Paws claws and udder things

Gribbles VETERINARY

September 2021

What's inside?

Spring into spring!

With our "same as last year" trace element test pricing, it is a great opportunity to ensure transitional and pre-mating herds are in peak condition for the spring season. Mix 'n match trace element tests as needed to suit each farm's requirements.

Recommended spring trace elements:

- **BOH or NEFA** (x10) - Indicator of negative energy balance which can negatively affect fertility.
- **Calcium, magnesium, phosphate** (x10) - Hypocalcaemia can negatively affect fertility. Magnesium needs to be assessed alongside calcium pre-mating. Levels key for metabolic disease prevention.
- **Selenium** (x5), **copper** (x10) - Deficiency can affect conception rates. Adequate selenium levels important in periparturient immunity for reducing mastitis, metritis and associated with retained fetal membranes.
- **Vitamin B12** (x10) - Low levels may indicate suboptimal nutrition affecting the ability of ruminal microflora to synthesise vitamin B12.
- **Zinc** (x10) - Monitor for facial eczema prevention.
- **Inorganic iodine** (x10) - Required for energy metabolism, milk production, protein synthesis, lamb/ calf survivability and reproduction.

Suggested panels:

Premating panel

Important analysis to assess factors that can impact the reproductive performance of the dairy herd.

> BOH, calcium, copper, magnesium x10

> Selenium x5

Transition panel

Important analysis for dairy herds to help support a successful transition period.

> Calcium, magnesium, phosphate, vitamin B12, NEFA or BOH x10

> Selenium x5

Samples required:

10x serum samples (red top) from herd.

Not sure what elements should be tested? Simply give us a call and we'll be happy to help. 0800 GRIBBLES.

So, what are you waiting for? Get mooving now and take advantage of some great trace element pricing!

A picture is worth a thousand words

MICHAEL HARDCASTLE

As veterinarians we are trained to describe lesions accurately, but sometimes language can fail, however "a picture is worth a thousand words". Therefore, the submission of images alongside a written history is always encouraged and welcomed for every case we receive at the laboratory.

When to submit images

The site of biopsies and the selection of lesions to sample can be critical in their interpretation. Images can be very helpful in anchoring our findings around the clinical process, whether it is a skin problem in a dog or lung lesions in a cow. We also find clinical and radiographic images particularly helpful in providing context when interpreting small biopsies of organs or bone lesions. The relationship between biopsy size and lesion size, and the location of the biopsy (i.e. whether or not it would have been representative of the lesion) serve to inform our confidence in a diagnosis and our ability to rule out other differential diagnoses.

Occasionally, we also receive fixed samples that have warped, changed in colour and texture, or fragmented in transit. Surgical margins or the location of the mass/lesion within the tissue may not be obvious once these changes have occurred. Images of the fresh lesion in situ and/or after removal can be helpful in grossing the specimen and deciding where to collect sections to examine areas of concern to the surgeon.

The diagnostic value of images

Case 1

A 17-year-old, Domestic Short-Hair cat underwent multiple skin biopsies since a veterinarian wished to rule out epitheliotropic lymphoma. The initial history provided was that the patient had been treated with monthly injections of methylprednisolone acetate.

Histopathology mainly demonstrated cicatrical alopecia (i.e. fibrosis and loss of hair follicles and adnexa), a non-specific change suggestive of a previous skin injury such as trauma or ischaemia. Acquired skin fragility was mooted as a possible underlying problem given the history of glucocorticoid therapy.

Further discussion with the treating veterinarian revealed that the cat had "see-through, wafer-thin" skin, and images submitted subsequently confirmed the presence of thin, multifocally ruptured skin (Figures 1 and 2) consistent with acquired skin fragility. Other possible causes/associations could include diabetes mellitus, excess use of progestagens, severe liver disease, phenytoin administration, feline dysautonomia and nephrosis. Idiopathic cases are also seen. Hyperglucocorticoidism and diabetes are the most likely causes.

