Vetpath is a specialist veterinary laboratory dedicated to providing our clients with the finest laboratory diagnostic service. A team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology forms the core of the Vetpath team.

VNews

VETPATH LABORATORY SERVICES

JUNE 2014

Diagnosis of canine Cushing's disease

Diagnostic testing for endocrine disease can be challenging. A number of tests are often required before a final diagnosis can be made.

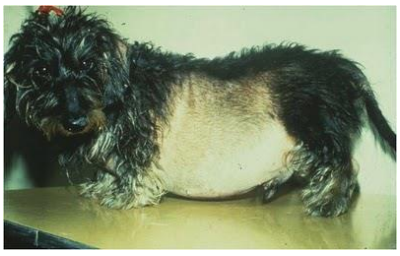
The ACVIM recently published a Consensus Statement on the diagnosis of hyperadreno-corticism (HA). The paper provides some useful and concise information about diagnosis of this condition that is summarized below.

Clinical presentation
The presenting clinical signs of a patient suspected of having HA should always be considered during work up. Endocrine tests should only be performed when the appropriate clinical signs are present. Without the appropriate clinical presentation, interpretation of adrenal function testing is difficult. Further support for HA is obtained with CBC and biochemistry data; however the absence of the common abnormalities (such as increased ALP activity) does not rule out HA.

Screening tests
The low dose dexamethasone suppression test (LDDST) is considered the screening test of choice (unless iatrogenic HA is suspected) due to its higher sensitivity compared to the ACTH stimulation test. If the LDDST is negative, another test should be performed or the LDDST should be repeated in 3 – 6 months. An alternative screening test is the urine cortisol:creatinine ratio. This is a sensitive test to detect increased cortisol secretion, however the specificity is low and adrenal hormone testing will be required to confirm the diagnosis.

Differentiating tests
The LDDST can indicate that HA is pituitary dependent (PDH) in some cases. If differentiation between PDH and an adrenal tumour (AT) is not possible using the LDDST, measurement of endogenous ACTH concentration (eACTH) is the best choice. A high dose dexmethasone suppression test is recommended only if eACTH measurement is not available.

Diagnostic imaging
A diagnosis of HA cannot be made solely with imaging; however ultrasound assessment can help to differentiate between PDH and an AT. Note that normal findings on imaging studies do not rule out HA.



Reference: Behrend EN et.al., Diagnosis of Spontaneous Canine Hyperadrenocorticism: 2012 ACVIM Consensus Statement (Small Animal). JVIM 2013; 27: 1292-1304.

What is a titre?

One of the most common questions we receive at Vetpath is whether a titre is positive or negative.

Antibody titres are confusing not only because they are expressed as a dilution, but because the concept of a more diluted sample corresponding to a higher titre seems counter intuitive. But the key to interpreting a titre is to understand how the test is performed.

An antibody titre is determined using serial dilutions. For some tests the dilution begins at 1:2, but for other tests the first dilution is higher (eg 1:16). The diluted samples are tested for the presence of detectable antibody. The assigned titre is indicative of the **last dilution in which antibody is detected**. Therefore, the higher the titre (and therefore the dilution), the greater the amount of antibody in the original blood sample.

If you have any questions regarding titres and how they are determined, please contact the laboratory on (08)9259 3600.

Blood contamination and cytology

Blood contamination of fine needle aspirate samples is often unavoidable. While a large amount of blood can interfere with interpretation, some blood in the background is not always a bad thing.

The main disadvantage of blood contamination in cytological preparations is dilution of cells. This can often occur in vascular mesenchymal lesions such as a haemangiosarcoma. These tumours are often poorly exfoliative, and hemodilution can further reduce cellularity.

Having a small amount of peripheral blood mixed with aspirated cells is advantageous if the cells are very fragile. The plasma in the blood provides protection for the cells from the shearing forces they encounter during smearing. Some blood contamination is particularly useful in lymph node aspirates. Neoplastic lymphocytes are known to be particularly fragile and prone to lysis during smearing (Figure 1). Smears that contain blood almost always contain a better preserved lymphoblast population compared to those with minimal blood (Figure 2).

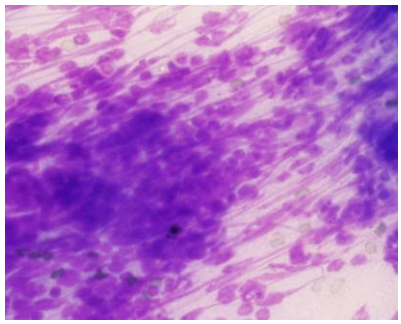


Figure 1: Lysed cells in a lymph node aspirate with very little blood.

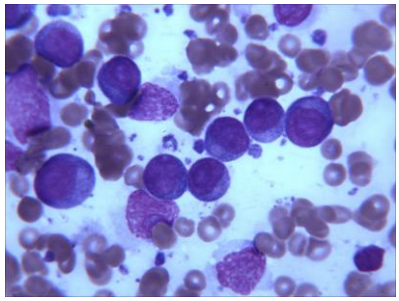


Figure 2: Well preserved lymphoblasts in a bloody smear.

A good rule is to stop applying negative pressure on the syringe once blood is present in the hub of the needle. If you feel that too much blood is being aspirated, try using a smaller gauge needle or collect cells using just the needle without suction on the syringe.

NATA

NATA Accredited
Laboratory Number 14776

Vetpath Laboratory Services
RECEPTION DIRECT +61 8 9259 3600
LOCAL COURIER PICK-UPS +61 8 9259 3666
AFTER HOURS MOBILE 0418 916 436
FACSIMILE +61 8 9259 3627
EMAIL enquiries@vetpath.com.au
WEBSITE www.vetpath.com.au

VETERINARY PATHOLOGISTS
Jenny Hill BVSc (Hons) Dip ACVP
John Jardine BVSc MMedVet (Path) Dip ACVP MRCVS
Mary McConnell BVSc Grad.Dip.Clin.Path PhD
Jon Meyer BVSc DvSc Dip ACVP
Leanne Twomey BSc BVMS (Hons) PhD Dip ACVP