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

MARCH 2011

ERYTHROCYTE MORPHOLOGY

Blood smear evaluation is an essential component of a complete blood count. Erythrocytes, leukocytes and platelets are assessed for both numbers and morphology. In this month's VNews, the normal morphology of canine, feline and equine erythrocytes will be discussed. Some of the more common abnormalities of red cell morphology will be featured in future editions of VNews.

Canine erythrocytes

The canine erythrocyte in health is a relatively large, uniform, biconcave disc. On a blood film the cells appear to have an area of central pallor that usually spans appropriately one third of the cell. Small numbers of polychromatophilic erythrocytes and occasional nucleated red blood cells and Howell-jolly bodies may also be seen.

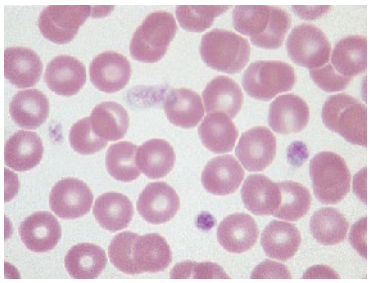

Figure: Canine erythrocytes

Feline erythrocytes

Feline erythrocytes are small and more variable than canine erythrocytes. They have no central pallor and polychromatic cells are present in very small numbers. Heinz bodies are more common in cats because feline haemoglobin is more susceptible to oxidation. Normal cats can have up to 10% of cells containing single, small Heinz bodies. Occasional Howell Jolly bodies can be seen and cats normally have a greater degree of rouleaux compared to dogs. The life span of feline erythrocytes is 65 – 75 days.

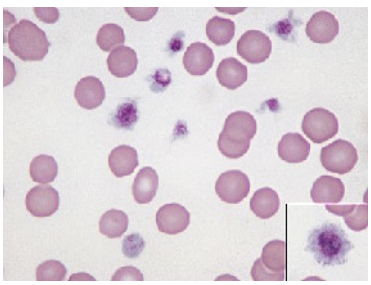

Figure: Feline erythrocytes

Continued over the page…

What crystal is this?

Source:
http://diaglab.vet.cornell.edu/clinpath/modules/UA-SED/crystal1.htm

The answer is over the page……

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

Equine erythrocytes

Equine erythrocytes lack central pallor and often display prominent rouleaux formation. Polychromatophils are not observed in blood from healthy horses and are rarely observed during anaemia. Microcytosis is a normal finding in foals up to 1 year of age, and is attributable to a physiologic iron deficiency.

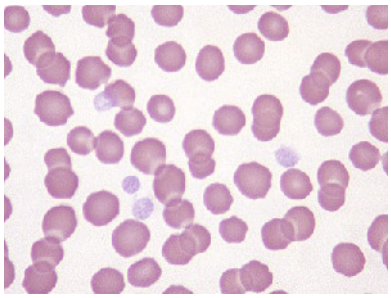

Figure: Equine erythrocytes

Knowledge of the normal appearance of erythrocytes helps us identify abnormal morphology during disease. Future editions of VNews will discuss specific pathological and in vitro alterations in erythrocyte morphology.

TOXIN AND DRUG TESTING

Domestic animals can become exposed to a number of toxins and drugs; both accidentally and maliciously.

Although testing for any and all chemicals would be advantageous, there are a limited number of toxins and drugs that can actually be tested for in animals. When submitting samples for analysis, the toxins that need to be tested must be stated on the submission form.

There are several combinations of toxin and drug testing available. These are summarized below:

1. Organophosphates (OP) and organochlorines (OC) screen.
   - OP: Stomach contents /vomitus (frozen) or tissue. Not blood.
   - OC: 10ml lithium heparin blood or stomach contents/vomitus (frozen).
   - Allow at least 10 working days.

2. Strychnine and fluoroacetate (1080) screen.
   - Strychnine: Stomach contents/vomitus (frozen), bait or urine. Not blood.
   - 1080: Stomach contents/vomitus (frozen). Not blood or urine.
   - Allow at least 6 weeks.

3. Recreational drug screen.
   - Detects alcohol, benzodiazepam (valium), cannabis/THC/marijuana, cocaine metabolites, amphetamines, opiates, methadone.
   - Can add on barbiturate screening.
   - Requires minimum 5ml urine. Not blood.
   - Allow 2 working days.

Please contact the laboratory for current pricing and availability of tests as the above details may change (these tests are completed by referral laboratories).

The crystals are ….

Drug crystals.

Many drugs that are excreted in urine have the potential to form crystals. The most common drugs that form crystals are the sulpha drugs (both panels of the picture are from patients receiving trimethoprim-sulfadiazine. The differing appearance of the crystals may relate to varying drug concentration and urine pH. Other examples of substances that can precipitate out in urine include radiopaque contrast agents and ampicillin.

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