

Angela Frimberger VMD,
Diplomate ACVIM (Onc)

Phone (02) 6585 3192
www.vetoncologyconsults.com

Antony Moore MVSc,
Diplomate ACVIM (Onc)

Fax (02) 6586 1210
voc@vetoncologyconsults.com



VETERINARY ONCOLOGY CONSULTANTS

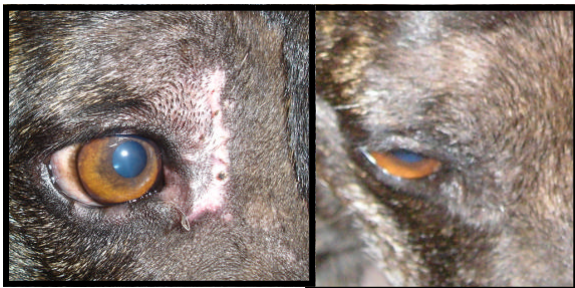
helping veterinarians treat pets with cancer

You and your pathologist

The veterinary pathologist plays many roles in the management of a patient with cancer. Veterinary anatomic pathologists should provide not only a histologic diagnosis and classification of the cancer but also a grade and stage of the disease whenever possible. Pathologists examine intact tissue and associated architecture to determine the underlying pathologic process. In addition, the pathologist directs the tissue for specialized testing using advanced techniques to enhance diagnostic accuracy. These techniques may include special stains, immunohistochemistry, electron microscopy, flow cytometry, and polymerase chain reaction (PCR).

Developing a comfortable relationship with the pathologist and allied staff is essential, since initiating a dialogue enhances the diagnosis in many cases. In fact, the dialogue must begin at the time of sample submission to ensure that the pathologist has a complete,

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Mycosis fungoides in a 4-year old F Staffie, before (left) and on VELCAP-MF (right).

Oncotip

Epitheliotropic T-cell lymphoma, or mycosis fungoides, occurs most commonly in the skin of dogs, but may also occur on the oral mucosa. It is an uncommon condition in dogs, and rare in cats.

Mycosis fungoides is considered to be very difficult to control, particularly when it has reached the "tumour" stage; however, recent evidence shows that responses may be improved when alkylating agents are used in a combination protocol to a greater extent than usually recommended for dogs with generalized T-cell lymphoma.

We have been very pleased with responses to our VELCAP-MF protocol, which incorporates these drugs.

Newsletter

July 2006

It's been delightful over the past months to see so many new people using our consulting service, as well as continuing to work with our "old friends".

Our Minicourse in Oncology for Veterinary Practitioners, held here in Port Macquarie in March, was an enjoyable and educational weekend for all who attended.

In the coming months we'll be attending and lecturing at the American Veterinary Medical Association Conference (July) and the World Small Animal Veterinary Association Conference (October), and we expect to come back with interesting items to share with you.

In this newsletter you'll find an article about working with your pathologist, one of the most important people in your successful treatment of cancer; and a literature abstract about melanoma in dogs.

As always, don't hesitate to contact us with feedback to improve our service to you, as well as for consultation on your cases.

Enjoy! Best regards, *Tony and Angela*

Veterinary Oncology Consultants' mission is to assist other veterinarians in providing the highest possible quality of life for pets with cancer and their human families, by making evidence- and compassion-based recommendations for their care and providing educational materials.

Request Forms are available in downloadable and interactive forms on our website, www.vetoncologyconsults.com—or we're always happy to email or fax you one!

Chemotherapy Safety

Chemotherapy needs to be individualized to a certain extent for every patient and take into account various disease-specific and patient-specific factors—this is where our service can help. This means, however, that the doses and scheduling on a protocol that we provide for one patient may not be appropriate for other patients. It's strongly recommended to consult with us before starting a new patient on a chemotherapy protocol.

We also have available information sheets on individual drugs that can be added on with a case consult and chemotherapy protocol (checkboxes on the front page of the request form). If you are planning to use a drug that you're not familiar with, these are a very helpful primer for practical veterinary use. Of course, you should always have the drug insert and MSDS for every drug you use - these are obtained from the manufacturer. We can also provide a "Chemotherapy in Private Practice" leaflet on request at no charge with a consultation.

New Literature

This article is interesting because contrary to popular belief, the authors showed that some melanomas, regardless of the site where they occur, may have less aggressive behaviour, and that behaviour may be able to be predicted on histopathology.

Most importantly, the grading system they propose appears to be relatively easy to apply to biopsies, according to the pathologists we have talked to. Working with your pathologist by giving them all the data you can about the patient will result in a mutually beneficial relationship.

