

# NATIONWIDE LABORATORIES WINTER NEWSLETTER

## THERE FOR YOU

### NEWS

Getting the Best Out of Your Surgical Biopsies – Canine Cutaneous Histiocytoma. This little article by S. Dawson gives some useful recommendations

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Research into the canine genome has made it possible to test and screen for inherited diseases occurring as a result of single-gene mutations with ease. Nationwide Laboratories have used developments in the availability of these tests to offer DNA profiling for cats and dogs, with the option to include a life plan for the patient alongside the results

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We got together with the Webinar Vet to offer you easily accessible CPD bundles at a reasonable price. The topics cover companion, exotic and farm animals as well as give the insight in parasitology and endocrinology. Our booklet is available to download here

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## Message from David Charvill

Dear friends,

As we have entered into 2021, the epidemiological situation still proves challenging, but hopefully with the vaccination program underway, there is light at the end of the tunnel. Meanwhile, we would like to thank you for the incredible job you are doing for the nation's animals and we will be there for you as always. Our laboratory scientists, pathologists and customer service teams are working hard to meet your requirements. We are partnering with BSAVA this year to bring you a range of exciting lectures at their virtual congress in March. Alongside these lectures, please look out for our fun activities to brighten up your day at the virtual congress. We are also proudly supporting the BVDSG spring meeting and have a number of exciting FREE webinars coming up on the Webinar Vet platform, so please look out for those. We are continuing to offer a range of workplace COVID-19 testing solutions in partnership with Forensic Testing Service. For more information please get in touch. During these difficult times, please stay connected and let us know if there is anything you need, and we will do our best to help. Keep well and stay safe.

David Charvill,  
Director of Laboratory Services



# Pathologist's Advice: Skin Biopsy Technique



There are two major techniques for taking skin biopsies. These are a punch biopsy technique and ellipse/excision technique. The latter is usually for lesions larger than skin punches and also if possible, for vesicular diseases because using a skin punch tends to break the thin-walled vesicles. This would include pemphigus foliaceus.

More generalised skin diseases are usually sampled using a biopsy punch. These come in different sizes – there are 2mm, 4mm, 6mm and 8mm in use in the veterinary field. 2mm are of extremely limited value because of the small size as they will only usually sample one adnexal unit (hair follicle) but can be of some value for inflammatory diseases although still limited due to the size.

4mm is obviously better but the majority that we see are 6mm which usually gives us at least four adnexal units and in most cases 6mm biopsies do not require a stitch. 8mm biopsies are even better but require a stitch. For some sites in the body such as nasal planum small biopsy punches may be the only option.

When biopsying haired skin, it is very important to take biopsies along the same plane as the hair growth. In order to achieve this, it is recommended to use an indelible marker and draw across the biopsy site in the direction of the hair growth. We can then trim the biopsy in half and cut sections from the flat trimmed surface. If the biopsies are taken along the line of the

hair follicle, we get sections of the hair follicles in longitudinal section. This allows us good examination of the follicle and is necessary to look at the stages of follicle growth. If the biopsies are not taken along the line of the follicle/hair shaft we have sections, then of a number of different follicles in partial transverse section (we call these doughnuts). It is then difficult to look at follicle growth because we only have part of it in any section.

There are advocates for transverse sectioning of follicles, which we do occasionally, but we can only do this if we have a sufficient number of biopsies also for longitudinal sections. Most biopsies and most illustrations that you will see in textbooks are of longitudinal sections through a follicle, not transverse.

As with all pathology the larger the sample the better and the more numerous the samples also the better. We can process up to four punch biopsies for the standard histology charge.

If you require culture of a biopsy, this must not be put into formalin, but for all other situations the biopsies can be preserved in formalin. Immunostaining can be undertaken for most of the common markers on formalinised paraffin embedded tissue which is the usual process for the majority of samples for diagnostic pathology. *By Trevor Whitbread BSc BVSc DipECVP MRCVS*



DATE FOR DIARY

10th February 2021, 12:30pm

## "Hypercalcaemia in Dogs and Cats: An Overview" FREE Webinar by Stacey A. Newton BVSc Cert EM (Int Med) PhD FRCPath MRCVS

Hypercalcaemia is a common finding in both dogs and cats. In the dog common presentation is PUPD and hypercalcaemia is a differential that must be excluded when PUPD is the presenting clinical sign. In the cat clinical signs are often vague with anorexia as the most common clinical sign. The webinar will focus on pathogenesis and discuss parathyroid dependent as well as parathyroid independent hypercalcaemia. The difference between total calcium and ionised calcium will be discussed and its use in diagnosis along with the parathyroid hormone as well as the use of parathyroid related hormone, vitamin D and calcitriol. Sample management and submission will also be covered. Treatment will be mentioned at the end but will not be extensively discussed.