Case 2

A four-year-old Pig-Dog had a rapidly developing, firm irregular haemorrhagic mass in the right caudal mammary region, with bruised and necrotic-appearing overlying skin and bloody fluid expressible from a nipple.

Initial skin biopsies showed only mild and non-specific reactive and inflammatory changes with oedema. An image was then submitted showing the extent of the lesion (Figure 3) and it was discussed that the initial biopsies were probably not representative of the disease process.

Since the lesion was aggressive and the patient did not respond to supportive treatment, it was euthanased. Subsequent histopathology of larger and deeper samples identified a malignant round cell tumour alongside a concomitant haemangiosarcoma.

How to submit images

To submit images, you may send a hard copy/print out with the submission form, or (preferably) email images to your local laboratory (these email addresses can be found at any time on our website or inside out price book):

> Auckland.vetlab@gribbles.co.nz
> Hamilton.vetlab@gribbles.co.nz
> Palmerston.vetlab@gribbles.co.nz
> Christchurch.vetlab@gribbles.co.nz
> Dunedin.vetlab@gribbles.co.nz

If they are large files or a series of images is being provided (e.g. a CT study), then a link to an external shared drive or online server can alternatively be emailed e.g. Dropbox or similar. We have internal network image storage and document recording systems for linking your email to your submission, allowing any pathologist to review an image when they are examining a case.

Figures 1 & 2 (above/below). Thin, multifocally ruptured skin from the Domestic Short-Haired cat in Case 1.

Figure 3 (below). Haemorrhagic mass in the Pig-Dog from Case 2.

BVD testing options - what to select

When checking the BVD status of your herd, we offer several testing options that will cover most situations. All options offer something a little different, but we often see some confusion around the difference.

Antigen ELISA testing

The antigen ELISA test is suitable for testing of individual animals.

- Ear notch samples can be from animals of any age
- Serum samples can only be tested if the animals are > 35 days old.

BVD PCR

This is our standard BVD PCR test. Samples are tested in pools but results are reported for individual animals.

- If a positive result is obtained from a pool, we automatically test each individual sample in the pool (at no extra cost) to determine which individuals are positive.

BVD PCR screen

This cost effective screening test is designed for larger herds or mobs.

- Testing is only performed on pools and you will only receive a pooled result.
- Individual testing is NOT performed on positive pools.

Note: Confirmation testing to identify individual positive animals will only be done on request (and incurs an additional charge).

BVD TESTING	
	BVD Ab ELISA *(>10months)* - single / pool *(select)*
→	BVD Ag ELISA *(ear notch - any age serum >35 days)*
→	BVD PCR *(any age - serum / ear notch)*
→	BVD PCR screen -pooled
	BVD PCR + EBL ELISA

Sample preparation for histology

RAMONA EIHOLZER

To ensure your histology samples reach us in the best possible condition for processing and interpretation, we have some tips for how the samples need to be handled before you send them to us.

> Samples to be submitted for histology must be fixed in 10% neutral buffered formalin, in a 10:1 ratio of formalin to tissue. So if your sample weighs 50g it will need to be placed in 500 mL of formalin.

> For optimum fixation to occur, ensure the sample is placed in an appropriately sized container that is approved for use with formalin. The container should be a wide necked container, as samples swell during the fixation process and can be difficult to remove from bottles, etc.

> If you do not have an appropriately sized container to allow for a 10:1 ratio, or if you do not have any formalin, or the formalin that you have is less than 10%, then please state this clearly on the submission form. This will enable our staff to transfer the sample into an appropriate sized container and/or add 10% formalin immediately on arrival at the laboratory.

> Avoid cutting into the specimen, as this can interfere with obtaining clean sections of margins and correct measurements.

For more information on handling of histology samples, please refer to the histopathology section of our online Vet Handbook, or simply give us a call.

COVID update

All of our laboratories (and Fond Farewells cremation service) will be operating under all COVID Alert Levels as we are an essential service. However in Alert Levels 2 - 4 there are some things to be aware of:

> Some turn-around-times may be longer due to obligations regarding COVID personnel requirements (safe distancing etc.)

