Newsletter December 2014

QML Pathology. | Vetnostics

Turnaround Times

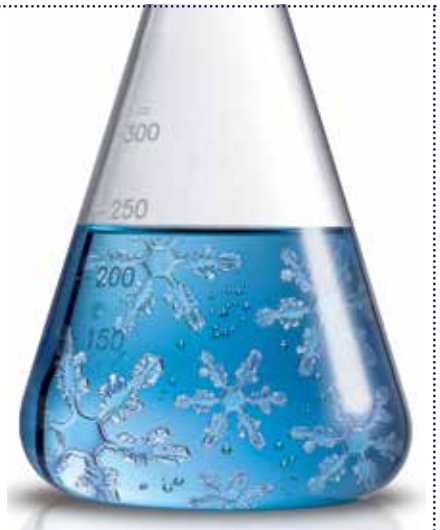
At QML Vetnostics, we aim to provide rapid results. Expected turnaround times (TAT) for the most frequently requested tests are:

Histopathology: 24-48hrs (Mon – Fri)

Cytology: Same day (Brisbane metro*) or next day (regional areas*) (Mon – Fri)

Haematology & Biochemistry:
Same day (Metro and many regional areas*) (Mon – Sat)

*Listed TAT are for morning Brisbane metro collections and regional collections received prior to daily regional laboratory sample referral to Brisbane. After these times, results would be expected the following morning (Mon-Sat).



Season's Greetings

The staff at QML Vetnostics would like to wish you all a Merry Christmas and a safe and prosperous New Year.

YOUR QML VETNOSTICS TEAM: WELCOME BACK DR BRETT STONE

We are very happy to announce that Dr Brett Stone has returned to QML Vetnostics on a full time basis in the role of supervising pathologist. Brett is based in our Brisbane laboratory and joins Dr Susan Boyd and Dr Jeanine Sandy, ensuring that QML Vetnostics continues to have a team of dedicated and experienced veterinary pathologists. With this high pathologist to case ratio, it translates into even faster turnaround times, personalised service and extra pathologist time dedicated to helping you with your difficult cases. As other articles in this and previous newsletters illustrate, we believe that QML Vetnostics is the premium external veterinary pathology provider throughout QLD and northern NSW with a tradition of aiming to provide an ever improving service. QML Vetnostics offers a comprehensive range of companion animal laboratory analyses at competitive prices. For these reasons, rapid turnaround of results and our team of committed pathologists and medical consultants, we hope to remain your veterinary pathology provider.

WELCOME SUHAIL HASSAN QML PATHOLOGY COMMERCIAL ACCOUNTS MANAGER

Suhail Hassan was recently appointed as the QML Pathology Commercial Accounts Manager and Suhail is therefore responsible for managing the QML Vetnostics department. Prior to QML Pathology, Suhail was employed with Dorevitch Pathology in Victoria as an Area Manager. He has worked in the pathology industry and in business development for over a decade. Suhail is based at QML Pathology's Central Laboratory in Murarrie and is happy to discuss any account or managerial veterinary pathology enquiries. Suhail can be contacted on (07) 3121 4013 or via email: QML_Vetnostics@qml.com.au.

FLOW CYTOMETRY IS NOW PERFORMED AT VETNOSTICS!

We are very pleased to announce that flow cytometry is now performed at Vetnostics and available for investigation and further work-up of leukaemias.

For those of you that are unfamiliar with flow cytometry, this technology simultaneously measures and then analyses multiple physical characteristics of single particles (cells) as they flow in a fluid stream through a beam of light. The properties measured include a particle's relative size, relative granularity or internal complexity and relative fluorescence intensity. A major medical application of flow cytometry is immunophenotyping leukaemias with a panel of fluorescently labelled antibodies to assess expression of cell markers, specifically to assist with definitive identification of neoplastic WBC populations as well as differentiating between reactive and neoplastic WBC populations.

Current charge is $115 (excl GST), with flow cytometry performed after a FBC. Our turnaround time is about 2-3 working days and we prefer a fresh EDTA blood sample submitted on Monday to Wednesday for processing.

Newsletter December 2014

QML Pathology | Vetnostics

Opening times over the festive period

Please be advised that Vetnostics will be open for processing and reporting of samples over the festive period.

Our Brisbane Metropolitan Courier department will be open for courier requests from 7am to 10pm on Christmas Day, Boxing Day and New Years Day. Service will otherwise be as normal.

