THE BOSS'S BLOG

Local Businesses Can Bring International Resources

As I write this our Technical Manager Cameron Walker is attending the American Association of Clinical Chemistry Conference. Following the conference he will be spending some time with the Director of Lab Operations of our strategic alliance partner IDEXX Laboratories. We are most fortunate to have someone of the skills that Cameron possesses. At the recent Deer Branch Conference a long standing veterinarian said to me after his first presentation that, "I see NZVP in a whole new light after that."

His work in installing our new chemistry platform, which is now at both our laboratories, brings tangible benefits including reduced turnaround times and reference ranges with more detail at both ends. This step is a southern hemisphere first for veterinary diagnostics and his efforts have attracted the attention of others, here and overseas.

In the light shedding Queenstown presentation Cameron spoke of some of the directions we are looking to move in the areas of introducing existing tests, new test development and technology platforms. It was then very exciting to sit with Cameron and write our shopping list of things he will pursue on his trip. IDEXX Laboratories have already been the source of a major step forward for New Zealand's veterinary profession and NZVP with our introduction of their specific pancreatic lipase tests.

Other existing tests of theirs are planned to be introduced and Cameron will be advancing these on this trip.

Another very exciting development has been our first success in gaining FRST funding for a test development project. This project is a collaborative effort with the Epicentre from Massey University and another multinational diagnostic supplier. The bench work is underway and I look forward to being able to launch a test that significantly reduces the time and cost of the diagnosis of a significant disease. This project has captured the attention of the offshore party that sees our position as a commercial laboratory housed within a university veterinary faculty and so strongly linked to research capabilities as an internationally rare resource. We are currently signing confidentiality, commercialisation and intellectual property agreements that will allow several other projects to be discussed.

The benefits to NZVP, this country's veterinarians, farmers and pet owners from these international connections are clear to see. The first stated company value in our Strategic Plan is to have those wider sector interests at heart. This means we will promote existing tests and develop new ones even if we charge our clients less per test than options that are currently being used. As an example our dairy clients have overwhelmingly moved to an ELISA test for Neospora at $ per test from the long dated IFAT test at $.

Richard Campbell

OUR FRONT LINE STAFF

There have been a few changes recently in our staff who answer the phone, unpack all your samples and look after all the administration. To bring you up to date this is who they are:

The Palmerston North Team:

Anna Winterburn – Office Manager/Marketing/Event Coordinator
Anna is the Palmerston North Team Leader in Office Administration, and also organises marketing and event coordinating.

Helen Vink - Senior Specimen Receptionist (Part-Time)
Helen deals with the receipt of specimans into the laboratory, data processing, customer enquiries and is in charge of our busy specimen reception area. She also provides IT support to the Palmerston North staff and clients.

Kerry Burling – Specimen Receptionist (Part-Time)
Kerry deals with receipt of specimens into laboratory, data processing, customer enquiries, and is responsible for returning sample boxes/slides etc back to our valuable vet clinics.

Aimee Hamlin - IT Support (Part-Time)
Aimee generally works in the laboratory at Palmerston North, however also assists Helen and Wai with IT issues.

The Hamilton Team:

Wai Crombie - Client Services & IT Manager
Wai co-ordinates and troubleshoots IT issues including Vision, VIA, Vet Manager, ProVet, VetLink and RxWorks clinic support. She provides clinics with data reports for statistical purposes and assists clients with Medical Courier requirements.

Brooke Huirama - Specimen Receptionist
Brooke receipts, data processes all specimens and returns sample boxes and slides. He sends and processes all client and consumable orders and deals with customer enquiries.

Frances Rameka - Marketing & Administration
Frances co-ordinates and designs all marketing materials for example price lists, bi-monthly newsletter, clinic packs and proposals. She also maintains the NZVP website and deals with customer enquiries.

Kate Mitchell - Finance Manager
Kate administers banking, invoicing, statements and payroll. Kate addresses all account enquiries and carries out Management financial reports.

Fay Kennedy - Specimen Receptionist (Part-Time)
Fay receipts and data processes all specimens and returns sample boxes and slides. She purchases monthly goods and services and deals with customer enquiries.

WHAT NOT TO EAT!

