WHAT IS YOUR DIAGNOSIS? - DISCUSSION

The smear contains cohesive clusters of cells consistent with epithelial origin. These are predominantly large and polygonal cells with discrete cell borders, central round nuclei that have prominent nucleoli, and abundant amounts of blue-pink cytoplasm. Associated with some of these clusters there is also a population of smaller baseloid epithelial cells that have round, dense nuclei and scant cytoplasm.

These findings are consistent with a ***well-differentiated tumour of hepatoid gland origin.***

Hepatoid glands, also known as perianal glands, are modified sebaceous glands that are located primarily in the perianal skin, but which may also be located over the tail, dorsal thoracolumbar region, prepuce and infrequently at other sites. The majority of hepatoid tumours in the dog are benign adenomas. These are thought to develop under the influence of androgens as they are more commonly found in intact male dogs and may regress following castration. However tumours do develop also in castrated males and females. Hepatoid glands are not present in cats. The cytology findings reflect that the tumour is composed of broad trabeculae of hepatoid cells, which are the large polygonal cells that cytologically resemble hepatocytes, lined by a single layer of smaller baseloid reserve cells. A squamous component, reflecting ductal differentiation, may also be identified in some tumours.

Thanks to Dr Keith Thompson for the great photo.

Adrienne French

LIPAEMIA, CHOLESTEROL & TRIGLYCERIDES

Lipids are high on the agenda in human medicine but primary disease involving lipids is rare in animals. However, we do see lipaemia and hyperlipidaemia as a secondary change or as an artefact reasonably frequently. The following is a quick review of lipids.

What can we learn from the appearance of the sample??

- The presence of lipaemia in a sample means there is an increase in the level of TGs either as chylomicrons or VLDLs.
- In a non-fasted sample lipaemia is usually a post prandial change
- In a fasted sample, lipaemia is abnormal
- In normal clear serum the TGs are <2.3 mmol/l.
- When opaqueness is visible in a sample then TGs are > 6.8 mmol/l.
- Increased cholesterol alone does not cause lipaemia
- If a cream layer forms on standing, then chylomicrons are present.
- If the serum under the cream layer is still cloudy then there is a mixed hyperlipidaemia.

DDs for increased concentrations of cholesterol, triglycerides or both.

These can be divided into primary and secondary causes (see Table) and can be further categorized by whether increased TGs or cholesterol is the predominant finding.

Jenni Donald

	TGs	Cholesterol
Post prandial	↑↑	±↑
Primary causes		
Primary hyperlipidaemia of Miniature Schnauzers	↑↑	±↑
Primary hyperchylomicronaemia in cats	↑↑↑	N
Hypercholesterolaemia in Briards	N	↑↑
Secondary causes		
Acute pancreatitis	↑↑	±↑
Diabetes mellitus	↑	±↑
Hypothyroidism	±↑	↑
Hyperadrenocorticism	±↑	↑
Cholestasis	N	↑↑
Nephrotic syndrome	N	↑

SYNAPSE

New Zealand Veterinary Pathology
Providing Diagnostic Excellence

SEPTEMBER 2009 *.....making connections* ISSUE 36

THE BOSS'S BLOG.....

Price Rise Deferred

We have fielded several enquiries recently asking if there is a price rise coming from us soon. This certainly shows me how programmed we all become to regularly reinforced behaviours. For a number of years now the veterinary profession has received notice of price increases from one diagnostic laboratory in April and the other in July. 2009 has seen the April increase duly delivered and now some are wondering where the July increase from NZVP is.

Our August board meeting endorsed the recommendation to defer the 2009 price increase and review the situation again in December. The basis of the paper presented to this meeting was that we couldn't ignore the feedback from our clients and the other clear signals from the market that conditions have tightened significantly. Naturally this feedback does vary between some sectors and individual clients but the trend is plainly there for us to see.

At NZVP we see ourselves in no way independent of the veterinary profession. With our vet only client base we are in fact entirely dependent on the health of your veterinary businesses.

Sitting around our board table are veterinarians. Our New Zealand ownership means our board is not an offshore parent corporate body that is driven by an offshore share price. The discussion showed two vital viewpoints these veterinarians can bring to such decisions.

