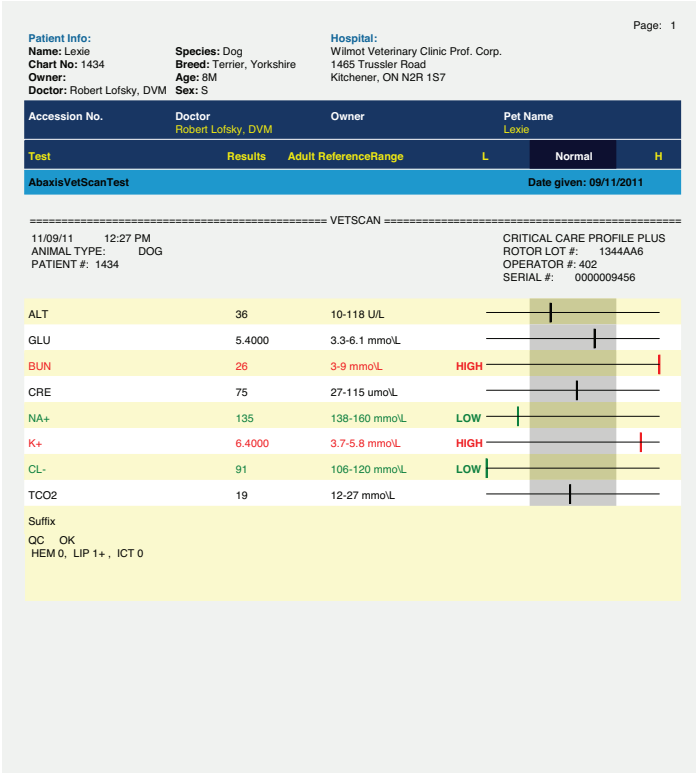
11/09/11 11:43 AM
ANIMAL TYPE: DOG
PATIENT #: 1434

COMPREHENSIVE DIAGNOSTIC
ROTOR LOT #: 1305AB5
OPERATOR #: 402
SERIAL #: 0000009456

Test	Results	Adult ReferenceRange	L / Normal / H
ALB	40	25-44 g/L	
ALP	44	20-150 U/L	
ALT	41	10-118 U/L	
AMY	469	200-1200 U/L	
TBIL	5	2-10 umo\L	
BUN	28	3-9 mmo\L	HIGH
CA++	3.4600	2.14-2.95 mmo\L	HIGH
PHOS	4.3100	0.94-2.12 mmo\L	HIGH
CRE	90	27-115 umo\L	
GLU	5.6000	3.3-6.1 mmo\L	
NA+	132	138-160 mmo\L	LOW
K+	6.4000	3.7-5.8 mmo\L	HIGH
TP	66	54-82 g/L	
GLOB	26	23-52 g/L	

Suffix
QC OK
HEM 2+, LIP 0 , ICT 0

Figure 1: Comprehensive Diagnostic Profile



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Breed: Terrier, Yorkshire
Age: 8M
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1465 Trussler Road
Kitchener, ON N2R 1S7

Accession No.	Doctor	Owner	Pet Name
	Robert Lofsky, DVM		Lexie

AbaxisVetScanTest — Date given: 09/11/2011

VETSCAN

11/09/11 12:27 PM
ANIMAL TYPE: DOG
PATIENT #: 1434

CRITICAL CARE PROFILE PLUS
ROTOR LOT #: 1344AA6
OPERATOR #: 402
SERIAL #: 0000009456

Test	Results	Adult ReferenceRange	L / Normal / H
ALT	36	10-118 U/L	
GLU	5.4000	3.3-6.1 mmo\L	
BUN	26	3-9 mmo\L	HIGH
CRE	75	27-115 umo\L	
NA+	135	138-160 mmo\L	LOW
K+	6.4000	3.7-5.8 mmo\L	HIGH
CL-	91	106-120 mmo\L	LOW
TCO2	19	12-27 mmo\L	

Suffix
QC OK
HEM 0, LIP 1+ , ICT 0

Figure 2: Critical Care Profile Plus Panel

On physical examination, Lexie had moist mucous membranes with a normal skin tent. Abdominal palpation was unremarkable. The initial temperature taken by our technician was 37.5 °C. I did not think that this temperature was abnormal because I thought that the thermometer was likely not fully inserted into the rectum. At this point I assumed that this was a case of dietary indiscretion, possibly related to the dietary change or to the stress of the move that caused Lexie to chew on things around the house. I almost sent Lexie home with antiemetics and a gastrointestinal diet when the owner asked me why Lexie was shaking. I repeated her temperature and was alarmed that it was only 36 °C. I told the owner that her temperature was very low and that we should hospitalize her and start her on IV fluids with active warming.