Recently we had a submission from a vet who had seen a 9 year old, neutered male, Lakeland terrier, who presented with a history of anorexia and weight loss over the previous week. The owner reported that the dog had eaten a steel wool pad that had been used to rub down wood that had been stripped of lead based paint. The physical examination revealed no abnormalities. Blood was taken and submitted to the laboratory for a sick animal panel, CBC and blood lead concentration. The sick animal panel revealed a mild hypophosphatemia, likely to be secondary to the period of anorexia. The CBC revealed no anaemia; however there were 66 nRBC per 100 WBC and basophilic stippling in red cells. These findings and the history made lead poisoning highly likely. The diagnosis was confirmed when the blood lead concentration came back as >0.7 mg/l (toxicity confirmed at >0.3 mg/l).

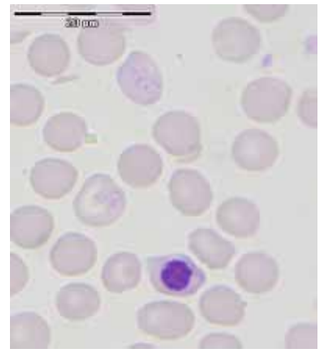
While chronic exposure from inhalation of fine particles of paint dust may have played a part in the development of lead toxicity in this dog, the most likely cause of the acute presentation was the ingestion of the steel wool pad, leading to GI absorption of toxic amounts of lead.

The dog was started on treatment with DMSA (dimercaptosuccinic acid) an oral chelation therapy. The possibility of lead exposure to the owner and her other dogs was discussed and further testing was suggested. The dog presented for a follow up visit 7 weeks later with a history of tremendous improvement in clinical signs and demeanour during the 6 week course of treatment. In the week since the treatment had ceased, however, there had been some mild resurfacing of clinical signs A repeat blood lead concentration came back as 0.2 mg/l which falls into the range suggestive of lead toxicity (0.1-0.2 mg/l). Another cycle of treatment has been started with follow up visits and repeat lead concentrations to be conducted regularly.

The owner, who had not been feeling well either, visited her GP and had her blood lead concentration checked. It was no surprise that it came back as high with a concentration of 1.07 µmol/l (normal range 0-0.35 µmol/l). The information from the laboratory stated that results >0.48 µmol/l are abnormal and indicative of increased lead absorption. Instead of treatment, a reduction in environmental exposure and regular monitoring, was recommended.

Thank you to Doug Gempton from Animalz VetEnt Napier, for this interesting case.

Rebecca Allan



A photomicrograph of the blood film from this case, showing two red cells with basophilic stippling and one nucleated red blood cell.

CONGENITAL TOXOPLASMOSIS IN A THREE-DAY-OLD LAMB

A three-day-old Romney cross lamb, although still bright and alert, exhibited progressive paresis and ataxia involving all four limbs. The lamb was from a small autumn lambing flock of mixed-age ewes with no history of vaccination against toxoplasmosis. At least one other neonatal lamb presented similarly.

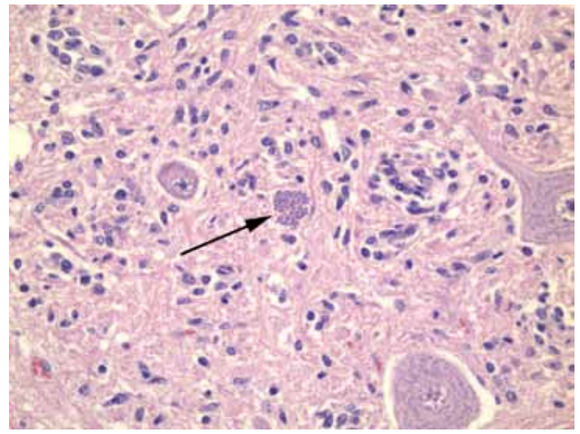
Emaciation and an inability to suckle (little milk in the abomasum) were evident on postmortem examination. There was no indication of white muscle disease or copper deficiency grossly. These differential diagnoses were both further ruled out with liver analysis providing selenium and copper concentrations of 1300 nmol/kg (adequacy 450-15,000 nmol/kg) and 150 umol/kg (adequacy 95-2000 umol/kg) respectively.

Subsequent histology of the brain and spinal cord revealed a marked, multifocal, non-suppurative myelitis and encephalitis with malacia. Within the inflammation there were basophilic structures consistent with Toxoplasma gondii pseudocysts containing bradyzoites confirming congenital toxoplasmosis (see photo). Ovine toxoplasmosis is most commonly recognised as a cause of foetal death. This is manifest as foetal resorption, abortion or stillbirths.