Firstly there was a very clear and deep understanding of the pressures the profession are currently dealing with. Secondly, and this aspect was shared by the entire group of board members and management, was the commitment as stated in our strategic plan to manage NZVP in accordance with the position that we see ourselves as part of the New Zealand veterinary profession.
To me this is a great example where actions speak louder than words and I am very proud to see this company having the fortitude to back up our words with such a decisive action. Believe me our books could do with the additional revenue that the price rise would bring and that would flow straight to our bottom line.

So, how can we afford to take this position?

This is where I must say thank you to all our clients for the fantastic support we are receiving. Like all businesses we have a core of longstanding loyal clients. It is the significant level of recent growth through new clients that has provided the organic growth that does allow us the room to hold the line at present.

What will happen in December?

The action committed to is to review again rather than automatically implement the increase. Of course prices will increase at some point. However the profession has the opportunity to maintain this period of price containment for as long as is possible by supporting NZVP.

Richard Campbell

NZVP = Accurate Results Prompt Turnaround Excellent Service

CLASSICAL DISEASE SYNDROMES IN UNUSUAL SPECIES

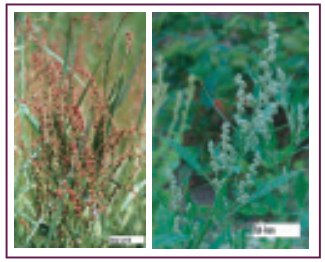
From time to time we have submissions from cases where a well known condition occurs in a species that is not normally affected. It reminds us to be aware of the possibility of unique management or environmental circumstances.

Listeriosis in goats.

In one week in late July two mixed aged female dairy goats from the same herd presented with weakness, wobbly gait, falling to one side, head tilt, drooling and tongue paralysis of one to two days duration. Dairy goats are commonly kept in a feedlot situation and the ration can include silage. The attending vet made a clinical diagnosis of listeriosis. Histopathologic findings in the brainstem of both animals were characteristic of listeriosis with asymmetric multifocal cavitation, microabscesses and meningoencephalitis.

Oxalate nephrosis is sheep.

Oxalate nephrosis is most commonly diagnosed post-mortem in dogs and cats that have died of renal failure following ingestion of antifreeze. The animals are attracted to ethylene glycol because it is sweet. Occasionally we diagnose oxalate nephrosis in sheep. However, identifying the source of oxalates can be unrewarding especially if the affected sheep ate all the toxic material and / or have been moved since. Sources of oxalate include: unfrozen puddles contaminated with drained antifreeze, and oxalate containing plants such as sheep sorrel, arum lily, rhubarb and fat-hen. Normally ingestion of these plants is of no consequence as the small amount eaten is diluted by the rumen contents. Nevertheless hungry sheep may gorge themselves if let into laneways or yards where sorrel and fat-hen are growing on the semi bare ground.



Thanks to Dr Jess Shelgren, The Veterinary Centre, Te Awamutu & Dr Claire Patterson, Vet Life, Oamaru for these cases.

Sandy McLachlan

DAIRY CATTLE SAMPLING FOR JOHNE'S DISEASE GENOMIC STUDY

LIC is undertaking a Johne's disease genomic project in conjunction with the Johne's disease Research Consortium (JDRC). The aim is to collect DNA samples from 2000 clinically affected dairy cows to screen for genetic markers for resistance and susceptibility to Johne's disease. The study is looking at both Friesian and Jersey cows, but they must have a recorded ancestry.
To assist in this project, NZVP will add a comment to the laboratory reports of all positive serology tests for Johne's from dairy cows with the contact details for LIC.

If you and your clients would like to be involved in this project then it can be followed up with LIC and complete confidentiality maintained.
LIC will require an EDTA sample for the DNA extraction. To expediate this, it would be ideal to take a red top serum sample for the Johne's serology and a purple top EDTA for possible use by LIC, at the initial visit if you are suspicious of Johne's disease.
If you have any questions please do not hesitate to contact the lab.

Richard Campbell

SERUM VITAMIN B12 – New technology provides greater accuracy.

