

## Radiation Therapy – Oral Malignant Melanoma

Oral malignant melanoma (OMM) is the most common oral tumor in dogs, while it is an uncommon oral tumor in cats. These tumors arise from melanocytes, cells that produce the pigment in our skin and mucosa called melanin. Commonly affected breeds include Scottish terriers, golden retrievers, Chow Chows, poodles, and dachshunds. They are locally aggressive, invading into bone and local tissues. They also have a high metastatic potential, or risk of distant spread to other organs. Most common sites of tumor spread include lymph nodes (under the chin and in the neck), lungs, liver, brain, and adrenal glands.

Melanomas can sometimes be difficult to diagnose. The most distinguishing feature of these cells is that they contain melanin (a green to black pigment). About 1/3 pigment and are amelanotic, meaning they do NOT have pigment, and can therefore be misdiagnosed as other tumor types. A diagnostic work up of an oral mass includes obtaining a sample with a fine needle aspirate or a biopsy. A biopsy is more likely to give a definitive diagnosis and may require sedation. Full staging is recommended before pursuing therapy, including complete blood work and urinalysis, cytology of the mandibular lymph nodes or any other enlarged lymph nodes, chest x-rays and abdominal ultrasound. Up to 40% of normally sized lymph nodes can have metastasis, so we recommend sampling mandibular lymph nodes regardless of their size on physical exam. A computed tomography scan (CT scan) of the skull and neck is extremely helpful for determining the extent of these tumors deep to the skin, identifying abnormal lymph nodes, and is often required for surgical and radiation planning.

If the mass is a size and, in a location, amenable to surgery, this may be the best option. This would most likely include removing a portion of the upper or lower jaw along with the tumor to obtain a margin of normal tissue around the mass. Small tumors that can be completely excised can have survival times of 1-1.5 years. Most dogs will ultimately succumb to the spread of the disease to the lungs or abdominal organs.

Surgical removal is not always an option due to the size of quickly growing masses and/or the location (hard palate, back of the mouth, etc.). If surgery alone is unable to remove the entire tumor, radiation can be applied to the surgical scar to further eliminate tumor cells. The optimal radiation protocol in this microscopic disease setting is unknown and debatable amongst oncologists. At VSC, we offer once daily treatment, Monday through Friday, for 18 days. This combination of surgery and fractionated radiation quotes the longest survival times at ~ 15 months. This combination does cause acute radiation-induced side effects to the oral mucosa, and, depending on the location, to the skin and eyes. Consult with your radiation oncologist about the specific side effect profile for your pet if you are interested in this option.

If surgery is not an option, your pet already has metastatic spread to other organs, or the risk and side effects of surgery and definitive radiation are outside of the goals for your pet, palliative protocols are good options. These protocols have fewer acute side effects, fewer treatments, and therefore fewer anesthetic episodes. Unfortunately, because the radiation dose being delivered is lower, tumor control times are shorter. Most studies have found survival times following these protocols to range from 4 months to 12 months, and this is dependent on tumor size and location. The protocols recommended may vary depending on the size and location of your pet's tumor. Most protocols entail once a week treatment for 4 to 6 weeks, or twice a week treatment for 5 total doses.

Thank you for considering bringing your pet to us for treatment. We understand and value the trust you have placed in us. Should you have any questions regarding radiation therapy for the treatment of oral malignant melanoma, please do not hesitate to ask to be put in contact with a member of our radiation oncology team.

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*Veterinary Specialty Center is guided by the belief that companion animals deserve state-of-the-art medical care in a kind and comforting environment. The courage of our patients, the loyalty of their human families, and the devotion of our referral veterinarians inspire our vision. It is sustained by the contributions of our compassionate, knowledgeable and dedicated staff and built upon a tradition of providing unsurpassed healthcare for animals.*

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