For regional collections and laboratory operating hours over this period, please contact your local laboratory.

Equine inhibin testing amended charge

Please note that due to increased costs associated with the equine inhibin assay, the new charge for this test with immediate effect is $200 excl. GST.

Turnaround time for results and sample requirements are otherwise unchanged.

NEW: MULTIPLEX PCR FAECAL PANEL

Diarrhoea in the dog and cat is a frequently encountered clinical presentation in small animal practice and this can involve the small intestine, large intestine, or both. Various disorders can lead to diarrhoea therefore a broad based diagnostic approach is useful in some cases to identify a potential cause or causes. Performing tests that allow for the identification of infectious causes of diarrhoea have traditionally involved faecal ova and parasite screens, faecal microscopy, and culture. These tests have been shown to lack sensitivity and, in some cases, specificity. The advent of molecular methods such as real time PCR (RTPCR) has provided an efficient and sensitive tool for the identification of potential enteropathogens.

The Vetnostics Faecal Multiplex PCR uses multiplex tandem RTPCR methods to allow the screening of a panel of multiple infectious agents in a single faecal sample. One or more pathogens can be associated with clinical disease in both dogs and cats.

For dogs, this panel includes: Campylobacter spp., Clostridium perfringens alphatoxin gene, Salmonella spp., canine parvovirus, Giardia lamblia, Cryptosporidium (parvum and hominis), canine coronavirus and canine distemper virus.

For cats, this panel includes: Campylobacter spp., Clostridium perfringens alphatoxin gene, Salmonella spp., feline panleukopenia virus, Toxoplasma gondii, Tritrichomonas foetus, Giardia lamblia, Cryptosporidium (parvum and hominis), and feline coronavirus.

As with any diagnostic test, results must be interpreted in light of clinical history, clinical signs/findings, signalment, vaccination history, and other clinical data. This is particularly important for the interpretation of PCR positive results, as some enteropathogens, including many strains of non-jejuni Campylobacter spp. and C. perfringens can be excreted in healthy animals in the absence of diarrhoea. The diagnostic utility of the Vetnostics Multiplex PCR Faecal Panel may therefore be optimised by other laboratory methods such as culture, microscopy, and ELISA-based assays.

The test requires 5g of fresh faeces (minimum 1g) submitted in a sterile container. Faecal samples should be kept refrigerated until submission to the laboratory. The cost of this test is $75.00 excl. GST. Please request Faecal Multiplex PCR Panel on the current submission form under 'Other Tests'.

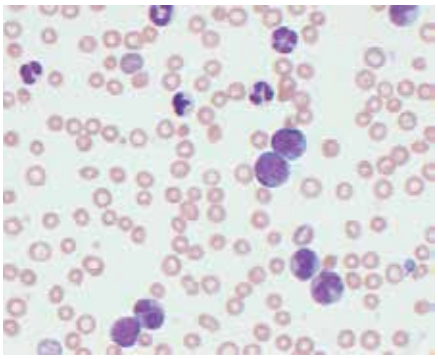


Figure 1. Canine blood film (x50 oil).

Can you identify the prominent abnormalities evident within this image?

WHAT IS YOUR DIAGNOSIS?

The image is from a canine blood film with some of the automated haematology data also provided (Reference intervals in brackets). The dog had been previously treated for suspected IMHA and IMTP, however the anaemia was refractory to treatment with the dog then developing splenomegaly and severe peripheral blood leukocytosis.

	Result	Ref. Int.	Result
Hb	63 g/L	(115-180)	Platelets: Clumped
RCC	2.5 x10 ^12 /L	(5.0-8.0)	
Hct	0.20	(0.37-0.55)	Retic 3.6% (< 2.1)
MCV	79 fL	(63-74)	Abs. 90 x10 ^9 /L
MCH	25 pg	(20-25)	
MCHC	316 g/L	(310-360)	NRBC 7 /100 WBCs
WBC	76.5 x10 ^9 /L	(6.0-14.0)	

