

NATIONWIDE LABORATORIES SUMMER NEWSLETTER

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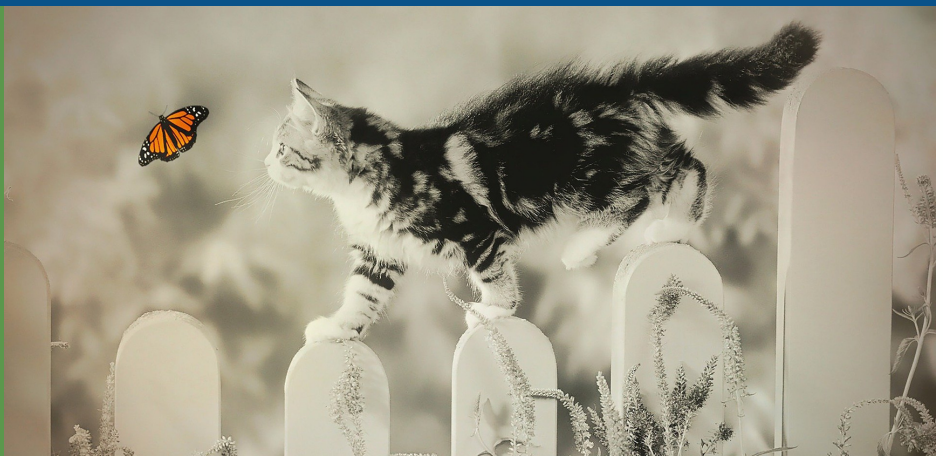
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Message from David Charvill

Dear friends,

Welcome to our summer newsletter. At NationWide Laboratories we believe good relationships are built on trust. Our experienced team of pathologists, laboratory scientists, couriers and customer service advisors are working with you and your samples. There are more than 1,200 standard tests in our portfolio, and our testing and reporting capabilities are truly flexible. We also operate an independent National EQA scheme for all practices and for a wide range of analytical equipment brands. Our hydrotherapy pool testing programme is designed to assist you in demonstrating to your clients that your hydrotherapy facility meets the guidelines for water safety and quality. We pioneer personalised health care involving DNA-profiling and Life Plans focussing on early detection of disease. Nationwide Specialist Laboratories are veterinary endocrine specialists with many years of experience in veterinary diagnostics, ELISA assay and radioimmunoassay development, optimisation and validation. We are the centre of educational excellence and we are offering the vet community a wide range of free and reasonably priced CPD. Our virtual learning hub at THE Vet Exhibition welcomes veterinary professionals from all over the world. The new "Voice of our Customers" feedback program allows us to stay in touch and to bring you more personalised services. Thank you very much for your custom!

David Charvill,
Director of Laboratory Services



SUMMARY OF CUTANEOUS SPINDLE CELL SQUAMOUS CELL CARCINOMA IN CATS: CLINICAL, HISTOLOGICAL AND IMMUNOHISTOCHEMICAL STUDY

Citation: Rodríguez Guisado, F., Suárez-Bonnet, A. and Ramírez, G.A., 2021. Cutaneous Spindle Cell Squamous Cell Carcinoma in Cats: Clinical, Histological, and Immunohistochemical Study. Veterinary Pathology, 58(3), pp.503-507.

The May 2021 issue of Veterinary Pathology includes an article examining cutaneous spindle cell squamous cell carcinoma (SCSCC) in cats. This is a subtype of squamous cell carcinoma (SCC), a common feline neoplasm which small animal practitioners will be familiar with. SCCs are one of the most common tumours of feline skin, along with basal cell tumour, mast cell tumour, and fibrosarcoma. Exposure to UV light, lack of pigmentation, sparse hair cover, and exposure to papillomaviruses are thought to be causative factors of these neoplasms. They are typically locally invasive, but metastasis to lymph nodes and distant organs is rare.

Unlike conventional squamous cell carcinoma (CSCC), in which cells are polygonal and typically epithelial in appearance, SCSCC contains predominantly spindloid to polygonal cells (similar histologically to sarcomas), arranged in sheets and bundles. However, occasional foci of squamous differentiation indicate that these are in fact SCCs. This may present a diagnostic challenge to pathologists, especially in cases where only very small biopsies are submitted.

In humans, SCSCCs is reportedly more aggressive than CSCC, but it is uncertain if this is the case in felids. This study sought to ascertain if the clinical course of SCSCCs is more aggressive than CSCC, and to examine prognostic features and the

immunohistochemical profile of these neoplasms.

The study was carried out based on biopsies submitted to Las Palmas Veterinary School in Gran Canaria, Spain. Eighteen cases of SCSCC were included in the study (which represented 2.3% of SCC cases between 2014-2019). Squamous cell carcinomas of all subtypes constituted 49% of skin tumours in cats diagnosed at the Las Palmas Veterinary School over this period. All cats were treated solely with excisional biopsy.

