ONCOLOGY
General Information For Owners

We welcome you to the oncology service at Florida Veterinary Referral Center. Dr. Sarah Kraiza heads your pets’ oncology team! She will work together with the other departments (surgery, internal medicine and critical care) to provide the best treatment and care for your pet. It is our goal to provide your pet with the most effective cancer treatment options and to maintain the best quality of life possible. This handout will provide you with general information about the oncology service, oncologic surgery, chemotherapy, radiation therapy, and caring for a patient undergoing treatment for cancer.

What does a diagnosis of cancer mean for my pet?

There are many different types of cancer that can occur in both dogs and cats. It is very difficult to tell if a lump or abnormal growth is cancer based on appearance alone. Two very important questions to answer when an animal is found to have an abnormal growth are:

1. **What type of tumor is it?**
   The actual type of tumor (for example: lymphoma, mast cell tumor, osteosarcoma) is very important in helping us to determine what the best treatment option will be. Some tumor types do not spread throughout the body (metastasize), and can be treated with surgery alone. Other tumor types are more aggressive, meaning that they will spread to other organs, such as the lymph nodes that drain the tumor, lungs and other organs in the body. The best way to know what type of tumor your pet has is by performing a biopsy. The biopsy will tell us if the tumor is malignant (likely to spread to other parts of the body) or benign (grows only in one area of the body), and this will also help us to know your pet’s long term outlook. Some cancers may be able to be identified based on a fine needle aspirate alone and in some instances a biopsy may not be required.

2. **If it is malignant, how far has it spread?**
   The answer to this second question is also very important in helping us decide the best treatment options for your pet, and it may also help us estimate the long-term prognosis. We will evaluate your pet for spread of the cancer by performing routine, non-invasive procedures such as bloodwork, x-rays, ultrasound and lymph node aspirates. Some tumor types will spread to the bone marrow; in these situations a bone marrow aspirate will be recommended.

What treatment options are available for pets with cancer?

There are 3 basic treatment options for pets with cancer. These treatments may be used alone, or in combination, depending on the type of cancer diagnosed.

1. **Surgery**
   Surgery is used as the single method of treatment if the tumor is benign, or if the tumor is known to be very slow to metastasize. Surgery is combined with chemotherapy when the tumor is known to metastasize very quickly. Even if a search for evidence of spread has not shown any abnormalities, chemotherapy may be recommended if the tumor is known to be very aggressive. Surgery is combined with radiation therapy if complete removal of the tumor is not possible with surgery alone. In this situation, surgery is performed first and the surgery site is allowed to heal for approximately 10-14 days before instituting radiation therapy.

2. **Chemotherapy**
   Chemotherapy is very commonly used in dogs and cats with cancer. Chemotherapy drugs are used when the tumor has spread beyond the original site of growth, or when the tumor affects more than one area of the body. It may also be used for a tumor that we know historically has a very high chance of metastasizing. There are 2 equally important goals to keep in mind when using chemotherapy in the small animal cancer patient:
   
   A. We want to control the tumor for as long as possible, ideally we want to cure the patient.
B. We want to maintain a good to excellent quality of life for the patient throughout the duration of treatment. This is our most important goal of therapy at all times.

The chemotherapy drugs that are used for dogs and cats are the same chemotherapy drugs used for people. Because maintaining a normal quality of life is one of our main goals, we use chemotherapy somewhat less aggressively than in human medicine. Also, dogs and cats seem to be more tolerant of chemotherapy than people, and they do not suffer from as severe side effects.

However, because chemotherapy drugs affect rapidly dividing cells, there are side effects that can occur in dogs and cats. There are 2 important sets of cells in the body that naturally grow and divide rapidly. These are the cells that line the bone marrow (which is where blood cells come from), and the cells that line the gastrointestinal tract. The types of side effects we see in our veterinary patients relate to these cells. We will monitor the blood count immediately before and 7 - 10 days after your pet has chemotherapy. If the blood count is low, chemotherapy will be delayed and the blood count will come back up on its own. If we are worried that your pet may be susceptible to an infection he/she will be placed on antibiotics.

At home, you may notice that your pet has a decreased appetite for 2 -3 days after chemotherapy. You may also notice that they have softer stool than normal 4 - 7 days after chemotherapy. If you pet begins to vomit, or if the diarrhea is severe, DO NOT HESITATE TO CONTACT CVETS at (239) 922-8878. There are medications that may be used to help minimize or control these side effects.

Pets do not commonly lose their hair like people do that are receiving chemotherapy. Delayed hair growth may be seen though in dogs and cats receiving chemotherapy. Any areas that are shaved during the course of chemotherapy may be very slow to regrow hair. Severe hair loss is not common, but may occur in breeds such as poodles and terriers (usually dogs that require regular grooming). Hair usually grows back after chemotherapy is discontinued or when there is a prolonged interval between therapy. In some cases hair may grow back in a different color and/or consistency. Some dogs and most cats will lose their whiskers around their muzzle and cats will lose their eyebrows. Cats will have a generalized thinning of their hair coat as well. Hyperpigmentation of the skin may occur with certain chemotherapy agents.

