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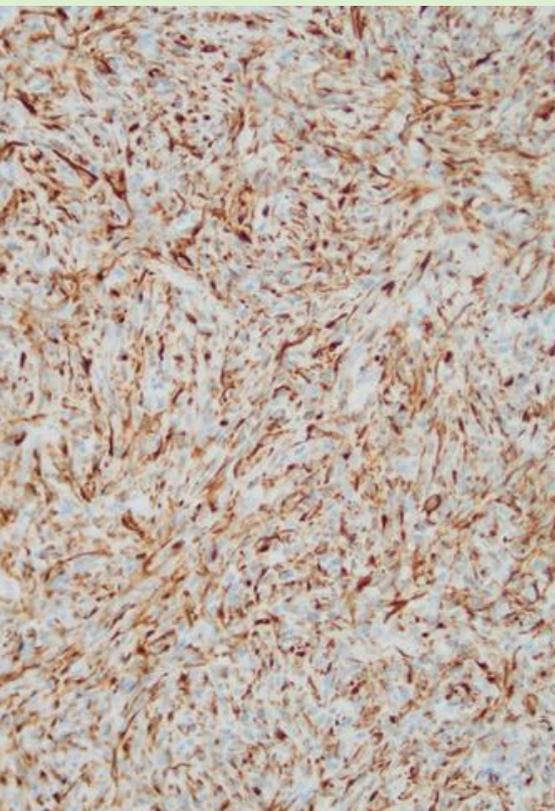


Figure 1. Immunohistochemistry for vimentin. Neoplastic cells show positive red-brown staining for vimentin, consistent with a sarcoma.

The in's and out's of immunohistochemistry

CRISTINA GANS

It's becoming more common in recent years for pathologists to issue a histology report which recommends the use of immunohistochemistry (IHC). I've frequently been asked: what is IHC and why do we need it?

Immunohistochemistry is a molecular technique which can be used for the diagnosis and prognosis of specific tumours and for the identification of infectious agents. It employs the use of target antibodies to identify a specific antigen or "marker" in the tissue in the question, and is performed on formalin-fixed tissue. Antibodies applied to a fixed tissue are bound to a specific enzyme, which can induce a colour reaction when they bind to the specific antigen. The tissue is then viewed microscopically to determine the presence (or absence) of a colour reaction, which can indicate whether a specific antigen is present in the tissues (see Figure 1).

Although many tumours may be diagnosed through histopathology, some tumours may be poorly differentiated or show conflicting histological features which are not typical of any tumour. Immunohistochemistry may provide a definitive diagnosis in certain tumours or when a definitive diagnosis cannot be achieved, IHC may help to narrow down the list of differential diagnoses. For

example, the markers cytokeratin and vimentin may be able to differentiate between a poorly differentiated carcinoma and sarcoma.

In some cases, IHC may be able to further characterise the nature of the tumour to provide information regarding prognosis. For example, B- and T-lymphocyte markers can be used to immunophenotype lymphomas, which can have prognostic and therapeutic implications.

At Gribbles Veterinary, the pathologist will be able to provide guidance to decide which markers may best for your submission. In most cases, IHC can be performed on tissues that have already been submitted, without the need for further patient sampling. Tissue blocks are sent to a referral laboratory, with a turnaround time of approximately 1 to 2 weeks.

IHC is currently only available for cats and dogs, and pricing can be found in our current price book. In some cases, some antibodies are not available in New Zealand, and we can submit samples to a referral laboratory in the U.S.A. (at an additional cost).

Reference:

Ramos-Vara, J. A. "Technical aspects of immunohistochemistry." *Veterinary Pathology*. 42: 405-426, 2005.

Lab updates



>> **Thank you** to everyone who've started using Parafilm® to seal histology samples before sending to the laboratory! We've had quite a reduction in leaking formalin samples, which has made a huge difference to our work flow. See right for more info.

>> Are you going to the **NZVA conference** this month? Be sure and visit our stand, chat with our team, and go in the draw to win a set of wireless, noise-cancelling headphones. We're looking forward to seeing you there!

>> **We still need blood samples** for our reference interval study. Check out the [participation criteria](#) and keep an eye out for animals that fit the bill. If the animals are suitable, testing is carried out free of charge.

Our favourite consumable item

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 in June is PARAFILM®.