Newsletter December 2014

QML Pathology | Vetnostics

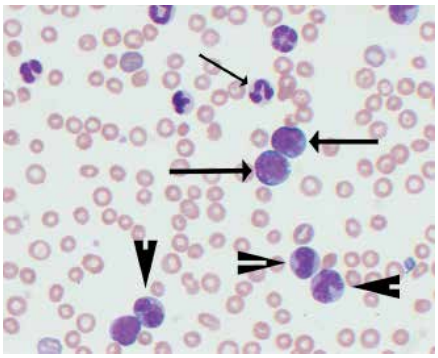


Figure 2

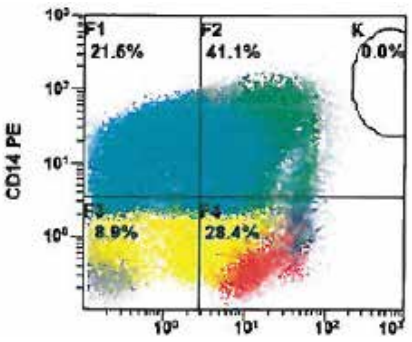


Figure 3: Flow Cytometry CD14 Cytogram

WHAT IS YOUR DIAGNOSIS? ANSWER

The most significant features of this image as illustrated in Fig 2 are the presence of circulating immature cells and blasts (thicker arrows) and profound monocytosis (arrow heads). There was a concurrent mild neutrophilia (thinner arrow) with a left shift and mild neutrophil dysplasia also noted (not shown). On blood smear exam the blasts comprised 28% of leukocytes and had irregular and lobulated nuclei with prominent nucleoli and a small amount of deeply blue cytoplasm which often was mildly vacuolated. Maturing cells with monocytic features comprised 34% of the differential.

These feature were most supportive of an acute myeloid leukemia (AML), possibly acute myelomonocytic leukemia (AML-M4) or acute monocytic leukaemia with maturation (AML-M5b).

Flow cytometry (now performed at Vetnostics!) was undertaken whereby a panel of fluorescently labelled antibodies was used to investigate the leukocyte population further.

Flow cytometry revealed a prominent expansion of large cells demonstrating strong expression of the monocytic marker (CD14) as illustrated by > 62% of cells above the horizontal line in Fig 3, together with negative staining of these cells with multiple other markers. Coupled with the blood film morphology, this was indicative of acute monocytic leukaemia with maturation (AML-M5b).

ANTI-MÜLLERIAN HORMONE TESTING FOR OVARIAN REMNANT SYNDROME AND CRYPTORCHIDISM

Anti-Müllerian Hormone (AMH) is a hormone involved in gender differentiation in the developing embryo.

In sexually mature dogs and cats it is produced by the granulosa cells of ovarian follicles and in the Sertoli cells of the testicles. AMH levels markedly decline following neutering. A single measurement of AMH is therefore highly effective in differentiating between sexually mature intact and neutered dogs and cats of both sexes.

AMH is therefore useful in identifying cases of ovarian remnant syndrome and cryptorchidism. The test is only suitable for animals over 6 months and repeat testing may be needed for animals between 6-12 months.

Sample Requirements: 3mL blood in plain tube. Note: samples should reach the lab within 24hrs of collection as AMH concentrations increase with sample aging. It is therefore preferred for AMH samples to be submitted on Mondays or Tuesdays.

Turnaround time: approx 3 - 4 days. **Cost:** $60 (excl. gst).

Equine blood drug screening analysis is no longer available.

Unfortunately the referral laboratory which previously performed equine blood drug screening (incl. pre-purchase exam screen) has informed us that they are no longer able to accept commercial submissions.

We are currently unaware of other providers in Australia that are able to offer this analysis and it is with regret that we can therefore no longer offer this service to our Vetnostics clients.

Laboratory Locations

1 Ballina
2 Buderim
3 Bundaberg
4 Brisbane (Central Lab)
5 Cairns
6 Emerald
7 Gympie
8 Gladstone
9 Hervey Bay
10 Ipswich
11 Kingaroy
12 Mackay
13 Southport
14 Redcliffe
15 Rockhampton
16 Toowoomba
17 Townsville
18 Tugun

For any further information, please contact the Vetnostics Department at QML Pathology on **1300 VET QML** (1300 838 765) or visit the QML Pathology Vetnostics website **www.qml.com.au/vetnostics.aspx**