Foetal resorption and/or abortion are a result of infection in early to mid- pregnancy. The foetus is not yet immunocompetent and death ensues. The effects of infection occurring later in pregnancy are dependent on developing foetal immunocompetence. Many lambs will survive to near term and be stillborn – as a consequence of systemic infection and/or parasitic multiplication in the placenta with resultant placental insufficiency. Others will be born alive, latently infected, immune and clinically normal. However, as this case demonstrates, a small proportion, depending on the extent and severity of systemic infection, will be born alive but have locomotory dysfunction and/or an inability to suckle.

With thanks to Dr Paul van der Wel, The Veterinary Centre - Glenview, Hamilton.

Angus Black



Toxoplasma gondii pseudocyst (arrow) containing bradyzoites evident within the neuropil of the spinal cord at 40x magnification. Photo: Dr Isobel Gibson.

NZVP = Accurate Results Prompt Turnaround Excellent Service

CYATHOSTOME LARVAE - AN EMERGING PROBLEM?

What are Cyathostomes?
Cyathostomes are a group of nematodes comprised of around 13 genera and 50 species, also known as small strongyles. Adults are only 5-10mm long, and some are blood-red in colour, leading to the other name of redworms.

How prevalent are they?
By the 1980's in the United States it was recognised that cyathostomes frequently accounted for 100% of the strongyle egg output of grazing horses, while so called large strongyles such as S.vulgaris and S.edantus were becoming less common.(1)

Last year, the NZVP Hamilton laboratory performed several larval cultures on horse faeces from North Island studs, and found that over 90% of the strongyles present were cyathostomes, with only a very small percentage of Trichostrongylus sp. also present.

Why are they a potential problem?
Cyathostome larvae can undergo an encysted or hypobiotic stage, where L3 infective larvae from pasture reach the large intestine and form cysts as hypobiotic L3, or L4 larvae. These larvae may remain encysted for weeks to several months where they may be largely protected from the effects of anthelmintics.(2)

Thus, routine anthelminthic treatment may remove adult worms and give a FEC of zero, but the encysted L4 larvae may still be present. Clinical disease can result from inflammation due to large scale migration into or larval emergence from the intestinal mucosa.(2) Clinical signs can range from mild to severe forms of colic and diarrhoea. Severely affected animals can become dehydrated and occasional deaths occur.

When the larvae emerge depends on local climate; hot summers and cold winters may produce more encysted larvae, emerging when conditions are favourable for larvae on pasture. This may mean spring or autumn emergence. As the emerging larvae are not mature egg producers, the FEC may still be zero. It is important to note that factors such as age and condition may determine whether a horse can tolerate a cyathostome burden. The presence of cyathostome larvae must be interpreted in light of clinical signs.

How do I test for them?
The only way to effectively check for L4 larval cyathostome emergence is by a faecal sedimentation test rather than flotation, and observation of this sediment under an inverted microscope.

NZVP currently offers this test for $ + GST with a same day turnaround time.

James Connell

References:

1. "Evidence based Parsitology – It ain't the 60s anymore", M. K. Nielsen, R. M. Kaplan. Proceedings des 36êmes Journèes Annuelles de l'Association Vêtèrinaire Equine Française – Reims, France, 2008.
2. "Treatment of Equine Gastrointestinal Parasites", M. J. Murray, 8th Congress on Equine Medicine and surgery, 2003 – Geneva, Switzerland. International Veterinary Information Service, Ithaca NY (www.ivis.org), 2003; P0727. 1203.

T4 IN SIGHT HOUNDS

Caudal thigh alopecia is a common condition in greyhounds and T4 is often assessed because hypothyroidism is considered to be a possible cause or contributor to the condition. Although the alopecia does not appear to be linked to hypothyroidism, results of laboratory analysis often bring to light a low T4 and so an association is frequently made.

The reference range for T4 and fT4 in healthy sight hounds (greyhound, borzoi, whippet, saluki, afghan, deerhound, wolfhound) is wider than that for other breeds and the low end of the ranges can be as little as 1 nmol/l (T4) and 1.5 pmol/l (fT4). In a study carried out at Tufts University examining the results of over 5000 sight hounds it was reported that 45-65% (depending upon breed) of dogs would have been diagnosed with hypothyroidism based on total T4 concentration alone.

In contrast TSH concentration is similar to that seen in mixed breed dogs and consequently a diagnosis of hypothyroidism should be based on appropriate clinical findings, a low T4 concentration and an elevated TSH concentration, not simply reduced T4.

