

WHAT'S YOUR DIAGNOSIS? Answer: Canine cutaneous plasma cell tumour

The smear is of high cellularity, containing a population of individualized round cells that exhibit moderate to marked variation in cell size (anisocytosis) and variation in nuclear size (anisokaryosis). The nuclei are round to oval and tend to be eccentrically located within the cells, with dense chromatin and indistinct nucleoli. Cytoplasm is variable in amount and dark blue in colour often with a pale zone adjacent to the nucleus (paranuclear clearing, or Golgi zone). Cells with single, very large nuclei (karyomegaly) are present, as well as bi- and multi-nucleated cells.

Canine cutaneous plasma cell tumours can vary cytologically from well-differentiated plasma cells to quite markedly pleomorphic populations as in this case, but despite the appearance of the cells the majority of these tumours are behaviourally benign, and complete surgical excision is the treatment of choice. Occasional tumours may be locally infiltrative and recurrent, and metastasis to regional lymph nodes has been reported in a small proportion of cases.

Ref: T. L. Gross et al. *Skin Diseases of the Dog and Cat 2nd Edition (2005)*

Adrienne French

TSE SUBMISSION REMINDER

MAF Biosecurity New Zealand has asked NZVP to encourage more submissions for the Transmissible Spongiform Encephalopathy (TSE) Surveillance Programme. There are financial incentives for both veterinarians and farmers to participate in the programme. Please find the key information copied from the MAF BNZ website below.

Although livestock in New Zealand are not infected with the TSE agents, any country that wants to trade as TSE-free must undertake an internationally acceptable on-going TSE surveillance and monitoring programme, which has been designed along the guidelines provided by the World Organisation for Animal Health (the OIE). These incentive arrangements assist New Zealand to meet these guidelines, and ensure the continued market access that is vital to New Zealand's economy. The Ministry of Agriculture and Forestry (MAF) pays the following transmissible spongiform encephalopathies (TSE) investigation incentives directly to farmers and veterinarians:

Farmer Incentives

Animal	
Cattle	
Deer	
Sheep and goats	

Veterinary Incentives

Animal	
Cattle	
Deer	
Sheep and goats	

Please note: A maximum of 2 samples may be submitted per farm per year. For investigation of further cases please contact MAF Investigation and Diagnostic Centre (IDC) on 0800 80 99 66. If the brain is not removed by the practitioner, the following deductions will be incurred: \$ plus GST for cattle, \$ plus GST for deer and \$ plus GST for sheep.

Note: To receive payment, MAF must receive a completed TSE submission form, along with a copy of the laboratory report and a GST invoice itemising each case number.

Sampling Criteria

- Age
 - Cattle aged 30 months up to 9 years
 - Deer, sheep and goats 2 years and older

Clinical presentation

- Cattle which might be considered as having a metabolic disorder which fails to respond to treatment. Downer cattle which have no obvious injury.
- Dairy cattle which have previously behaved reasonably in the milking shed, but which are now at the point of being culled for behavioural reasons.

- Cattle showing any signs which might be considered to be of neurological origin and which do not respond to treatment.
- Cattle showing abnormalities of gait or stance which are not obviously associated with musculo-skeletal pathology.
- Progressive non-responsive nervous disease cases in adult sheep, goats, and deer.
- Progressive non-responsive cases of ill thrift in deer.
- Acute or peracute pneumonia, or aspiration pneumonia in adult deer.

In each case, where no other cause of the disease can be definitely diagnosed at the time of necropsy.

NB: 'Nervous behaviour' in cattle is defined as: persistent ear-twitching, strange gait, aggressiveness, nervousness, cup-kicking, or behavioural change.

Submission Form For Use By Veterinarians:

To receive payment, a TSE submission form must be completed for each case, sent to the laboratory with the samples, and also returned to the address stated in the submission form. When submitting samples, it is critical to ensure that they conform to the specifications given in the submission form. A CD on Bovine Brain Removal Methods is available on request from TSEsurveillance@maf.govt.nz

To qualify for payment the specimen must meet specifications. The brain and brainstem must be submitted fixed in formalin. The brainstem must be intact and include the obex. This is easily achieved if the head is removed by cutting through the atlanto-occipital joint and the spinal cord severed as far caudally as possible. A segment of unfixed frozen spinal cord should be submitted as well. Further information is available on the MAF BNZ website listed below.