**Learning Objectives:** What is defined as hypercalcaemia? Total calcium and ionised calcium: what is the difference? The difference between parathyroid related and parathyroid independent hypercalcaemia. Common clinical signs in the dog and cat. The use of ionised calcium and parathyroid hormone in diagnosis. Common causes of hypercalcaemia in the dog and cat. Treatment options.

[WATCH FREE ON DEMAND →](#)

All our webinars are available On Demand after the event



# Pathologist's Advice: Sampling Lesions for Osteosarcoma



Sampling of suspicious bone lesions can be a nerve-wracking procedure. Several methods can be employed. All require a general anaesthetic and sampling should be radiograph guided. In each case the centre of the lesion should be sampled as peripheral tissue is often simply reactive.

Samples for cytological evaluation need to be taken aggressively to achieve good exfoliation and a significant cell yield for interpretation. Even with good exfoliation an accurate diagnosis is sometimes not possible, but cytology preparations can be useful for ruling out other conditions, e.g., osteomyelitis.

As a result, histological samples, typically Jamshidi needle biopsies are commonly submitted. Owners should be warned that even these can be non-diagnostic. To increase the chance of getting a diagnosis, three good solid samples from the centre of the lesion should be submitted. The risk of pathological fracture using this technique is very low, but should a fracture develop, it is likely to happen regardless of any intervention used. Ideally, the larger the sample the more likely it is to be representative of the underlying lesion, although the risk of pathological fracture is increased. While this type of sample is less likely to be non-diagnostic, osteosarcomas can vary markedly in histological appearance in different regions

appearance in different regions of the same tumour and the subtype of osteosarcoma may not be truly represented in the sample submitted. For this reason, despite studies demonstrating an association between survival time and tumour grade, no histological grading system has gained widespread application. However, as a rule, central or medullary osteosarcomas tend to be high grade and those arising from bone surfaces are more likely to be low-grade.

After excisional surgery, the entire tumour should be assessed for definitive diagnosis before considering chemotherapy. This may be submitted within an entire limb or a reduced sample including the tumour portion of the bone only. The submission must be fixed in an adequate volume of formalin for a minimum of 24 hours (some larger samples will require longer). Once they are fixed, samples may then be wrapped in wet tissue/swabs and double wrapped in thick plastic bags to prevent leakage. On receipt at the laboratory a representative biopsy will be prepared from the soft tissue if possible, to provide an interim report but bone masses will require decalcification which takes up to 14 days depending on the sample size. Submission of a full clinical history and a radiographic image of the lesion are very useful in aiding interpretation of the histology.  
*By Sandra Dawson BSc BVMS FRCPath MRCVS*



DATE FOR  
DIARY

3d March 2021.  
12.30pm

## "Lunchtime Basic Bitesize Pathology. Small Animal Mammary Pathology" FREE Webinar by Sandra Dawson BSc BVMS FRCPath MRCVS

Mammary neoplasia is very common in dogs and cats. The diagnosis is confirmed by histopathology and is important for determining treatment and prognosis. In this session we will look at how to approach diagnosing mammary masses using cytology and histology and what to expect from your pathology report. We will speak about classification and the use of grading for mammary tumours in dogs and cats, as well as discussing some of the more recent helpful prognostic indicators. We will also touch upon mammary tumours in small mammals. So, grab a cuppa and join us this lunchtime!

**Learning Objectives:** Most common mammary tumours in dogs and cats. Is there any value in a fine needle aspirate? The best way to submit a biopsy. Classification and grading of mammary tumours in dogs and cats. Useful prognostic indicators. Mammary tumours in small mammal.

