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

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Portosystemic shunts and serum bile acids in Maltese dogs

Portosystemic shunts (PSS) are abnormal, macroscopic vascular connections between the portal vasculature and systemic venous circulation.

Congenital PSS can be intra-hepatic or extra-hepatic and cause a variety of clinical and biochemical abnormalities depending on the degree to which portal blood is allowed to bypass the liver. Biochemical abnormalities are associated with reduced hepatic function and may include elevated serum bile acids (SBA). Clinically, these patients may exhibit poor growth and neurological abnormalities.

Extra-hepatic PSS are known to be inherited in a number of breeds including Cairn Terriers and Yorkshire Terriers. A recent study published in JSAP reported that there is strong evidence that PSS in Australian Maltese Terriers are also inherited.

Portal vein hypoplasia (PVH) is another disorder affecting small breed dogs. This condition does not have a macroscopic shunt, but is microscopically identical to PSS with the lesions often being described histologically as micro-vascular anomalies (MVA). Dogs with PVH are often clinically normal, but have biochemical features consistent with a PSS.

In the mid-1990's, published data indicated that normal Maltese Terrier dogs in Australia had increased post-prandial SBA concentrations due to a potential interfering substance. Subsequent investigations suggested that such interference is unlikely, and that these clinically normal dogs probably had microscopic PVH in focal areas of the liver that were not biopsied.

It has since been hypothesized that congenital PSS and PVH may comprise a "spectrum" of portal shunting disease where patients can have a PSS or PVH or both conditions. This spectrum of portal vascular abnormalities may account for the elevated SBA concentrations in Australian Maltese Terriers as well as persistently elevated SBA concentrations after surgical treatment of macroscopic PSS.

If you have any questions about SBA concentrations in Maltese Terriers, please contact the laboratory to speak to a pathologist.

Reference: O'Leary CA et al. The inheritance of extra-hepatic portosystemic shunts and elevated serum bile acid concentrations in Maltese dogs. JSAP (2014) 55: 14-21.

Cytological evaluation of neoplasia

One of the most common reasons for aspirating a lump is to determine whether the lesion is inflammatory or neoplastic.

This is relatively straightforward in aspirates that contain either a purely inflammatory or neoplastic cell population. Some of the nuclear criteria in malignant cells we describe in cytology reports include:

- Anisokaryosis -variation in nuclear size.
- Increased nuclear to cytoplasmic ratio - larger nucleus with small amount of cytoplasm.
- Prominent and variably shaped nucleoli.
- Macronuclei – large nuclei.
- Coarse chromatin pattern.
- Nuclear molding – nuclei deformed about other nuclei.
- Abnormal mitotic figures.

Cytological evaluation becomes more problematic when both inflammatory cells and atypical tissue cells are present. Inflammation often incites dysplastic changes in tissue cells, which can appear very similar to the criteria of malignancy described above. Two tissues that are notorious for becoming markedly dysplastic in the presence of inflammation are squamous epithelium and bladder transitional cells.

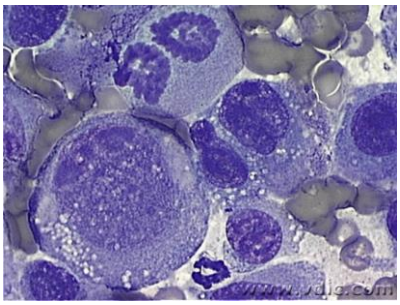

Figure: Cells with criteria of malignancy from histiocytic sarcoma.

When inflammation and abnormal tissue cells are identified on cytological preparations, histological assessment of tissue architecture is often required for definitive diagnosis. While cytology is a useful screening test, its limitations should be remembered when determining the best diagnostic plan for your patients.

Assessment of haemostasis – which tests should I choose?

Haemostatic tests are available individually and as a comprehensive screen. Which tests you choose depends on the history and clinical examination findings of the patient.

The full coagulation screen tests both primary and secondary haemostasis. The screen includes a full CBC including a fibrinogen concentration and platelet count, as well as PT and PTT. A coagulation screen is particularly useful if you have no indication of the possible cause of the haemorrhage from the history or clinical examination.

However, you may not need a full coagulation screen in some situations. For example, a CBC is all that is required for monitoring of immune-mediated thrombocytopenia (note that a full CBC provides much more information than a platelet count for minimal extra cost). Another common situation is testing for potential access to a rodenticide. In this case, PT testing 48 hours after the potential exposure (or cessation of treatment) is the only test required. This is because prolongation of PT occurs before PTT due to the short half life of Factor VII.

Remember to always submit an EDTA sample as well as a citrate sample for the CBC portion of

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

Welcome to our new-look newsletter

brought to you by the team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology.

the coagulation screen.

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VETPATH LABORATORY SERVICES

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