Paws claws and udder things

Gribbles VETERINARY

May 2022

New faces in town

Gribbles Veterinary is very pleased to welcome two new, but not new staff back into our network.

Firstly let us introduce Miriam Reddy. Miriam is the new Laboratory Manager for our Auckland laboratory. Miriam worked for Gribbles previously as a senior scientist in haematology, and after a few years in the UK she has returned to New Zealand ready to take on this new role.

Miriam has more than 15 years experience in the laboratory, is very practical, organised and results focussed. She is still finding her feet, but you will be able to find her in the laboratory with a smile on her face at any time.

Secondly we welcome back Ryan Johnson as a Territory Manager. Ryan has over 20 years experience in the pathology and veterinary sector. He was Laboratory Manager for our Auckland and Hamilton laboratories before moving to Bay of Plenty and into a Service Delivery Manager for Vetora. He is looking forward to meeting our clients in the Bay of Plenty, Waikato and Hawkes Bay regions.

Left: Miriam Reddy, Laboratory Manager, Auckland. Below: Ryan Johnson, Territory Manager.

NEW

Ovine Worm FEC programme

The feedback received so far regarding this programme has been outstanding!

"Wonderful - the only way forward to deal with anthelmintic resistance."

"A great initiative and combination of IP and resources to provide a much needed tool for NZ farmers."

The WormFEC Programme is provided by AgResearch in association with Beef & Lamb New Zealand (Sheep Improvement Limited – SIL). FEC data from Gribbles Veterinary is registered with SIL along with data collected for other traits (e.g. lamb growth, twinning rate etc.) to generate breeding values that can be applied to assist in stock management decision making.

This is a **great tool** to promote to your farming clients. Find out all you need to know on our website here, including test methods, reporting, sample requirements and FAQs. Alternatively give your local territory manager a call 0800 GRIBBLES.

What's inside?

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Cutaneous feline mycobacterial infections

ROB FAIRLEY

Cutaneous mycobacterial infections are common in cats in New Zealand and a variety of different mycobacteria may cause cutaneous lesions.

A study from the University of Melbourne several years ago, identified at least three different mycobacteria from lesions in cats from New Zealand. The most common was *Mycobacterium lepraemurium*, the classic cause of cat leprosy. This is mainly seen in young cats, presenting with one or a few nodules.

One case of *M. avium* was identified and several cases were due to a Mycobacterium labelled 'East-Coast' species at the time, but now proposed to have the name *Mycobacterium lepraefelis*. The latter had been identified from the east coast of Australia hence the name. This disease tends to occur in older cats and they often present with widespread skin lesions with massive numbers of organisms. The histological lesions in most cases caused by this mycobacterium are usually of a lepromatous nature and different from the tuberculoid type of lesions caused by *M. avium* or *M. lepraemurium* (occasional *M. lepraefelis* cases are tuberculoid).

New Zealand is different from Australia as we have had a major bovine tuberculosis problem, although this has now been reduced to a low level of infection in our cattle and deer herds.

Somehow, the infection in cattle was transmitted to brush-tailed possums, which became a highly significant source of infection. Brush-tailed possums often develop lesions in cutaneous lymph nodes that ulcerate and discharge large numbers of organisms to the exterior. As a result, cases of cutaneous bovine tuberculosis started to appear in cats in New Zealand in areas where tuberculosis was present in possums. The histological lesions of bovine tuberculosis in cats and cat leprosy are identical so when you have a case of cutaneous mycobacterial infection in a cat is it cat leprosy or is it bovine TB?

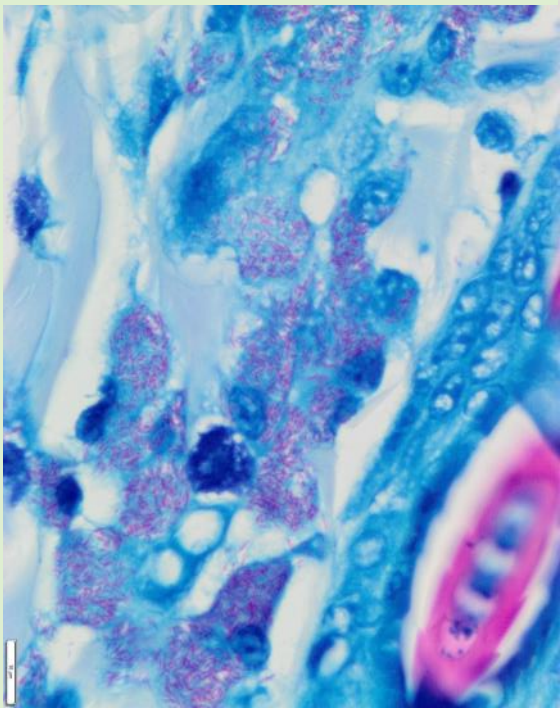
Bovine TB has been cleared from most of New Zealand and concern for the possibility of TB would mainly arise if a cat lives in or has come from an area where tuberculosis is present in possums.