Parafilm is a versatile, moisture-resistant, flexible plastic for a wide variety of clinical and industrial applications. Parafilm film has been used with confidence for years in scientific research and medical settings.

We use it everyday in the laboratory for sealing tubes of liquid samples e.g. urine or hazardous material e.g. formalin samples, when sending to other laboratories, covering containers and tubes that don't have lids. It is also great for sealing reagents as protects against moisture loss or for containers of dry

reagents to prevent moisture entering during long term storage.

There are even a few videos online that demonstrate how to use it. [Find one here.](#)

We sell it by the metre or by the box. We know you'll love it, but beware, a little goes a long way as it is extremely stretchy. Find Parafilm on our website [here.](#)

A user account is required to purchase items via our online shop.



Case of the month

BERNIE VAATSTRA

Clinical history:

A one-year-old, male, neutered Golden Retriever developed erupting, ulcerated, erythematous and crusting lesions over the dorsal surface of the nasal planum (Figures 1 and 2). The lesions developed quickly over approximately 48 hours, accompanied by vomiting and diarrhoea.

Clinical differentials included bacterial furunculosis, fungal or yeast infection, tick-bite hypersensitivity, facially oriented autoimmune disease, and eosinophilic furunculosis.

Skin biopsy samples were collected for histology and culture.

Laboratory testing:

Histological examination revealed

extensive epidermal ulceration and crusts of necrotic debris. Follicles were disrupted by large numbers of eosinophils and fewer macrophages, neutrophils and lymphoid cells. Similar inflammatory cells surrounded free hair shafts within the perifollicular dermis (Figure 3). A few Gram-positive cocci were observed in the surface crusts of Gram-stained sections. No fungal elements were detected on PAS sections.

Culture of the fresh tissue produced a heavy growth of *Staphylococcus intermedius* group. The bacteria were sensitive to amoxicillin-clavulanic acid, cephalothin, enrofloxacin, tetracycline, and trimethoprim-sulpha and resistant to penicillin (based on disk diffusion testing).

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Figures 1 & 2 (left): Eruptive, exudative, ulcerative, erythematous nodular lesions on the nasal planum (photo courtesy of Robert O'Connor, New Plymouth Veterinary Group).

Brain histology

ROB FAIRLEY

If you require brain histology performed, you should ideally send the whole brain, fixed in formalin, to the laboratory. If you need to take a fresh sample, you can remove a small portion no problem.

We receive submissions every now and then that consist of cerebral cortex only. If you are specifically checking for polio this type of sample should be adequate, but diseases like listeriosis will be missed.

The brain is not one uniform piece of tissue but highly variable. Several diseases are regional, affecting specific parts of the brain. Listeriosis, for example, affects the brainstem and especially the medulla. This is because the infection ascends in the cranial nerves and not via the vascular system (and those nerves



enter the brain at the caudal brainstem).

It is ideal to fix brains in a large container such as a bucket, for at least 24 hours before submitting to the laboratory. Once fixed, brains can be sent to the laboratory in a plastic bag without formalin (this is preferred by us). Formalin loses its strength over time, and once you have fixed several brains in the same solution you will find it does not fix tissue very well. Discard it safely* and use fresh formalin.

If you are unsure, speak to a pathologist at your local laboratory .

*We recommend using D-formalizer to neutralise the formalin for safe disposal. It can be found in our [online shop](#), or via our [consumable order form](#).

Our one-stop-shop!

Our fabulous online 'Lab Portal' is rapidly gaining popularity and we're upping its game yet again. So if bulk milk testing, eResults or facial eczema are part of your daily life, read on and let us make your day!

Since July 2020 our online BVD Bulk Milk Portal has helped reduce the administration load when carrying out bulk milk testing for your farmers. At the end of last year we added online Facial Eczema reporting to the same portal, so that submitting, saving, and tracking your facial eczema spore counts over the summer months was a breeze. Plus the portal also has a link to our very handy eResults!

Thanks to great feedback received from our regular users, we are now ready to roll out extra functionality to the bulk milk

section of the Lab Portal. We have made the following upgrades:

- >> Reports can now be sent to multiple vets in your practice.
- >> If vets work at several clinics, you can now select the correct clinic to add to your collection requests.
- >> Extra filters are now available to enable you to easily see of all your orders booked for the upcoming season, which farmers are about to be tested in the coming weeks, whether the sample has been received at the laboratory, and if testing is complete.