3. Radiation therapy

Radiation therapy is also used frequently to treat dogs and cats with cancer. The most common form of radiation therapy is also called ‘external beam radiation therapy’. A beam of radiation is aimed at the tumor. The radiation damages DNA in the tumors cells. The tumor cells do not die instantly, but over a period of days to months. During therapy, radiation patients must lie perfectly still. In veterinary patients, this means that they must be anesthetized. The radiation treatments are not painful. Typically, it involves multiple treatments over a course of 3 - 5 weeks. Dogs and cats do not experience the fatigue experienced by human radiation patients. For patients treated with definitive radiation therapy, acute side effects generally start during the second half of therapy and get worse for 1 or 2 weeks after therapy is completed. Cats generally experience mild acute side effects compared to dogs. These effects will heal by about 1 month after finishing radiation therapy and depend on the area being radiated.

The clinician caring for your pet will tell you which of the following effects you should expect. This handout does not describe every possible complication of radiation therapy. The side effects that develop will depend on what area of the body your pet will have radiation administered to.

Skin: Similar to sunburn, skin will turn pink and then red. Skin can peel and ooze, then will scab over and heal. If a foot is radiated, the surface of the pads will peel off and radiated toenails may fall off. In areas where the skin rubs (like armpit or groin) or on feet, this may be uncomfortable. As the skin heals, it will be itchy. We will use anti-inflammatory drugs, antibiotics, and pain medications as needed.
to keep your pet comfortable and help this area to heal. We may recommend an ointment to help healing. It is extremely important that your pet does not scratch or chew the treatment field as this can result in permanent damage. An E collar will be provided to prevent injury to the radiated skin.

**Mouth:** The lining of the mouth, gums, and tongue will become reddened and can peel. You might notice drooling and some difficulty eating. Most dogs will eat despite radiation toxicity to the mouth, but may do better with soft foods (canned food or dry food soaked in water) or even a gruel of canned food and water. It is important to change food over a few days to avoid diarrhea. We will discuss necessary diet changes with you during the course of treatment. We will use anti-inflammatory drugs, antibiotics, and pain medications as needed to keep your pet comfortable and help this area to heal. We may recommend a special mouthwash.

**Eye:** During radiation therapy, if the eye is in the treatment field, the eye and conjunctiva (pink tissue around the eye) will become reddened. It is possible for the surface of the eye (cornea) to be injured. This is painful and you might notice squinting. Please notify us if you notice any changes in the eye or squinting. We will use eye medications as needed to keep your pet comfortable and help the eye to heal. It is imperative that your pet wears an E collar to prevent serious damage to the eye. Radiation therapy injures the tear glands and can result in decreased tear production. A radiated eye may require life-long medication.

**Weight Loss:** Food must be withheld after midnight the night before radiation therapy because of anesthesia. This is not a problem for most dogs, but for cats that tend to eat their food slowly through the day or at night, this may result in weight loss. We will monitor your pet’s weight during treatment and discuss methods of maintaining body weight as needed. This may include feeding more often, feeding more palatable foods, hand feeding, and the use of appetite stimulants.

**Late side effects** generally do not occur until 6 months - 1 year after radiation therapy. These effects are more serious because they do not heal. With the exception of palliative radiation therapy (where we do not expect a patient to live long enough to experience these effects), protocols are designed to reduce the risk of serious late side effects to less than 5%.

**Skin:** Late side effects involving the skin are common. These are changes in the skin that will not affect your pet’s quality of life. The skin in the radiation field will change in texture (feel more like scar tissue) and darken (hyperpigmentation). The amount of hair regrowth varies from patient to patient. Some patients do not grow hair in the radiation field, some grow patches of hair, and some grow all of the hair back. What hair grows in the treatment field will be white. The radiation field can develop sunburn if not protected from sunlight. The field should be kept out of the sun, or blocked using sunblock for babies or protective clothing. If you should notice any changes in your pet’s radiation field (a lump, swelling, or redness), please call us.

**Eye:** A radiated eye will commonly be left with decreased tear production requiring life-long medication. Over time a cataract may develop. Very rarely, blindness due to retinal damage or severe injury necessitating removal of an eye can occur. All radiated eyes are monitored closely during and after radiation therapy. Should you ever notice that your pet’s eye is red or squinty, please call us.

**Mouth:** The mouth will generally heal and return to normal. Rarely a patient may develop necrosis (death) or infection of bone in the jaw.

**Bone:** Rarely, bone underlying a radiation site may develop necrosis.

**Second Tumors:** It is uncommon, but possible, for patients to develop second tumors in the radiation field. This happens in less than 5% of radiation patients and usually occurs at 5 or more years after radiation therapy.

This handout is provided as an overview of treatment options that may be recommended for your pet. If you have additional questions that are not answered in this handout please feel free to call Dr. Sarah Kraiza (239) 992-8878. We look forward to working with you and your pet on the oncology service here at Florida Veterinary Referral Center.