The histologic and epidemiologic bases for prognostic considerations in canine melanocytic neoplasia. Spangler WL and Kass PH. *Vet. Pathol.* 2006; 43:136-139

A melanoma in a dog may have very different behaviour depending on the site of occurrence, as well as histopathology variables. This study reviewed various potential prognostic factors and found that while intuitively obvious factors like presence of metastases and increasing size of the tumour negatively affected survival, other variables including mitotic index (mitoses per

10 high power fields), nuclear atypia, presence of deep inflammation, and intralesional necrosis were also associated with poor survival regardless of the site of occurrence. The authors found that contrary to what has been believed, there are a subset of dogs with oral mucosal melanoma that have a reasonable prognosis. In addition, while they confirmed that cutaneous

melanomas are *mostly* less aggressive, their scoring system also identified those that displayed more malignant behaviour. Melanoma of the digits or the lips displayed intermediate behaviour.

These results have obvious ramifications for the way we treat dogs with melanoma, particularly whether we recommend adjunctive therapies.

Pathology, cont'd...

detailed, written description of the lesion and a history of the condition. For example, when a pathologist reviews a biologically high-grade yet histologically low-grade soft tissue sarcoma, he or she may be tempted to describe the lesion as a histopathologically benign condition. However, if the veterinarian informs him that the tumour comes from the maxilla of a golden retriever with a lesion that has been growing for months, has been unsuccessfully resected twice, and is causing some alteration in the radiographic appearance of the skull, the pathologist is then empowered with information that allows him or her to consider more appropriate differentials. The dialogue should continue if the histopathologic description does not fit the clinical picture or the biological behavior of the disease. In that case, it would be to the patient's best interest to enter into a discussion with the pathologist to obtain additional evaluations and even a second opinion. Pathologists, like all other specialists, are often comfortable obtaining second opinions to ensure that the patient receives the best treatment possible. Finally, giving the pathologist feedback on the outcome of the case is very important to allow him or her to determine the value and accuracy of the work and diagnoses.

TUMOUR GRADING

As well as determining the type of neoplasm, *grading* of tumours is perhaps one of the most important tasks of a veterinary pathologist. The biologic behaviours of some tumours are not always pre-

dicted by the histologic grade, although the list of tumours where this is applicable is growing. Grading results from a subjective evaluation of the histologic characteristics of the cancer and is often based on the degree of differentiation, mitotic index, degree of cellular or nuclear pleomorphism, amount of necrosis, invasiveness, stromal reaction, and lymphoid response. These characteristics can be used to grade the tumour as low grade (well-differentiated, grade 1), intermediate grade (moderately differentiated, grade 2), or high grade (poorly differentiated, grade 3). The subjective nature of grading can result in variability between pathologists, further defining why it is so important to identify highly skilled pathologists who have extensive experience and confidence in cancer pathology.

There are many specific examples in which the grade of canine tumours is prognostic. These include mast cell tumours, lymphoma, dermal and ocular melanoma, mammary gland carcinoma, synovial cell sarcoma, multilobular osteochondrosarcoma, haemangiosarcoma, transitional cell carcinoma, squamous cell carcinoma, pulmonary carcinoma, osteosarcoma, and soft tissue sarcoma.

Stage is a clinical characteristic reflecting extent of disease. The pathologist may assist in staging the tumour by determining its size, the depth of invasion, and metastasis to regional lymph nodes or distant sites. Staging is essential

to direct therapy and to help provide an accurate prognosis.

EVALUATION OF MARGINS

One of the key tasks of the pathologist is to assess the success of surgical removal of a tumour ("clean" margins). Clean margins are essential regardless whether the tumour is benign or malignant. Margins must be checked for completeness in all directions, including width and depth. While it is not possible to check all margins, the pathologist should evaluate a tumour of concern in many different areas to enhance confidence that the mass was removed completely. The more anaplastic the tumour, the less defined the margins become, requiring wider margins. As a general rule, 1-mm margins are considered incomplete whereas 1- to 3-cm margins are generally considered wide and "clean." The margins in between have different connotations depending on the tumour type to be considered. For example, a well-differentiated mammary adenocarcinoma is unlikely to regrow with a half-centimeter margin, whereas mast cell tumours and soft tissue sarcomas are at greater risk for recurrence because these tumours extend with "fingers" into the surrounding tissue. To enhance the accuracy of determining the margins, different colored inks or sutures should be placed in the tissue edges or regions of interest to guide the pathologist.