After we collected some blood, we started Lexie on IV fluids at 3 times her maintenance fluid rate and gave her a subcutaneous injection of Maropitant and Famotidine. To our surprise, Lexie's bloodwork was markedly abnormal. Her sodium and chloride were decreased and her potassium was increased. Her BUN, calcium and phosphorus were also elevated (Figure 1 and 2). The Na/K ratio was calculated to be 20.

Lexie's CBC was mostly unremarkable except for a slightly elevated red blood cell count and elevated hemaglobin concentration with a borderline high normal hematocrit. We compared these CBC values with her presurgical bloodwork from her spay two months ago and noticed a marked increase in her hematocrit (Figure 3 and 4 as seen on next page). Thankfully, with all this information from our Abaxis analyzers we were able to treat Lexie at the point of care for hypoadrenalcorticism. We increased her fluid rate to 60ml/hr/kg at 15-minute intervals. We gave her intravenous Dexamethasone and proceeded with an ACTH

Wilmot Veterinary Clinic Prof. Corp.
Enter VetScan Preanesthetic Profile with CBC Fields
Date: 08/09/2011

W. blood count	7.91 10^3/mm^3	.v..l.... (6-17)
R. blood count	5.9 10^6/mm^3	v...l.... (5.5-8.5)
Hemaglobin	13.3 g/dl	**<....l.... (13.5-20.5)**
Hemocrit	40.51 %	v...l.... (39-60)
M.C. Volume	69.0 fl	....v.... (62-77)
M.C.Hemoglobin	22.52 pg	..v.l.... (21-26)
MCHC	32.82 g/dl	..v.l.... (32-36)
RDW	14.28 %	....lv... (12-16)
Platelets	347.0 10^3/mm^3	....v.... (165-550)
MPV	6.97 fl	.v..l.... (6.1-10.1)
% Lymphocytes	20.1 %	.v..l.... (0-100)
% Monocytes	5.0 %	v....l.... (0-100)
% Granulocytes	74.9 %	....l.v.. (0-100)
# Lymphocytes	1.5 10^3/mm^3	v...l.... (1-4.8)
# Monocytes	0.3 10^3/mm^3	v...l.... (0.2-1.4)
# Granulocytes	6.1 10^3/mm^3	..v.l.... (3.5-12)
% Eosinophils	2.1 %	

Figure 3: Pre-anesthetic Profile Test

Wilmot Veterinary Clinic Prof. Corp.
Enter VetScan Diagnositic Profile + CBC Fields
Date: 09/11/2011

W. blood count	10.08 10^3/mm^3	...vl.... (6-17)
R. blood count	8.59 10^6/mm^3	**....l....> (5.5-8.5)**
Hemaglobin	21.04 g/dl	**....l....> (13.5-20.5)**
Hemocrit	59.49 %	....l....v (39-60)
M.C. Volume	69.0 fl	....v.... (62-77)
M.C.Hemoglobin	24.51 pg	....l.v.. (21-26)
MCHC	35.37 g/dl	....l..v. (32-36)
RDW	12.71 %	.v..l.... (12-16)
Platelets	450.0 10^3/mm^3	....l.v.. (165-550)
MPV	7.8 fl	...vl.... (6.1-10.1)
% Lymphocytes	22.6 %	.v..l.... (0-100)
% Monocytes	5.1 %	v....l.... (0-100)
% Granulocytes	72.3 %	....l.v.. (0-100)
# Lymphocytes	2.2 10^3/mm^3	..v.l.... (1-4.8)
# Monocytes	0.5 10^3/mm^3	.v..l.... (0.2-1.4)
# Granulocytes	7.4 10^3/mm^3	....v.... (3.5-12)
% Eosinophils	3.6 %	