TSE submission forms in PDF format are available on the following websites:

NZVP - www.nzvp.co.nz
MAF BNZ - www.biosecurity.govt.nz/pests-diseases/animals/tse/surveillance-incentives.htm

Alternatively, NZVP reception can e-mail one as an attachment upon request.

NZVP

HAMILTON

PO Box 944, Cnr Anglesea & Thackeray Sts
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PALMERSTON NORTH

PO Box 325, Tennent Drive
Fax 06 353 3986

FREE PHONE 0800 838 522



SYNAPSE



OCTOBER 2010

.....making connections

ISSUE 42

NEW PRICE LISTS - GST RISE

Included with this edition of Synapse are copies of our new price lists with **GST increase only** (effective from October 2010). Please contact us on 0800 VETLAB or 0800 838 522 if you require some additional copies to be sent to your clinic.

NZVP CELEBRATES ACHIEVING IANZ ACCREDITATION

In August our Hamilton Laboratory achieved IANZ Accreditation, demonstrating our technical competence and confirming that our tests are performed to international standards. The Board joined all our Hamilton folk for a celebratory lunch followed by the hanging of the IANZ certificate on the wall. I believe it is so important to take some time to celebrate significant milestones in the growth of any enterprise and this was a biggie for us.

Some of the tangible parameters that the project can be measured by include two years of time and tens of thousands of dollars. Less tangible to you, our clients, but very important in our evolution is the sense of pride and achievement shown on the day.

Our approach to accreditation at our Massey University lab has been a two step one. Firstly we applied for accreditation of serology, which is centred at this site. We have received communication from IANZ that they have approved our responses to the corrective actions from the audit.

This means our second certificate is near and with our annual Palmerston North Board meeting in November, the Board may well be in for another luncheon!

The builders are in our Massey lab as I write carrying out renovations that are required for us to enter a lab-wide audit. This lab wide accreditation is our next goal. These projects reflect a significant stage in the evolution of our vision to be recognised as a leading edge provider of veterinary diagnostic services. Another key aspect has been to increase our range of tests to be as complete a service provider as possible. I can quickly count seven additions to our range in the last two years off the top of my head and there are three more major projects underway now.

We are also taking an exciting and challenging new approach to adding to our repertoire of tests. Up until this point we have been adding established tests. Working away on a corner of a bench in our Massey lab is a post graduate student. This project is in collaboration with the Epicentre and has gained FRST funding. If successful we will launch a world first test format for a major animal disease that will reduce the cost of testing and the turnaround time for a result. With commercialisation agreements currently being negotiated with a multi-national company there is the prospect of New Zealand receiving revenue from testing carried out throughout the world.

Now that would be a great reversal of the current alternative flow of money and would rank as a career highlight as well as a contribution to New Zealand Inc.

Richard Campbell



ABOVE: Yolande Conrade, our Transitional Facility Operator & Quality Manager hanging the certificate



METABOLIC SYNDROME IN HORSES

At first glance laminitis and abnormalities in serum biochemistry would seem to bear little relationship but metabolic syndrome is strongly associated with the risk of developing laminitis in horses.

Equine metabolic syndrome (EMS) is a condition in which insulin insensitivity develops resulting in abnormal handling of glucose and triglycerides by the body. Obesity is a notable feature in many of these horses with excessive fat present in the crest, around the shoulders and tail and in the sheath or mammary gland. The horses are reported to be "good doers" and seem able to maintain their weight despite meagre rations. Not every overweight horse develops metabolic syndrome and occasionally EMS can be seen in lean horses with pathogenesis in this group not well understood. Affected horses are typically middle aged (5 to 15 years of age) and are often pony breeds or warm bloods.

Lameness due to laminitis is a common presenting sign and on first examination there can be features of long-standing disease although there may be no corresponding history of previous laminitis. Metabolic syndrome may also be detected incidentally in horses that present for unrelated diseases or for routine health care.

When blood work is assessed there are usually no abnormalities noted in the CBC but biochemistry may show non-specific elevations in triglyceride and glucose concentrations, and sometimes a mild increase in liver enzyme activities. The presence of hyperglycaemia raises the possibility of type 2 diabetes mellitus secondary to chronic insulin resistance and pancreatic exhaustion. This condition is uncommon in horses but can be confirmed by finding a concurrent glucosuria.

