

Canine Oral Malignant Melanoma

A PowerPage Presented By



Key Points

- Oral malignant melanoma (OMM) is **the most common malignant oral tumor** in the dog
- Overrepresented breeds include **Chow Chows**, Golden Retrievers, Poodles, and Cocker Spaniels

Pathology and Natural Behavior

- Melanoma- tumor of melanocytes
- About **1/3 of OMM are amelanotic** and may not contain any melanin
- Diagnostic challenge
 - Morphologically, OMM can look like neoplasms of mesenchymal (sarcoma), epithelial (carcinoma), or round cell origin
 - May be difficult to diagnose if they are amelanotic
- The **majority of OMM are metastatic (up to 80%)**
 - Frequently metastasize to local lymph nodes and then the lungs
- Besides the oral cavity, other common places for melanoma to occur include:
 - Cutaneous (more commonly benign)
 - In **nail beds** (about 50% are malignant and 50% are benign)

Diagnosis and Staging

- Biopsy is needed to definitively diagnose OMM
 - Can distinguish from common oral tumors (i.e. squamous cell carcinoma or fibrosarcoma)
- Once a diagnosis is obtained, staging should include:
 - Minimum database
 - Regional lymph node aspirates
 - Thoracic radiographs
- Cross sectional imaging with CT or MRI are often helpful for assessing bone involvement and surgical planning

Treatment

- Treatment of choice for the primary tumor is **surgical excision with wide margins**, which usually necessitates removal of underlying bone (partial mandibulectomy or maxillectomy)
- Radiation therapy is useful in shrinking the tumor or temporarily slowing its growth if surgical excision is not an option or if there is high chance of local recurrence
- Adjuvant systemic therapy in the form of chemotherapy or immunotherapy are additional treatment options which may help to slow the progression of, or to shrink metastatic disease
 - The platinum agents, **carboplatin and cisplatin**, have shown mild efficacy in shrinking gross OMM lesions temporarily

Immunotherapy

- Melanoma is often an immunogenic tumor and many forms of immunotherapy have been attempted
- Currently, a xenogeneic human DNA vaccine is commercially available for use in dogs with OMM
- The vaccine is to be used for treatment of OMM after it has developed, NOT to prevent the disease from developing as with traditional vaccines
- How the vaccines works:
 - Injected DNA encodes for a human protein called tyrosinase, which is found in melanocytes and melanoma cells
 - Since tyrosinase is a human protein, the canine immune system recognizes it as a foreign antigen and mounts an immune response by forming antibodies against it
 - Similarities between human and canine tyrosinase cause the antibodies to cross react and bind with canine tyrosinase as well, creating an immune response to the melanoma cells
- Early reports of the vaccine showed some promise but its efficacy remains to be proven and requires further investigation

Prognosis

- Variables with prognostic significance include:
 - **Tumor size:** tumors <2cm have a median survival time of about 17 months, >2cm have a median survival of about 5.5 months
 - Clinical stage
 - Complete margins obtained with the first surgery
 - Tumor location: dogs with tumors in the rostral oral cavity have longer median survivals than those in the caudal oral cavity