The link to our Lab Portal can be found on our website homepage, or if you have it saved as a favourite, please ensure the link takes you to the [new Lab Portal](#) address and remove your link to our old one (if it has UAT in the web address it's the old portal).

Haven't used these products before? Just head on over to the [portal](#) and register for a user account today.



New price books

If you missed out on the email regarding our new price book (effective 1 July 2021), you can find a link to your copy below.

In an effort to help save our planet by avoiding all the nasties associated with printing (not to mention the trees), we are only doing a VERY small print run of hard copies of the price book.

There are many advantages to the electronic version that make life so much easier for you in clinic:

- >> You can save a copy to every PC in your clinic or onto your practice network.
- >> Everyone in the clinic can access a copy at the same time.
- >> You can save it to your device and take it on the road.
- >> You can use the search function to find tests much faster than with a hard copy.
- >> It never gets lost and is always exactly where you left it.

So before you request a hard copy, please think about why you want one, and do you really need it? Help reduce our impact on the environment by sticking with the electronic version.

Grab your copy of our new [2021 price book here](#).



Case of the month

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Diagnosis: Eosinophilic furunculosis of the face with secondary staphylococcal infection.

Discussion:

Canine eosinophilic furunculosis is an uncommon dermatopathy with an alarmingly sudden onset. Young, large breed, inquisitive dogs are overrepresented, with lesions typically occurring on the face and occasionally on other extremities. While the exact

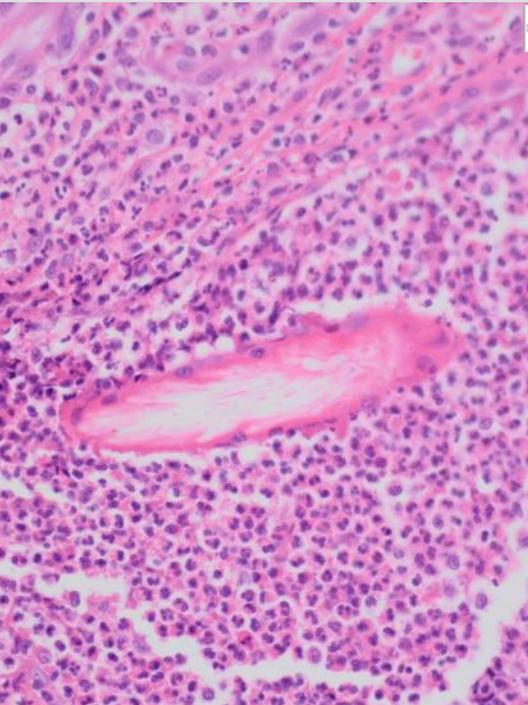
aetiology is unknown, the highly eosinophilic nature of the lesions and predilection for adventurous dogs, strongly suggests a reaction to arthropod or insect bites. In some cases, there is documented interaction with bees, wasps or ants. Lesions are characteristically eruptive, exudative, crusted and pruritic. Some dogs develop fever, malaise, anorexia, and vomiting or diarrhoea.

Fortunately, the prognosis is very good with the majority of dogs responding rapidly to systemic glucocorticoids.

In the present case, a short course of prednisone and Clavulox® resulted in complete resolution of the lesions apart from a small scab by the time of follow up (approximately 10 days after presentation). A satisfying outcome for all concerned!

Many thanks to Robert O'Connor of New Plymouth Veterinary Group for the case submission and excellent gross photographs.

Figure 3 (left): Histopathology of eosinophilic furunculosis in a Golden Retriever, showing a free hair shaft surrounding by myriad eosinophils. H&E 400x.



We're open!

A couple of our laboratories have reported that not all clients seem to be aware of our Saturday opening hours.

We are open every Saturday (unless we advise otherwise) but are always closed Sunday and public holidays. Our opening hours can be found on our website ([Contact Us](#) page) and even on Google, but we thought provide a reminder.

On Saturday's we are open:

- Auckland: 9.30am - 12.00pm
- Hamilton: 8.00am - 10.00am
- Palmerston: 8.00am - 11.00am
- Christchurch: 9.00am - 11.00am
- Dunedin: 9.00am - 12.00pm



Gribbles
VETERINARY



Contact us

Contacting Gribbles Veterinary couldn't be easier.

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

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