Newsletter December 2014

QML Pathology. | Vetnostics

Figure 1

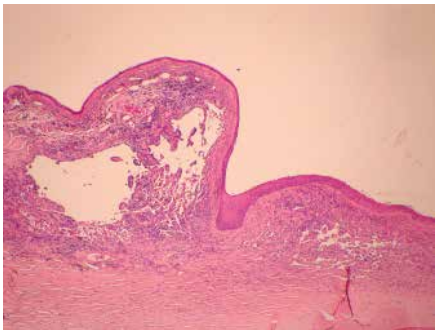


Figure 2

Figure 3

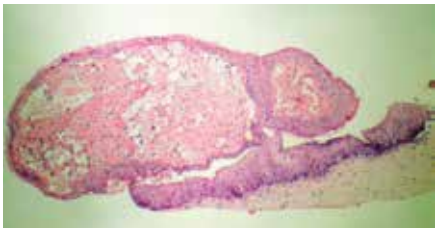


Figure 4

OCULAR PATHOLOGY ROUNDS
Dr Karen Dunn, FOCUS-EyePathLab at QML Vetnostics

Canine conjunctival haemangiosarcoma with corneal involvement- 2 interesting cases

Primary corneal neoplasms are rare in dogs, however corneal vascular tumors are sometimes seen, usually secondarily involving the cornea by extension from the conjunctival limbus. Conjunctival vascular tumours are relatively common in dogs, and in this species, most (approximately 65%) are histologically benign (haemangioma), with lesser numbers (approximately 35%) being histologically malignant (haemangiosarcoma). The average age of affected dogs is 8.5years, and UV exposure appears to be a risk factor for tumour development; such tumours most frequently occur in non-pigmented tissue on the leading edge of the third eyelid, or in the temporal bulbar conjunctiva. Local recurrence is possible, particularly with haemangiosarcoma, but metastasis of conjunctival haemangiosarcoma to other sites is relatively uncommon where there is adequate primary excision, however the prognosis is always cautious, with monitoring recommended. Here we compare 2 cases of haemangiosarcoma with corneal involvement in dogs

The first case is a 10year old Dalmation living in Queensland, with a vascular mass at the right lateral limbus (Figure 1; Haemorrhagic mass at right lateral limbus, during surgery, note corneal stromal haemorrhage. Courtesy Dr Guy Clare, Petvision,North Coast Veterinary Specialists). En bloc tumour excision was performed by full thickness sclerectomy and keratectomy followed by partial thickness autologous, peripheral corneal graft and a conjunctival pedicle graft to support the donor site. Histopathology revealed a well-differentiated haemangiosarcoma, arising in the limbal conjunctiva, with peripheral corneal stromal extension. Histologically the mass was located largely within the superficial bulbar conjunctiva, with extension into the adjacent superficial cornea (Fig 2; Limbal conjunctival haemangiosarcoma. H&E, 30x Magnification). The tumour was composed of variably sized branching vascular spaces and narrow clefts separated by minimal connective tissue and lined by plump invasive endothelial cells with enlarged variably sized nuclei and visible nucleoli, but relatively infrequent mitoses. Interestingly, between the superficial mass and the non-pigmented conjunctival epithelium, the stroma contained numerous slender, angulated fibres with irregular orientation, suggestive of elastotic degeneration, or 'solar elastosis' which is a change I see increasingly frequently with superficially located vascular tumours, consistent with their reported UV-exposure association.

The second case is a 10year old Shih-tzu, that presented with a melting ulcer and corneal perforation in the right eye 7 months prior to subsequent development of a small red mass observed on the surface of the previous graft (Fig 3; small red mass in paracentral cornea (with local scarring and pigmentation), courtesy Dr Filip Nachtegaele, Belgium). The mass was excised via keratectomy, and histopathology revealed a small pedunculated well differentiated haemangiosarcoma existing as open, irregularly branching vascular channels containing free erythrocytes and lined by plump active-looking endothelial cells (Fig 4; Pedunculated, vascular corneal mass, H&E, 30x Magnification). The mass was fully excised, and there is no evidence of recurrence 12months post-operatively. Haemangiosarcoma is an unusual diagnosis at this central corneal site—the tumour may have arisen from local corneal vessels induced by the ulcer (neovascularisation), however given that the conjunctival flap came from the temporal bulbar conjunctiva, a site known to show a higher incidence of such tumours, and also the very superficial nature of the mass, conjunctival vessel origin is suspected in this case.

FOCUS-EyePathLab (run by Dr Karen Dunn), is now available as an ocular pathology consultancy service for Vetnostics in both Queensland and NSW. Samples can be submitted to FOCUS-EyePathLab using the routine courier service for QML Vetnostics; the current cost of the service is $168 + GST. Further information on the ocular pathology service offered by FOCUS-EyePathLab through QML Vetnostics can be found at www.FocusEyePathLab.com, or by contacting QML Vetnostics.