Additional testing is required to define EMS and this includes fasting serum insulin concentration (FSI) and glucose tolerance testing. The FSI is nearly always elevated (> 210 pmol/L) but may be around 150-200 pmol/L in some horses with EMS and suspicion should be aroused if this is the case in the presence of appropriate clinical signs.

The insulin concentration may be increased in a horse with laminitis due to the antagonistic effect of adrenaline and cortisol so testing should be delayed until pain and stress are controlled. Dynamic testing can be carried out in horses with an equivocal insulin concentration and/or for confirmation of the condition.

Because there are many factors (especially dietary) that can produce false or equivocal results in analysing FSI a standard protocol should be adhered to. It is recommended that a single flake of hay with low soluble carbohydrate content is given before 10 pm and then blood sampled between 8 and 10 am the next day.

Dynamic testing: Combined Glucose-Insulin Test

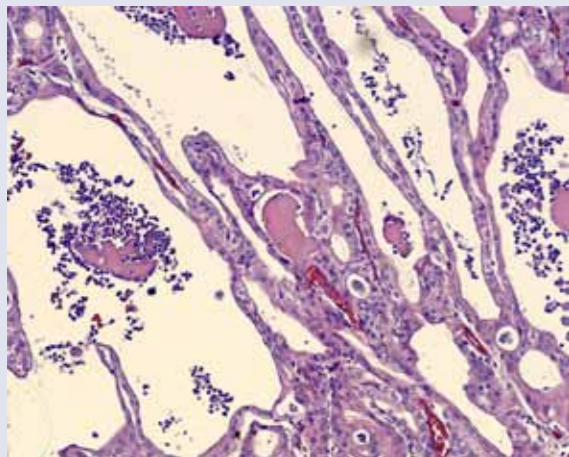
1. Pre-sample for baseline glucose and insulin (t = 0min)
2. Administer 150 mg/kg 50% dextrose IV
3. Flush catheter
4. Follow immediately with 0.10 U/kg regular insulin IV
5. Measure glucose at 1, 5, 25, 35, 45 and 60 minutes post infusion from blood sampled at a different site to that used to administer glucose
6. Take samples for serum insulin concentrations at 0 and 45 minutes

Following these infusions, blood glucose returns to baseline by 45 minutes in healthy horses, so preliminary results may be known within an hour. However, it is still necessary to evaluate insulin concentrations to determine whether insulin resistance is present or not. Typically in horses with EMS insulin concentration is > 700 pmol/l at 45 minutes indicating that they are secreting more insulin or clearing it more slowly than normal ie they are insulin resistant.

Hypoglycaemia is a potential complication although this hardly ever occurs if patients are selected appropriately. Clinical signs include sweating, weakness, muscle fasciculations and blood glucose < 2.2 mmol/l. In the event of hypoglycaemia, 50mg/kg dextrose (50ml of 50% dextrose to a 500kg horse) can be administered intravenously and repeated as required.

Sandra Forsyth

EQUINE PLACENTAS



Acknowledgement:
Thanks to John Hunter, Hamilton Vet Services, for case material.

References:

Shivaprasad HL et al. Cystic adenomatous hyperplasia of the equine allantois: a report of eight cases. *J Vet Diagn Invest* 6: 107-110, 1994.

Hong CB et al. Equine abortion and stillbirth in Kentucky during the 1988 and 1989 foaling seasons. *J Vet Diagn Invest* 5(4): 560-566, 1993.

New Zealand Veterinary Pathology frequently receives samples from equine abortion cases. As in the case of the bovine, submission of the placenta, whether in its entirety or sampled for histology, can greatly increase the chances of obtaining a diagnosis. Most cases of placentitis in the horse are caused by ascending infections, making sampling of the placenta close to the cervical star, as well as other sections of the gravid horn important. It is also worth considering measuring the umbilicus if it appears excessively long or twisted. A study of abortion in Kentucky thoroughbreds suggests that the mean length of the equine umbilicus is approximately 71 cm, with approximately 4.4 full twists. There is a large range of normal with these statistics. If umbilical cord twisting has been sufficient to impair blood supply to the foetus, it should be accompanied by oedema and congestion along the cord, as well as congestion of the foetus.