Mitotic count was found to be prognostically significant. Tumours with a mitotic count of greater than or equal to 14 mitotic figures per 10 high power fields (HPF) had a worse clinical outcome than cats with a mitotic rate of less than 14/10 HPF. Invasion of vessels and the presence of neoplasia at the surgical margin was also associated with a worse outcome. Additionally, cats with neoplasms in the periorbital region suffered a poorer outcome than cats with tumours of the pinna or muzzle. In 14/18 cats, there were changes consistent with actinic keratosis in the adjacent skin, suggesting that UV light likely played a role in tumour development.

During the follow up period of 7-25 months, no metastases or recurrence was detected in 14/18 cats (78%). In three cats, tumours

progressed or recurred (leading to euthanasia in two cases) and one animal developed regional lymph node metastases.

Immunostaining was carried out for a variety of skin tumour markers. Immunopositivity was detected for cytokeratin (CK) 5/6 and pancytokeratin (AE1/AE3) in 17/18 and 15/18 cats with SCSCC respectively, confirming an epithelial origin. This was similar to the expression profile of CSCCs. Nuclear positivity for P63 was detected in all cases of SCSCC and CSCC. P63 is a member of the p53 protein family (which becomes dysregulated in response to UV light) and is used as an epithelial/myoepithelial markers in human and feline carcinomas. Positive staining for vimentin, S-100 or smooth muscle actin was not detected, which is different to the situation in human SCSCCs, in which occasional expression of these markers is detected.

Epithelial-mesenchymal transition is a feature of poorly differentiated carcinomas, in which epithelial cells lose epithelial characteristics and become more mesenchymal in phenotype, conferring a greater ability for tissue invasion and distant metastasis.

... to be continued p.3



NWL proudly supports BSVP summer meeting

Some cases are complex and difficult to pull together. They require multiple tests and expert knowledge from different disciplines. That's why NationWide Laboratories is proud to be sponsoring the BSVP Virtual Summer Conference – from the Clinical to the Scope and Back Again. Our veterinary and biomedical science teams have a wealth of knowledge when it comes to helping our clients to interpret complex cases.

When a 9-year-old male border terrier presented with a history of vomiting and inappetence our diagnostic screen showed evidence of a significant hepatopathy. Ultrasound scan revealed an enlarged gall bladder and our histopathologist was able to confirm the practitioner's clinical suspicions of a gall bladder mucocele exhibiting lymphoplasmacytic cholecystitis and cystic mucinous hyperplasia.



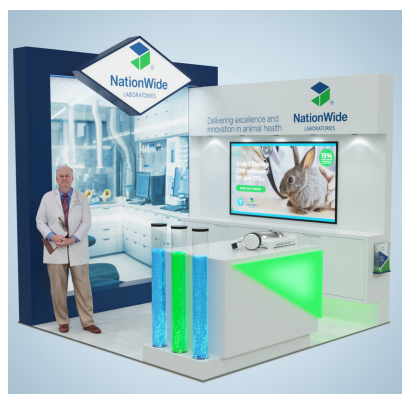
Our team was able to follow the case of a 5-year-old male Rottweiler when he presented with a troublesome mass on the right side of the thorax. A fine needle aspirate showed the tell-tale signs of a mast cell tumour which was found to be an infiltrative subcutaneous mast cell tumour on histological examination. Immunohistochemistry using prognostic markers Ki67 and C-Kit showed that this tumour was more aggressive than most subcutaneous mast cell tumours, and so allowed our unlucky Rottweiler's owners the option of following up with additional therapy.



This is how our team works together to provide the best outcome for our clients and their patients.

*By Sandra Dawson
BSc BVMS FRCPath MRCVS*

Welcome to our NEW FREE interactive virtual learning hub at THE Vet Exhibition



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**Topic of the month:
Canine and feline adrenal diseases**

Webinar of the month:

**HYPERADRENOCORTICISM
DIAGNOSIS AND TREATMENT
MONITORING** by Peter Graham

Podcast of the month:

**CANINE AND FELINE
HYPOADRENOCORTICISM**

Literature Library

Labfacts and much more!

**Topic changes on the 20th of every
month for 12 months!**

Summary of Cutaneous Spindle Cell Squamous Cell Carcinoma in Cats: Clinical, Histological and Immunohistochemical Study (continued)

The spindloid (mesenchymal) shape of the cells in SCSCC may not, however, represent "true" epithelial-mesenchymal transition, given the immunostaining results of this study (in which epithelial markers were expressed in most neoplasms, and vimentin staining was not detected).

In conclusion, the authors state that SCSCC is an uncommon variant of SCC affecting the facial skin and which likely arises due to sunlight exposure. The clinical outcome was affected by mitotic count, tumour location, and invasion of surgical margins. While, in humans SCSCC is associated with a worse prognosis than CSCC, this does not appear to be the case in cats, based on this particular study.