> There may be some delays with externally referred tests as subcontractors may be closed during this period.

> Post-mortem services are only available on request during Level 3 & 4 lockdown – please contact your local laboratory to discuss, PRIOR to sending cadavers.

If you have any questions or concerns, please just get in touch. As always, stay safe.

Case of the month

GEOFF ORBELL

Clinical history:

Fourteen rising 1-year-old beef bulls and steers died suddenly over a 24-hour period five days after being yarded for drenching (pour-on) and castration. The cattle had been bought up from the South Island (in February) for finishing and had reportedly been previously vaccinated twice for clostridial disease prior to transport. Both castrated and uncastrated cattle were dead.

Pathology:

On post-mortem examination of multiple cattle, the subcutaneous tissue on the ventrum was oedematous and yellow, and extended into underlying muscle in both castrated and non-castrated animals. Clinically Blackleg was suspected and post-mortem samples were submitted for culture and histology. Histologically the lesions were more consistent with malignant oedema with the subcutaneous tissue and fascia primarily affected. Anaerobic culture failed to isolate any clostridia.

Treatment and further investigation:

All remaining cattle were treated with high dose penicillin and vaccinated for clostridial disease. Another five died over the next three days with no more deaths five days after vaccination.

One bull was lame with a markedly swollen upper right hind-limb, but was systemically well. The decision was made to euthanase this animal and submit further samples for histology and culture. On post-mortem examination there were multiple areas of yellow, oedematous subcutaneous tissue on the ventrum, poll, distal limbs and groin. The proximal hind-limb muscles were markedly swollen, darkly discoloured and haemorrhagic.

Histologically there were similar oedematous changes to the first post-mortem but no clostridia were identified and there were more acute and chronic lesions involving the hind-limb muscles. Anaerobic culture was unrewarding from the affected muscle.

Discussion:

These cases are most consistent with Malignant Oedema but Blackleg could also be involved, which would explain the sudden death of uncastrated cattle and the changes in the thigh muscles of the euthanased bull. Tissues from both cattle have been sent overseas for immunohistochemistry to help identify the clostridial species involved.

Although Malignant Oedema and Blackleg are both clostridial diseases, the disease pathogeneses and usually the pathogens involved are different, although *Clostridium chauvoei* can cause both.

Malignant Oedema usually occurs secondary to soil contamination of wounds, in this case castration wounds, whereas Blackleg is caused by sporulation of pre-existing clostridial spores in the muscle due to creation of a localised anaerobic environment (usually blunt trauma e.g. yarding).

Malignant Oedema has been associated with *Clostridium septicum, C. sordellii, C. chauvoei, C. novyi* and *C. perfringens*. Blackleg is only caused by *C. chauvoei*. It is worth noting that Malignant Oedema is the only disease in New Zealand ruminants where *C. sordellii* has been confirmed to cause clinical disease.

Vaccination in the face of an outbreak is often effective in reducing the morbidity and mortality rate, although deaths will usually continue for a number of days until there is an adequate immune response. A booster vaccine is still recommended 2-4 weeks later even if mortalities have ceased. Live clinically affected stock are rarely seen with both Malignant Oedema or Blackleg, and very rarely saved, but in some cases high dose penicillin can be effective in preventing mortality but clinical lesions will still persist in affected tissue reducing carcass value.

Vaccination for clostridial disease is usually extremely effective in prevention when label directions are followed and boosters are given. In this case, disease could have been due to lack of vaccination, improperly handled/administered vaccine, or less likely vaccine failure.

This case is therefore unusual, but the previously reported vaccination was not able to be confirmed through correspondence with the previous owner.

Diagnosis of cases of suspect Blackleg or Malignant Oedema usually requires histology or culture, but these are often adversely affected by autolysis caused by post-mortem clostridial proliferation. Culture from dead cases of suspect Malignant Oedema is more complicated, in that some of the causative clostridia are also normal post-mortem invaders, e.g. *C. septicum* and *C. sordellii*.