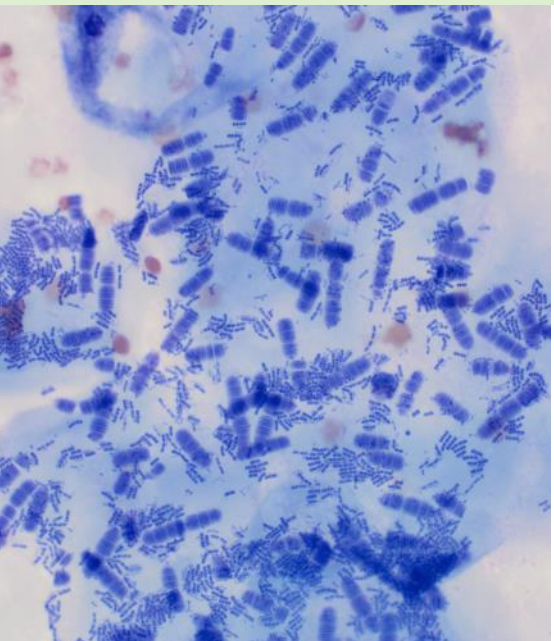
If you have any concerns about the possibility of a cutaneous mycobacterial infection in a cat being bovine tuberculosis, you can contact your local TBfree veterinarian, who can advise you of the status of possum TB in the area of concern. It is also possible to perform PCR to detect the cat leprosy organism *M. lepraemurium*. This test is done by a laboratory in Palmerston North. If this test is negative we would need to enquire further as to what testing is possible to exclude bovine TB.

TBfree's website shows a map of the disease control areas for bovine TB. There are also special testing areas outside of the movement control areas where it would be worth considering whether cases of mycobacterial infections in cats could possibly be bovine TB. This map will change with time.

In the South Island, the major areas of TB are the West Coast, parts of North Canterbury, Kaikoura, Southern Marlborough, and an eastern area of Central Otago NW of Dunedin. In the North Island the major areas of TB are Central Hawkes Bay heading in towards Taupo and the Rimutaka Forest Park east of Wellington harbour extending into the Akatarawa Forest/ lower Tararua Forest Park east of the Kapiti Coast (see the TBfree website map for details).

Figure 1 (below) - Histology showing feline mycobacteria (pink organisms - staining positive with Ziehl-Neelson stain). 100x.





Nothing like a party on the slide!

In a recent cytology smear from a cystic oral mass in a cat, we observed several clumps of large, polygonal, sky blue, keratinised squamous epithelial cells. There are a few scattered erythrocytes in the background for size comparison (see image left). An interesting finding were the mixed bacteria adherent to the squames, including numerous large, striped cigar-shaped structures, consistent with *Simonsiella* sp. (recently renamed *Conchiformibius* sp.). These are considered normal inhabitants of the oropharyngeal area. They multiply in stacks, forming giant structures that glide over the surface of squamous cells, rather like a giant bacterial slug. *Conchiformibius* sp. are commonly seen in cytology from the oropharyngeal area, but can also be seen in vaginal cytology, and from lesions which may have been licked or chewed.

All that glitters is not gold

CATHY HARVEY

Clinical history:

A six-month-old, female kitten was brought into a veterinary clinic with abdominal pain, lethargy and vomiting. In-clinic bloodwork and urinalysis were consistent with acute renal failure: BUN / urea >50 mmol/L (ref. 6.6 -12.6), creatinine 992 umol/L (ref. 67-150), phosphate >5.81 mmol/L (ref. 1.07-2.22) and USG 1.012.

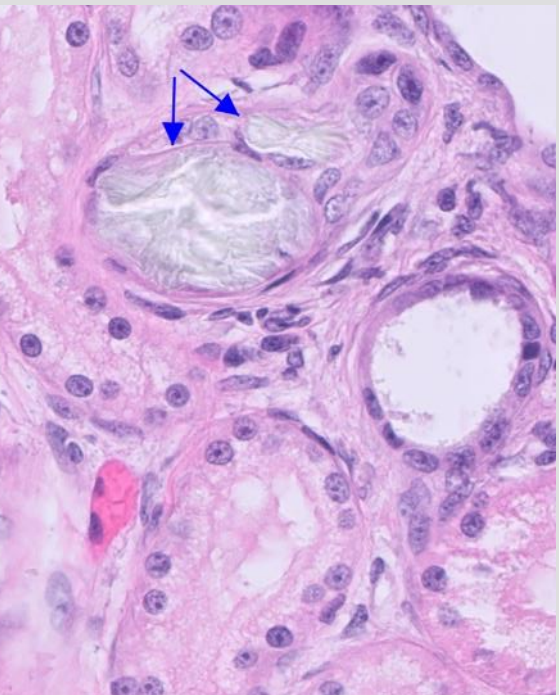
Treatment was not elected and the owner requested euthanasia, as within a week in 2020, four other cats in the household were found dead or presented with similar signs, and did not respond to treatment. The veterinarian offered necropsy and histopathology to confirm a cause of the renal disease in the kitten.