*Summary compiled by Dr. Alison Lee
MVB BSc MRCVS DipACVP DVMS*

NWL is proud to support RWAf



As part of Rabbit Welfare and Ethics Day, NationWide Laboratories made a donation to Rabbit Welfare Association & Fund.



Recent spike in severe feline pancytopenia cases

The Royal Veterinary College (RVC) is appealing to vets in general practice and animal referral hospitals across the UK to take part in a new survey to investigate a mysterious spike in severe feline pancytopenia cases. This condition can often prove to be fatal.

At NationWide Laboratories we have recently reported few haemograms with severe pancytopenia in cats.

These cats present severely unwell, have spontaneous bleeding and require often multiple transfusion for stabilisation prior to any investigation being possible. They are found to be severely pancytopenic on bloods, with concern over bone marrow hypoplasia or aplasia. Some cats have presented at the same time from the same household. Investigations have not revealed any identifiable underlying cause so far.

RVC had a recent case of a severely pancytopenic cat with undetectable serum concentration of cobalamin. Therefore they suggested it might be worth assessing cobalamin and supplementing it (if anything, it is unlikely to have any side effects).

If you are a vet that have seen similar cases recently, please complete RVC survey as they are keen to identify any common denominator (e.g. toxic, infectious causes etc.). They will share their findings as soon as is practically possible so that the vet community can instigate positive interventions.

[COMPLETE THE SURVEY →](#)

NWL sponsors a CPD webinar "What are you itching to know about feline atopic skin syndrome?" - 23rd June

This webinar will aim to guide participants through the various cutaneous reaction patterns commonly seen in cats. Feline atopic skin syndrome (FASS) is likely similar to the one in dogs with genetic and environmental factor playing the major role. The hunting nature or the outside lifestyle of many cats makes controlling FASS challenging for both the owner and the veterinary surgeon. The management of FASS involves the use of anti-inflammatory/immunomodulatory drugs, allergen avoidance if feasible and allergen-specific immunotherapy. **Presented by Dr Rosario Cerundolo DVM, Cert. VD, Dipl. ECVD, FRCVS.**

[CLICK HERE FOR FREE REGISTRATION](#)

NWL signs up to support equine surveillance



NationWide Laboratories (NWL) has extended their commitment to animal health by joining EVSNET and providing equine laboratory data. This data will be used by researchers to understand the conditions affecting the UK equine population.

The laboratory was originally established in 1983 and since then has grown into a multi-disciplinary laboratory with a commitment to quality of service through proficiency testing and rigorous quality assessment and assurance. NWL offers testing for small animals, equine and farm animals across a range of specialities.

On joining EVSNET, David Charvill - Director of Laboratory Services said: "We believe it is important to take part in this project and share laboratory data to help researchers understand the health problems affecting the equine population in the UK and provide insight into how conditions may be best treated."

Transmissible venereal tumour in dogs

Transmissible venereal tumour (TVT) has been reported with increased frequency in dogs imported from Eastern Europe. TVTs are malignant (cancerous) tumours. Different from other cancers, TVTs are transferrable between dogs. It is sexually transmitted through direct skin-to-skin contact with the tumour that results in cancer cells being transplanted from dog to dog. There is laboratory evidence that the amount of cases reported in the UK in 2021 has significantly grown compared to 2020.



If you missed this lecture during BSAVA Online Congress 2021, you can now find it in BSAVA library

HISTIOCYTIC DISEASES IN DOGS AND CATS: AN OVERVIEW OF CLINICAL PRESENTATION AND DIAGNOSIS

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. This session is aimed at veterinary surgeons, veterinary students and veterinarians with an interest in pathology.

Learning Objectives:

- Recognise the various histiocytic disorders that occur in dogs and cats, including their origins and clinical presentation;
- Know the key differences and similarities between these conditions;
- Gain an 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.



About the author

Alison studied veterinary medicine in University College Dublin (UCD). She also undertook an intercalated degree in veterinary pathology at the Royal Veterinary College. After a year in small animal practice she completed her anatomic pathology residency in UCD and became a diplomate of the American College of Veterinary Pathology. Her interests include oncology and exotic animals.

NEW EQA Scheme: now more automated and user friendly!

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
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- "Paired sample" comparison testing for Haematology analysers only

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WHAT'S IN THE PRESS?

Atopic dermatitis in dogs, cats and horses

NationWide Laboratories looks at the clinical signs and diagnosis of atopic dermatitis in dogs, cats and horses.

[READ MORE →](#)

Soft tissue sarcoma: case study

An eight-year-old male Labrador presented with ongoing history of lameness. Clinical examination revealed marked swelling of the right elbow. A mass was noted close to the elbow joint and was suspected to affect joint mobility.

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