



## **CANINE ORAL MALIGNANT MELANOMA**

### **What is malignant melanoma?**

Malignant melanoma is a cancer of pigmented cells called melanocytes. Malignant melanoma commonly occurs in the mouth of dogs, including the lips, tongue and gingiva. Oral malignant melanoma is a very aggressive cancer in dogs with high potential for metastases, or spread, to other parts of the body, particularly the lymph nodes and lungs. Early, aggressive treatment is important to improve outcome for patients with oral melanoma.

### **What are the symptoms?**

Most dogs will present with a mass in the mouth noticed by the owner. Melanomas that occur in the back of the mouth are not often seen by the owner, but patients will present for facial swelling, bad breath, excessive drooling, bleeding from the mouth, weight loss, or difficulty eating and drinking. Occasionally swelling of the lymph node in the neck due to metastases is the first symptom.

### **How is it diagnosed?**

Sedation or anesthesia is often required for a thorough examination of the mouth. This can be particularly important for tumors located in the back of the mouth or on the tongue. X-rays of the affected area of the mouth may assist in determining the extent of disease and to help evaluate for surgical resection. However, apparently normal X-rays do not rule out bony invasion. CT or MRI may be valuable in evaluating the extent of oral melanomas, particularly when invasion into the nasal cavity or around the eye is suspected. Ultimately a biopsy of the lesion is necessary for a definitive diagnosis. Up to 1/3 of malignant melanomas will not contain melanin pigment, which can confuse the diagnosis with other oral nonpigmented cancers. Careful examination of the draining lymph nodes is also important. Fine needle aspirates of the lymph nodes are performed in most patients, especially when the lymph nodes are enlarged. X-rays of the lungs are very important to evaluate for metastatic disease, prior to planning treatment.



## **How is it treated?**

### Surgery

Surgery to remove the primary mass is the mainstay of treatment. Many of these tumors will have extensive bone invasion and radical surgeries to remove the affected jaw bone (mandibulectomy/maxillectomy) is necessary to achieve adequate margins. For most dogs, cosmesis and function is good and patients return to good quality of life following surgery.

### Radiation therapy

Radiation therapy is beneficial for the treatment of large, unresectable oral melanomas or as an adjunct to tumors with incomplete margins following aggressive surgical excision. Melanomas respond more favorably when radiation is given in large "fractions" or doses, on a less frequent schedule. Radiation therapy is administered once weekly for 4 treatments. General anesthesia is required to keep your pet still during the treatment. Side effects with this schedule are minimal but may include transient mucositis (sore, inflamed gums), drooling, and/or bad breath. Please refer to the handouts on radiation therapy for more detailed information. Radiation is a local treatment and will not address the potential for metastases.

### Chemotherapy

There are no controlled studies in dogs that address the benefits of chemotherapy as an adjuvant to surgery and/or radiation therapy for oral melanoma. Carboplatin appears to be the most effective chemotherapeutic based on a small study in dogs with unresectable tumors. We are currently recommending carboplatin chemotherapy in combination with surgery and/or radiation therapy. Carboplatin is administered intravenously once every 3 weeks for a total of 4 treatments. Carboplatin is well tolerated in dogs and side effects are minimal. Although our clinical impression is that carboplatin is beneficial in improving survival over surgery alone, there are no published studies to confirm a survival advantage with the use of carboplatin or by how much time survival is improved.

## **What is the prognosis?**

Oral malignant melanoma is an aggressive cancer with high potential for metastases. Approximately 75% of dogs with oral melanoma will survive 1 year or longer when treated aggressively. Prognosis is highly dependent on the size of tumor at diagnosis and the ability of the first treatment to afford local control. Dogs with tumors less than 2 cm in diameter have a median survival of 511 days with surgery alone compared to 164 days for dogs with tumors larger than 2 cm diameter or evidence of lymph node



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metastases. Small pedunculated melanomas on the lip or gum line may have a better prognosis than larger tumors within the mouth. Recurrent malignant melanomas have a less favorable prognosis.

Radiation therapy is effective for nonresectable melanomas, with many dogs achieving a complete regression of tumor. Radiation therapy is also effective as an adjunct treatment of incompletely removed oral melanomas. However, metastases still remains a problem resulting in death of the patient.

Chemotherapy with carboplatin may be beneficial in delaying or preventing the onset of metastases in dogs with oral melanomas; however no published studies exist to confirm a survival advantage with the use of chemotherapy.