Sandra Forsyth

PARASITOLOGY AT NZVP PALMERSTON NORTH

Recently we have extended the testing capability of the Palmerston North laboratory by adding Parasitology testing on site. That means a much better turnaround time for clinics normally submitting to the Palmerston North laboratory.

Turnaround time for routine faecal analysis such as FEC, Giardia, Cyathostome larvae, Liver fluke and Cryptosporidium is usually same day of receipt (excluding weekends).

Lungworm larvae turnaround time is next day after overnight preparation.

We also perform faecal egg count reduction tests. We can include a full calculation of resistance, or susceptibility to each drench group in Excel format if required

Please note: There are minimum requirements of pre drench FEC and amount/condition of faeces for this test.

If you have any questions about our Parasitology services, please call us on 0800 838 522 to discuss solutions.

NZVP

HAMILTON
PO Box 944, Cnr Anglesea & Thackeray Sts
Fax 07 839 1471

PALMERSTON NORTH
PO Box 325, Tennent Drive
Fax 06 353 3986

FREE PHONE 0800 838 522

SYNAPSE

New Zealand Veterinary Pathology
Providing Diagnostic Excellence

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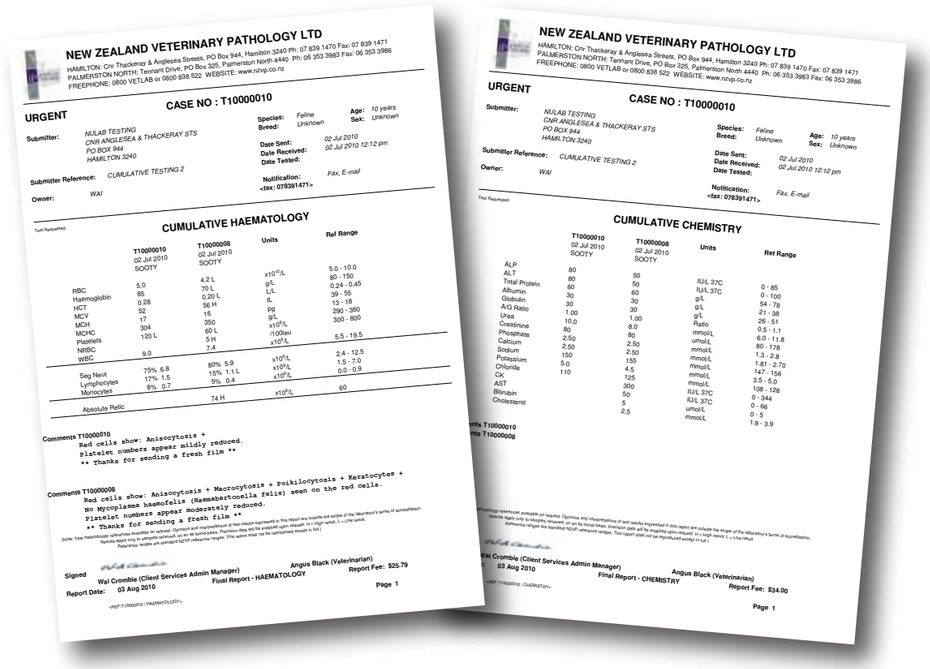
GST REMINDER

Budget 2010 included an increase in the rate of tax to pay on goods and services (GST) from 12.5% to 15% from 1 October 2010. Therefore the GST component of our prices will be rising by 2.5% from 1 October.

CUMULATIVE REPORTS ARE NOW AVAILABLE!



We now offer Cumulative Reports for all chemistry and haematology cases. Cumulative Reports are made up of multiple cases from the same animal, compiled into one easy-to-read report. This enables you to have a comprehensive overview of past results, so that you can assess an individual animal's health in one quick glance! The system relies on the animal's name and owner's name being correct, so spelling is critical!! Please contact our administration staff if you need more information.

A PLEA FOR A LEPTO KIDNEY

On behalf of Estendart limited NZVP would be grateful for a kidney from a ruminant diagnosed with Leptospirosis. NZVP will happily meet all costs associated with collection and dispatch of any suitable kidney.
If you can help please contact Angus or Richard on 0800 838 522

.... AND A PI BVD MILK

NZVP is seeking a milk sample from a cow confirmed as persistently infected with BVD. If you identify an infected cow, please contact Rae Pearson at the Palmerston Nth Lab. If you are able to provide us with a sample (3 or so milk pottles), we will re-imburse you for the cost of BVD Ag initial and confirmatory testing for that animal.

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