[REGISTER FREE →](#)







## Alison Lee Finds Out Why Bees Need Pathologists Too

Everyone knows that vets look after food-producing animals, like cows, sheep, chickens and pigs... but what about bees? Yes, bees are insects, but these little creatures are responsible for producing honey, a food that has been consumed by humans since Neolithic times. Bees are also essential for the pollination of crops such as almonds, avocados and blueberries. And just like other animals, bees are susceptible to diseases. Given the huge role bees play in maintaining a stable ecosystem, scientists and vets alike have recently turned their attention to researching diseases of bees and how they can be prevented and treated.

On the 12th January the CL Davis Foundation hosted an 8-hour series of live webinars on "Diseases of Honeybees" aimed at veterinary pathologists. The webinars were presented by pathologists from the Western College of Veterinary Medicine at the University of Saskatchewan, a centre for research on honeybee diseases and sustainable agriculture. I decided to tune in as I've always found bees fascinating and I'm also interested in learning more about sustainability and biodiversity.

The first webinar provided an overview of beekeeping. While I knew that hobby beekeepers may keep a few hives in a field or garden, I was completely unaware of the scale of commercial beekeeping in North America. This includes the practice of migratory beekeeping: moving hives from place to place to allow the pollination of crops. For example, 17 million beehives are annually transported to a 70km<sup>2</sup> area in California for just two weeks to pollinate almonds. Obviously intensive farming of any animal takes its toll on their health, and only 60% of the bees survive these long journeys.



The second lecture was on the topic of the microanatomy of honeybee: what you see when you look at a bee under the microscope. This was all new to me, despite spending the last 5 years studying and working in



DATE FOR  
DIARY

25th March  
2021. 15.30pm

### "Histiocytic diseases in dogs and cats: an overview of clinical presentation and diagnosis" FREE Webinar by Alison Lee BSc MVB MRCVS DipACVP

Histiocytic proliferative disorders are the source of some confusion, given their complex nomenclature and nonspecific clinical presentations. These diseases occur in both dogs and cats and derive from Langerhans cells, dendritic cells and macrophages. This presentation provides an overview of histiocytic diseases in dogs (histiocytoma, cutaneous Langerhans cell histiocytosis, cutaneous histiocytosis, systemic histiocytosis, histiocytic sarcoma and dendritic cell leukaemia) and in cats (progressive histiocytosis, histiocytic sarcoma and pulmonary Langerhans cell histiocytosis), including their cellular origins and clinical presentation. An overview of their diagnosis, including the use of cytology, histopathology and immunohistochemistry is also provided.

**Learning Objectives:** Recognise various histiocytic disorders that occur in dogs and cats, incl. their origins and clinical presentation. Know the key differences and similarities between these conditions. Gain understanding of the diagnostic approach to these diseases. Appreciate how immunohistochemistry may be used in the diagnosis of histiocytic diseases and the limitations of this technique in practice.

[MORE DETAILS →](#)



pathology. Some interesting insights included the fact that bees have two large compound eyes as well as two smaller “true eyes” (ocelli), and that the queen can store viable sperm in an organ called a “spermatheca”, allowing her to lay fertile eggs for up to four years after mating.

Various diseases of bees were then discussed, including American Foulbrood, caused by the bacteria *Paenibacillus larvae*. This is the most destructive bee pathogen, which causes disease in the brood (bee larvae) and has the power to wipe out the entire colony. Bacterial spores can persist in the environment for decades, resistant to antibiotics and disinfectants.

Other diseases covered included the parasitic mite *Varroa destructor*, the fungal disease Chalkbrood and various viral diseases. The mysterious condition known as “colony collapse disorder” was also discussed, in which the worker bees disappear from the colony, leaving behind the queen and brood. This phenomenon was first observed in 2006 in North America and the cause remains unknown despite extensive research, with theories including climate change, pesticides, infectious diseases and modern beekeeping practices.

The seminar finished off with an

overview of the controversial effects of pesticides in bees, focussing on the Neonicotinoids, a class of pesticides which are banned in the EU due to their potential effects on bee health. Emerging threats to bees were also covered, including the rather terrifying-sounding Asian giant hornets (aka “murder hornets!”) and African killer bees (which, despite the name, originated in Brazil).