Ideally fresh samples should be from recently dead stock and include large pieces of affected muscle or oedematous fascia, so that anaerobic sampling can be taken from the centre of affected tissue, as exposure to oxygen greatly recues the chance of successful culture. Histology should be performed on multiple smaller samples (1cm x 2cm x 1cm) from affected muscles and fascia to ensure rapid fixation.

Thank you to Cosmin Susa from Hunterville Vet Clinic for providing the images and clinical feedback on this case.

Figures 1 & 2:

Post mortem examination of the euthanased bull demonstrating extensive muscle haemorrhage and necrosis and subcutaneous oedema.

Consumable of the month

Do you order laboratory consumable items from us online or via our order form? If you need just one blood tube or swab, or enough for a herd, we've got you covered.

Our featured consumable items in September are **Bio-bottles** for shipping samples.

Bio-bottles are the recommended container for sending biological samples to the laboratory via commercial courier. All bottles comply with UN specification packaging, are 95 kPa independently tested and approved. Using a Bio-bottle together with a zip-lock sample bag and your sample container, ensures all sample packaging complies with legal requirements.

Bio-bottles are available in three different sizes:

- **White or blue bottle** - 0.85L capacity, with 70mm opening. Great for small practices or for sending a couple of blood samples.
- **Orange bottle** - 2.5L capacity, with 80mm opening. Better for larger practices, with multiple samples and sample types.
- **Yellow bottle** - 3.0L capacity, with 110mm opening. Better for larger practices, for larger sample containers or herd sample lots.

The bottles should be labelled with your clinic name to ensure we can return them to you. Depending on the size of your clinic, it is advisable to have about six containers in circulation, so you have at least one available at the clinic at all times.

If you're unsure how to correctly package samples, we have a great guide available on our website. Print out a copy and hang it on the wall where you package your samples, so everyone can see it.

Just in case you didn't know, New Zealand law requires the shipper (you) to be responsible for the safety of specimens sent via courier. Packages must have three layers of containment and be prepared in such a way that they arrive in good condition and present no hazard to anyone during shipment. Shippers (you) can be fined up to $10,000 for breaches of these regulations. Diagnostic samples are considered a Category B infectious substance and are assigned to UN 3373.

We can't recommend these highly enough, as we know the samples inside them will be protected from harm and ready to test. There is nothing worse than opening up a package to find broken and leaking samples. So save yourself (and your clients) from heartache, and grab yourself a few of these today. They're always available in our online shop.

But wait, there's more . . . . did you know we're having a monthly giveaway for our consumable of the month? Simply tune in to our Facebook page, hit the LIKE button, and when you spot the post, answer the questions correctly and you could be in to win one of these for your clinic.

like us on facebook

Gribbles VETERINARY

Contact us

Contacting Gribbles Veterinary couldn't be easier.

EMAIL

auckland.vetlab@gribbles.co.nz
hamilton.vetlab@gribbles.co.nz
palmerston.vetlab@gribbles.co.nz
christchurch.vetlab@gribbles.co.nz
dunedin.vetlab@gribbles.co.nz

PHONE

0800 474 225

WEBSITE

www.gribblesvets.co.nz

FACEBOOK

www.facebook.com/GribblesNZ

Last but not least, please feel free to contact your local territory manager:

- Paul Fitzmaurice
  Category Manager, Production animals
  Paul.fitzmaurice@gribbles.co.nz - 027 604 8690
- Chrissy Bray
  Category Manager, Companion animals & Analytical
  Chrissy.bray@gribbles.co.nz - 027 569 1169
- Deborah Bass - Territory Manager
  Deborah.bass@gribbles.co.nz - 027 476 7714
- Eugene van Niekerk - Territory Manager
  Eugene.vanniekerk@gribbles.co.nz - 027 250 1647
- Vicki Hawkes - Territory Manager
  Vicki.hawkes@gribbles.co.nz - 027 476 7713