Figure 4: Diagnostic Profile Test

stimulation test. We called our supplier and ordered some Fludrocortisone. After about 1 hour of warming and fluid therapy, Lexie's temperature was back to normal. We lowered her fluid rate to twice maintenance and gave her some oral Sucralfate and offered her some food. She ate a little food and by the end of the day we repeated her blood work and noticed her values returning back into the reference ranges (Figure 5)

The VetScan chemistry analyzer markedly improved the outcome of this case. Without the ability to obtain immediate results at the point of care and begin immediate treatment, we would have waited until the next day get her initial bloodwork, we would not have started treating her as an Addisonian dog for almost another full day! We would have wrongly treated her for gastroenteritis from dietary indiscretion. Instead we confirmed the diagnosis (Figure 6) by the next day and started Lexie on Fludrocortisone the next morning. By the end of the day she was eating and was more active and alert. Her blood values (Figure 7) were almost completely back to normal so we decided to discharge her after being in the hospital for only one day.

So far, Lexie is doing great and we have repeated her bloodwork two weeks after her initial episode. **With the VetScan on-site, the owner had the added benefit of knowing her dog's blood results by the time the appointment ended. All of her electrolytes were back to normal and the owner reported that Lexie was back to her normal, playful self.**

Page: 1

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Chart No: 1434
Owner:
Doctor: Robert Lofsky, DVM
Species: Dog
Breed: Terrier, Yorkshire
Age: 8M
Sex: S

Hospital:
Wilmot Veterinary Clinic Prof. Corp.
1465 Trussler Road
Kitchener, ON N2R 1S7

Accession No.	Doctor	Owner	Pet Name
	Robert Lofsky, DVM		Lexie

Test	Results	Adult ReferenceRange	L	Normal	H
AbaxisVetScanTest				**Date given: 10/11/2011**	

========== VETSCAN ==========

11/09/11 06:48 PM
ANIMAL TYPE: DOG
PATIENT #: 1434

CRITICAL CARE PROFILE PLUS
ROTOR LOT #: 1344AA6
OPERATOR #: 402
SERIAL #: 0000009456

ALT	29	10-118 U/L	
GLU	9.4000	3.3-6.1 mmo\L	HIGH
BUN	12	3-9 mmo\L	HIGH
CRE	50	27-115 umo\L	
NA+	134	138-160 mmo\L	LOW
K+	4.9000	3.7-5.8 mmo\L	
CL-	97	106-120 mmo\L	LOW
TCO2	23	12-27 mmo\L	

Suffix
QC OK
HEM 1+, LIP 1+ , ICT 0

Figure 5

Page: 1

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Chart No: 1434
Owner:
Doctor: Robert Lofsky, DVM
Species: Dog
Breed: Terrier, Yorkshire
Age: 8M
Sex: S

Hospital:
Wilmot Veterinary Clinic Prof. Corp.
1465 Trussler Road
Kitchener, ON N2R 1S7

Accession No.	Doctor	Owner	Pet Name
	Robert Lofsky, DVM		Lexie

Test	Results	Adult ReferenceRange	L	Normal	H
Acth Stimulation (2 Samples)				**Date given: 09/11/2011**	
Cortisol (pre)	<10	15-120 nmol/L			
Cortisol (post)	<10	220-550 nmol/L			
Cortisol Comment	***	-			

Please Note That These Reference Ranges Are For Normal Animals That Are Not Receiving Any Type Of Medication. Interpretation Will Vary For Pets Receiving Therapy For Hyperadrenocorticism. For Assistance, Please Contact Customer Service To Speak To A Clinical Pathologist.

Figure 6

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Accession No.	Doctor	Owner	Pet Name
	Robert Lofsky, DVM		Lexie

Test	Results	Adult ReferenceRange	L	Normal	H
AbaxisVetScanTest				**Date given: 10/11/2011**	

========== VETSCAN ==========

11/10/11 02:58 PM
ANIMAL TYPE: DOG
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COMPREHENSIVE DIAGNOSTIC
ROTOR LOT #: 1305AB5
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PHOS	1.5600	0.94-2.12 mmo\L	
CRE	30	27-115 umo\L	
GLU	5.8000	3.3-6.1 mmo\L	
NA+	143	138-160 mmo\L	
K+	3.7000	3.7-5.8 mmo\L	
TP	49	54-82 g/L	LOW
GLOB	20	23-52 g/L	LOW

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QC OK
HEM 0, LIP 0 , ICT 0

Figure 7