

Oncology Corner Le coin de l'oncologie

Cancer treatment therapies

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Cancer is a common disease condition in dogs and cats, and a veterinarian in companion animal practice will be involved in the diagnosis and treatment of cancer in many of their patients. Cancer encompasses a wide range of specific diagnoses, some of which are highly curable. Even with incurable forms of cancer, remissions can often be obtained during which a good quality of life can be enjoyed by the patient.

Cancer treatment often involves an integration of care between a family veterinarian and cancer specialists, and a balance of specific anti-cancer treatments by a specialist with supportive care and monitoring by a family veterinarian. Treatment options for animals with cancer in Canada are rapidly expanding, and the number of veterinary hospitals with a team of cancer specialists is growing. Cancer treatment frequently involves a combination of therapies, including surgery, radiation therapy, chemotherapy, and ancillary and complementary therapies.

The histological type of cancer and stage of disease are critical determinants of recommended therapy and prognosis. Staging, or determining the anatomical extent of disease, aids the clinician in planning treatment, often gives information on prognosis, and facilitates the exchange of information between cancer treatment centers, thus contributing to the expanding knowledge of optimal cancer treatment. The World Health Organization has created the TNM system for domestic animals to stage various types of cancer. "T" describes the extent of the primary tumor, "N" describes the condition of the draining lymph nodes, and "M" refers to the presence or absence of distant metastasis.

While many aspects of diagnosis, staging, and treatment of cancer may be performed in general practice, consultation with an oncology specialist is recommended prior to treatment to ensure an optimal plan is formulated for each patient. The choice of treatment combinations, and timing of these treatments, is best planned before initiating any therapy. Lack of planning prior to treatment can negatively impact the outcome of treatment, and decrease the probability of cure or long-term

control. Ideally, treatment planning involves a team of cancer specialists, including a medical oncologist, surgical oncologist, and radiation oncologist, working together with pathologists, medical imaging specialists, and other specialists. This article provides a brief overview of the role of oncology specialists in the treatment of cancer.

Surgical oncology

A surgical oncologist has completed a post-residency subspecialist training program in surgical oncology. Surgical excision of a tumor, if possible, generally provides the best chance of a cure, and is the treatment of choice for many tumor types. Surgical oncologists have current training in cancer biology and in the role of surgery in combination with other therapies, particularly radiation therapy and chemotherapy. The training and experience of a surgical oncologist can result in a significantly better outcome for patients. Although surgical oncology is not yet an officially recognized specialty, members of the Veterinary Society of Surgical Oncologists (VSSO) are diplomats of the American College of Veterinary Surgeons who have gone on to complete a post-residency year in surgical oncology training (www.vssso.org)

Medical oncology

A medical oncologist has completed a residency in internal medicine with a specialization in cancer biology and treatment, and has qualified as a diplomat of the American College of Veterinary Internal Medicine (Oncology) (www.acvim.org). Many cancer patients are referred first to a medical oncologist, who performs the initial diagnostics and staging and then recommends a treatment plan, in consultation with surgical and radiation oncologists. Because of their specialized training, medical oncologists are able to both recommend the optimum chemotherapy treatment plan based on the most current research and to customize the protocol to individual patients if necessary. There are many indications for the use of chemotherapy in cancer treatment (Figure 1). These include pre-existing evidence or a high risk of metastasis, a systemic disease such as lymphoma, sensitization of tumors to radiation therapy, and palliation. The aim of chemotherapy in animals is different than that in humans: a primary goal is to achieve a good quality of life, and most animals show few to no side effects from treatment.

Radiation oncology

Radiation oncologists are diplomats of the American College of Veterinary Radiology (Radiation Oncology) (www.acvr.org/veterinary_professionals). Radiation therapy is

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Figure 1. A dog with osteosarcoma receiving chemotherapy at the Western College of Veterinary Medicine under the guidance of a medical oncologist.



Figure 2. A dog with a thyroid carcinoma undergoing radiation treatment on the cobalt therapy unit at the Western College of Veterinary Medicine.

indicated when surgery alone cannot achieve removal of all of the cancer cells (Figure 2). Radiation therapy may be used as a single therapy for highly radiosensitive tumors, or for tumors that are not resectable due to their extent or location, or in combination therapy to treat residual disease left behind after surgery. Radiation is also used with palliative intent in patients with incurable tumors causing pain or discomfort. If radiation is elected as a treatment option, the radiation oncologist will design the treatment plan according to the tumor type and surrounding anatomical structures. They will also be able to decide, in consultation with a surgeon, whether pre- or post-radiation surgery would be of the most benefit to the patient.

In conclusion, veterinary oncology in Canada is a rapidly expanding area with effective treatment options becoming more readily available. A family veterinarian plays a critical role in guiding their clients to choose the best option for their animal, and in providing ongoing care to the cancer patient for the remainder of their life. An oncologist will work together with a family veterinarian to ensure that the optimal treatment plan is recommended for each dog or cat diagnosed with cancer. Being under the care of a specialist with advanced knowledge of current treatments, as well as a wide experience in caring for cancer patients, will lead to the patient and client being offered the best possible chance for a successful outcome.