This seminar provided a fascinating glimpse into an amazing species and a whole new side to veterinary medicine and pathology, as well as insights into emerging research in this area. The lectures are now available for free on the CL Davis Youtube channel. They will be for a limited time only so don't delay if you're interested in watching! *By Alison Lee BSc MVB MRCVS DipACVP*

*Danilo Wasques MV MSc attends the 1st virtual case report meeting hosted by the BSVP Scotland and North of England to present two of NWL cases and discuss cases with fellow pathologists.*

## THANK YOU For Your Feedback

"We have used NWL for many years now and are always impressed by their rapid turnaround, approachability and advice. The whole process from sample pickup to result reporting is very efficient and makes life so much easier for us in general practice."

*Andrew Price BVMS (HONS) MRCVS at Tweed House Veterinary Surgery, Leeds*

"I find the sample pickups reliable and easy to organise, all the staff are helpful on the phone."

*Dr Gillian Maxwell at Cestria Veterinary Centre, Chester Le Street*

"Twycross Zoo have used NWL for 2 years. We have found the service to be first class and they are always happy to help with any queries we may have and offer extra testing if we need. The sample collection is a great service with us being based so rural."

*Phillipa Dobbs, Veterinary Associate at Twycross Zoo, Leicestershire*

"Since working at Sandbeck I have been incredibly impressed with your lab - I'd go as far as to say it is the best service I have experienced in all my time in practice and I'd strongly recommend Thirsk Vets to use NWL!"

*Julian Norton, The Yorkshire Vet at Sandbeck Vets, Wetherby*





# Endogenous ACTH Test for Equine Cushing's syndrome

Detecting excessive endogenous plasma adrenocorticotrophic hormone (ACTH) derived from the abnormal pars intermedia is the most common diagnostic test for equine Cushing's syndrome. The most obvious clinical sign is the characteristic long curly coat and abnormal shedding patterns. Other common signs include weight issues, lethargy, laminitis, polyuria, polydipsia and hyperhidrosis. Single basal cortisol levels are often within or below the normal range. Insulin levels are frequently raised but insulin alone should not be used for diagnostics. Endogenous ACTH is considered to be a very sensitive test and can be done alone or in conjunction with either the regular overnight Dexamethasone test or the combined TRH/overnight Dexamethasone test. We require chilled whole EDTA or separated EDTA plasma samples for the endogenous ACTH. Freezing is NOT required.

For more information please contact NationWide Specialist Laboratories at [info@cslabs.co.uk](mailto:info@cslabs.co.uk) or **01223 493400**



## NEW EQA Scheme: now more automated and user friendly!

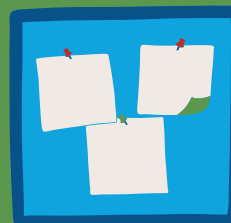
Module 9 of The Royal College of Veterinary Surgeons Practice Standards Scheme states: "In addition to internal quality control of automated laboratory tests, external quality assurance, by internal analysis of external samples via a QA scheme or by comparing internal samples to external labs, must be routinely undertaken and the results documented and acted on where necessary."

NationWide Laboratories operates an independent National EQA scheme for all practices and for a wide range of analytical equipment brands. This ensures that equipment and reagent problems that uniformly affect a single brand will be identified. Reports will be generated from the data submitted and provided to individual participants or group practice headquarters.

### Options

- Biochemistry EQA and "paired sample" comparison testing for Haematology analysers
- Biochemistry EQA only
- "Paired sample" comparison testing for Haematology analysers only

For further information and to register contact us on **01253 899215** or via email [info@nwlab.co.uk](mailto:info@nwlab.co.uk)



Notice Board

### Erythropoietin assay warning

If you are submitting a sample for erythropoietin assay please make sure you are submitting FROZEN serum with an ice pack. If the sample defrosts (even if it is cold) the result will be affected. Please contact our team at NationWide Specialist Laboratories on **01223 493400** for detailed advice re sample handling requirements and to arrange an ice pack to be sent out to you.

### How Clean Is Your Practice?

We offer you a microbiological screening programme to screen your facilities and equipment. Swabs are supplied with simple instructions and a postage paid envelope for return to our laboratory for testing. The package includes (but is not limited to) cultures for major groups of microorganisms: Staphylococci, Clostridia, Pseudomonadaceae, Bacilli, Yeasts and Fungi. Call **01253 899215** and quote **CLEAN** for our cleanliness package.

### Important Notice

As a consequence of Brexit, Special Import Certificate (SIC) is now required to order Immunotherapy Vaccines. Please contact our team for more details at [info@nwlab.co.uk](mailto:info@nwlab.co.uk) or call **01253 899215**