Laboratory findings:

On histopathology of both kidneys there was multifocal, severe, subacute tubular necrosis and regeneration with intraluminal retractile birefringent light yellow crystalline material arranged in sheaves (consistent with calcium oxalate) suggestive of ethylene glycol toxicity (Figure 1). Renal oxalosis can also be caused by plants, fungi, Vitamin B6 (pyridoxine) deficiency, methoxyflurane anaesthesia and primary hyperoxaluria, but it is usually from ethylene glycol toxicity.

Discussion:

Figure 1 - Histology showing kidney tubules with calcium oxalate crystals. H&E.



Ethylene glycol toxicity is not common in New Zealand, and has been seen in humans, dogs, cats, poultry and calves. Ethylene glycol is a colourless, odourless, palpable sweet tasting liquid used in the manufacture of multiple chemicals; however, most poisonings occur as a result of ingestion of automobile antifreeze solutions. These solutions usually include a colouring dye so that they are not mistaken for water or a soft drink, but the safety precaution does not deter children and animals.

The majority of ingested ethylene glycol is excreted unchanged in the urine. Ethylene glycol is degraded into glycoaldehyde by alcohol dehydrogenase, which is converted to glycolic acid and enters into the various pathways of metabolism, one of which produces oxalic acid. This combines with serum calcium and forms a soluble calcium oxalate complex which is filtered by the glomeruli. Calcium oxalate precipitates to form crystals in the tubules and causes acute tubular necrosis. The crystals are light yellow, arranged in rosettes, sheaves or prisms, and birefringent.

Ethylene glycol is more toxic in species like the cat, which excrete the most oxalate and unchanged ethylene glycol in the urine.

How to diagnose:

- **Ante mortem** – Clinical signs of acute renal failure, elevated BUN, creatinine and phosphate, low calcium, calcium oxalate crystalluria.
- **Glycolic acid** – Blood (heparin plasma or serum) tests are available at medical laboratories but are uncommonly used.
- **Post mortem** – Kidneys may be normal or swollen in appearance.
- **Histopathology** – Tubular necrosis with intraluminal calcium oxalate crystals.

Many thanks to Fiona Tritton, Blockhouse Bay Vet Centre for following this case up to get a diagnosis for the owner.

Reference:

Ethylene Glycol. Veterinary Clinical Toxicology 3rd Edn 2006. Parton, Bruere ad Chambers. *Vet Learn publication* No.249. p206-212.

Figure 2 (above) - Anti-freeze solution is generally coloured green or blue as a safety precaution to help prevent accidental ingestion.

Figure 3 (below) - Calcium oxalate monohydrate crystals in urine under light microscopy can demonstrate different morphological forms A) narrow rectangles with pointed ends; B) dumbbell-shaped crystals; Under polarized light (C), the crystals are positively birefringent - crystals are blue when parallel to the light and yellow when perpendicular to the light.

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 item this month are **dry sterile swabs**.

These new sterile dry swabs are perfect for molecular/PCR testing. You can use them for IBR, Moraxella, Pink eye, *Mycoplasma conjunctivae*, feline respiratory syndrome, strangles, *Mycoplasma bovis* etc.

They can be found under SWABS in our online shop.

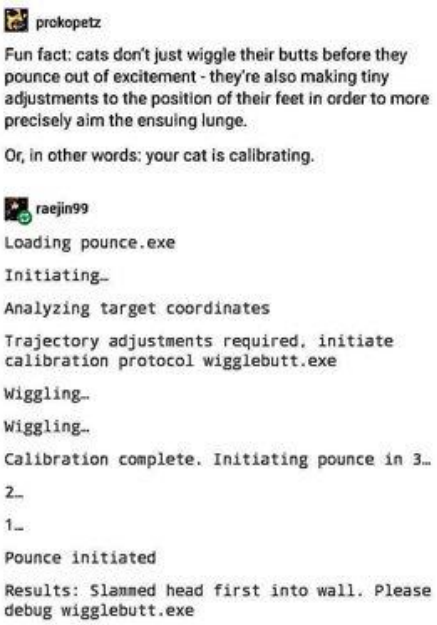
Please note: *They cannot be used for culture as contain NO transport media.*

For a laugh!

If you follow us on Facebook, you'll be familiar with our regular Friday slot. Feel free to message us on FB with any funnies you'd like us to post.

Our most popular funny from April demonstrates how important calibration is.

. . . and if you don't follow us, head over and hit the LIKE button now!



In brief:

> Our laboratories are still being affected by COVID-related home isolations, so some turn-around-times may be longer than usual.

> For the most update-to-date status on the NZ Couriers network, use the below link . . .

View NZ Couriers network status here

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Gribbles VETERINARY

Contact us

Contacting Gribbles Veterinary couldn't be easier.

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