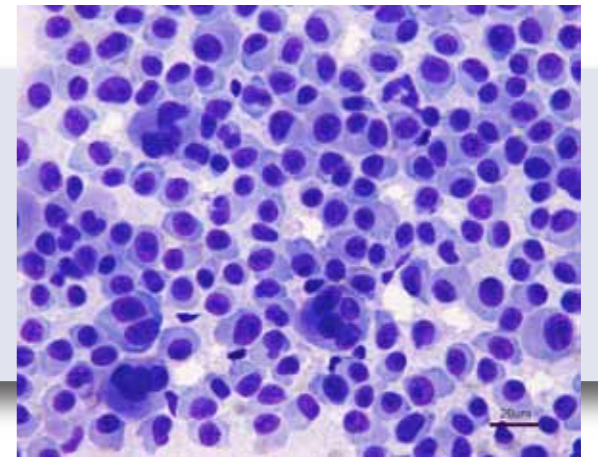
One of the more unusual lesions seen in association with placentitis is known as cystic adenomatous hyperplasia of the allantois. This lesion is made up of severe diffuse or regional (plaque-like) thickening of the allantochorion. The affected placenta can be around 5 cm thick, and on section may appear to be composed of bubbles containing gooey clear fluid. On section the placenta contains numerous large cystic structures (see picture). This lesion is considered to be a response to chronic placentitis. It is not associated with any particular etiologic agent, and occurs in conjunction with a number of causes of placentitis.

Isobel Gibson

WHAT'S YOUR DIAGNOSIS?

Fine needle aspirate of a focal, polypoid, alopecic skin mass, approximately 1.5cm in diameter, from the head of a 12 year old Cocker Spaniel.

See over page for diagnosis...



ENTERIC CAMPYLOBACTERIOSIS IN CATTLE – REAL OR IMAGINED?

Campylobacter spp. are recognised as pathogens and, specifically, a cause of enteritis in many domestic species. By contrast, in cattle, *Campylobacter* spp. are commonly regarded as commensals within the gastrointestinal tract. There has been an association with *Campylobacter jejuni* and "Winter dysentery" in the Northern Hemisphere but, in general, little emphasis has been attached to this bacterial genus as a cause of bovine enteritis in New Zealand.

However, reviewing recent campylobacter culture submissions to NZVP provides some interesting information. Within the last ten months there have been a total of eighty-two cattle cases requesting campylobacter culture on faeces or intestinal contents. Of these thirty-four cultured positive with *C. jejuni* being isolated eighteen times, *C. coli* thirteen, *C. fetus* twice and *Campylobacter* (species not identified) once.

In all cases the clinical history included a description of scouring frequently with ill-thrift and/or losses. The ages of the affected cattle ranged from pre-weaning calves through to adult with an over representation of yearlings. Of the thirty-four culture positive results ten were in conjunction with other isolates – namely *Yersinia pseudotuberculosis* (8), *Y. enterocolitica* (1) and *Salmonella typhimurium* (1).

Another cow was identified as *Johnes* positive serologically.

Of the remaining twenty-three cases where only *Campylobacter* spp. were isolated, two were supported with histological findings typical of septic enteritis/hepatitis.

In addition, on the few occasions where there has been subsequent feedback from practitioners following positive culture results, a response to antibacterial therapy had been noted.

Whilst it is difficult to draw firm conclusions without eliminating all the other possible causes of scouring in cattle including endoparasitism, BVD, copper deficiency and adenoviral enteritis the above findings, at the very least, suggest a possible role for *Campylobacter* spp. as a cause of enteritis in cattle.

One approach, when dealing with scouring in cattle and particularly younger stock, would be to consider enteric campylobacteriosis as a differential diagnosis when the more common causes have been eliminated during the course of an investigation.

Angus Black

JACKIE O'NEILL

On Thursday October 28 we were joined by many at the funeral for our much loved and respected colleague and friend, Jackie. The attendance of so many clients and former colleagues provided a most appropriate tribute to a lady who dedicated herself completely to providing the very best service possible to all her clients.

Jackie's family were very welcoming to NZVP participating in Jackie's service. The guard of honour where we were joined by many who shared a professional association was a very touching tribute. We all extend our deepest sympathies to her wider family group.

In keeping with her life we will give Jackie the final word. Within five minutes of my arrival at NZVP Jackie gave me this clear position.

"Let's get this straight, NZVP pays me but I work for our clients."

Richard Campbell