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

NOVEMBER 2018

What the numbers don't tell you!

Automated haematology analyzer technology has made significant advances in the last 20 years. However, no matter how great the technology, the information provided in the CBC must be critically evaluated.

A vital component of the CBC is a smear evaluation. Preparation of a well-made, properly stained smear provides invaluable information. A well-made smear will have a monolayer adjacent to the feathered edge where cell morphology is best (Figure 1).

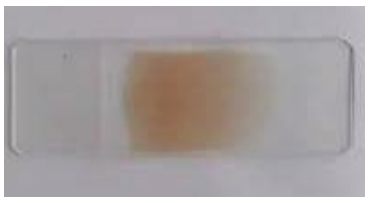

Figure 1: A well-made, unstained blood smear.

Questions to ask yourself when evaluating the smear at low power include does the PCV/HCT look accurate? Are platelets clumps present? Are any large cells or infectious agents present?

Evaluation of cell morphology is performed at a relatively high power. In anaemic patients, erythrocyte morphology can provide valuable information on the cause of the anaemia. Spherocytes (figure 2), acanthocytes, schistocytes, hypochromasia, microcytosis, Heinz bodies, eccentrocytes and ghost cells are just some of the cell types to look for.

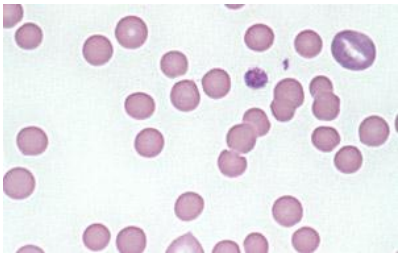

Figure 2: Spherocytes in a dog with IMHA.

Inflammatory disease and haematopoietic neoplasia may be evident from leukocyte morphology. Toxic changes (figure 3) and left shifting in the neutrophils helps to differentiate between inflammation and a stress response. The presence of neoplastic leukocytes (lymphoid or myeloid) can only be determined by smear evaluation.

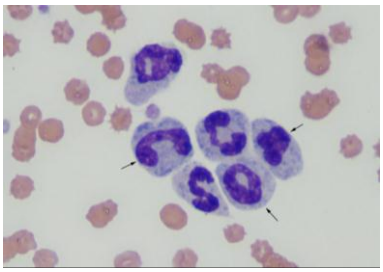

Figure 3: Toxic neutrophils in canine blood.

Automated platelet counts are notoriously inaccurate and must be checked with a blood smear.

Evaluation of a blood smear should be a routine part of every CBC, including those of clinically normal patients. All haematology samples submitted to Vetpath have a smear evaluation performed by a trained scientist and a board certified pathologist.

Vetpath Laboratory Services welcomes feedback on all aspects of our service from couriers to lab results. Please feel free to contact us at 9259 3666 or email enquiries@vetpath.com.au

AMH – An Overview

AMH is a hormone that plays a major role in sexual differentiation, Leydig cell differentiation and folliculogenesis. It is produced by Sertoli cells in male animals and by follicular granulosa cells in females.

AMH can be used in small animals to differentiate between entire and neutered males and females, and is useful in dogs and cats to evaluate for ovarian remnants as well as retained testicles in dogs. In dogs with suspected ovarian remnant syndrome, AMH concentration may vary depending on the amount of ovarian tissue remaining, and the sensitivity of testing may be increased by concurrent measurement of AMH and progesterone, particularly in patients less than 1 year of age. Very high concentrations in dogs may suggest the presence of a Sertoli cell tumour.

In horses, AMH is used to differentiate between geldings and stallions. AMH levels have also been found to be increased in cryptorchid horses compared to intact stallions. This is an advantage over testosterone and oestrone sulphate testing, as the concentrations of these parameters are similar between cryptorchid and entire stallions. In addition, AMH is only produced by the testis, whereas testosterone can also be produced by the adrenal gland, making AMH potentially more specific for testicular tissue.

AMH is also useful for screening mares for a granulosa cell tumour (GCT). Mares with GCT usually have significant higher AMH concentrations than normal mares and mares with other ovarian abnormalities.

Measurement of AMH has not been validated in other species such as pocket pets. However, given the clear distinction between entire and de-sexed cats, dog and horses, we suspect AMH can be used to confidently screen other species for the presence of ovarian and testicular tissue.

AMH measurement is performed on a serum (red top) sample. Approximately 1ml of whole blood is required. AMH concentration will gradually increase over time, and analysis within 48 hours of collection is recommended.

References:

1. Theriogenology 2015. 83: 817–821 and 2016; 86 (6):1467-1474.
2. J Clin Endo Met. 2012; 97 (6):2160-3.
3. BMC Vet Res. 2015; 11: 166.
4. JVDI 23(3) 524–527.
5. Vet Clinics of Nth America: Equine Practice: Nov 2006.
6. J Equ Vet Science. 2018; 60: 6-10.

Sample labelling

Vetpath is a NATA accredited laboratory. This requires time and dedication by all staff members to uphold the highest quality and standards.

As part of NATA accreditation, Vetpath is only permitted to process unlabelled samples once the identity of the specimen has been confirmed with the submitting clinic. To avoid interruption to your day and a delay in sample processing, please ensure all samples and paperwork are clearly labelled with patient identification.

NATA

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