Vitamin B12 analysis on liver and serum is used for the diagnosis of cobalt deficiency in ruminants. Liver analysis is regarded as the most accurate but is not always practical, so serum is often tested. The potential problem with the current serum assay relates to the presence of B12 analogues and pseudovitamin B12, produced by microbes in the rumen prior to circulation in the blood. Variable amounts of these interfering factors may be measured which can lead to falsely increased results.
NZVP are proud to introduce a new vitamin B12 assay which eliminates interference from B12 analogues, thereby improving accuracy, and provides a greater range of measurement. The new assay is based on cutting edge technology which uses micro particle electrochemiluminescence (ECL). This assay allows measurement of vitamin B12 in serum down to 40 pmol/L which previously has not been possible.

NZVP is proud to be the first veterinary laboratory in the southern hemisphere to use ECL technology and the only veterinary diagnostic provider in New Zealand to offer the new vitamin B12 assay.

Cameron Walker

INFECTIOUS PUSTULAR VULVO-VAGINITIS IN CATTLE

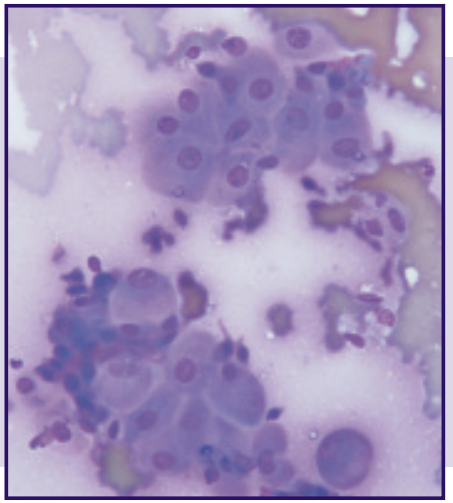
Two rising 3 year old cows that were recently mated, presented with fever, purulent vaginal discharge, loss of appetite, weight loss and decreased milk production. The clinician suspected infectious pustular vulvo-vaginitis (IPV). Serum samples were taken in the acute phase and tested at NZVP using an IBR Antibody ELISA which detects antibodies to Bovine Herpesvirus Type 1 (BHV-1). Initially, both animals were negative for BHV-1 antibodies. Samples from both animals taken > 3 weeks later and retested with the same ELISA were positive.

This sero-conversion indicates the cows were infected with BHV-1 which presented as IPV. BHV-1 most commonly causes respiratory disease, with coughing, nasal discharge and high fevers but in rare cases, ocular, nervous or genital forms can occur with the same virus.

Thank you to Dr Jenny Weston, IVABS, Massey University for this case.

WHAT IS YOUR DIAGNOSIS?

Fine needle aspirate from an approximately 2cm diameter raised dermal mass lesion on the tail base of a 10 year old male cocker Spaniel dog.



Using β-hydroxybutyrate for diagnosing diabetic ketoacidosis in dogs and cats

The metabolisation of fat into ketone bodies occurs in times of starvation and is a survival mechanism allowing ketones to be used for intracellular fuel when glucose concentrations are low. In the diabetic patient a similar situation arises except that lipolysis can become excessive with ketone bodies produced in large number and the patient may become acidotic resulting in a critical medical state. The ketone bodies are acetone, acetoacetate and beta-hydroxybutyrate (βOHB). The latter is produced by the interaction of acetoacetate and H+ and the more acidotic the patient, the higher the concentration of βOHB. Consequently, the concentration of βOHB is a reflection of the severity of the acidosis that is present.
Urinalysis strips detect acetone and acetoacetate but not βOHB. The more acidotic a patient is, the lower the concentration of acetone and acetoacetate and the higher the concentration of unmeasured βOHB in the serum and urine. Also, as a diabetic animal is treated, βOHB is metabolised to acetoacetate and so more ketones are detected in the urine despite a reduction in the severity of the underlying acidosis. How confusing! In addition, the serum concentration of ketones rises before ketonuria is noted and sporadically it is not possible to collect a urine sample from a diabetic patient. Consequently, there are a number of occasions in which it may be useful to measure serum βOHB concentration. We can easily measure this compound in a blood sample submitted for a routine sick animal panel if you need it as part of your diabetic patient management.

Sandra Forsyth

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