



Oral Tumors

Associated Terms:

Tumors of the Mouth , Maxillectomy, Mandibulecomy, Melanoma, Ossifying Epulis, Fibrous Epulis, Epulis, Mouth or Jaw Cancer, Acanthomatous Ameloblastoma



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Overview:

Tumors of the oral cavity can arise from the bone, teeth or soft tissue structures of the lower (mandible) or upper (maxilla) jaw, or the tongue or pharynx. Most tumors of the oral cavity are malignant: malignant melanoma and squamous cell carcinoma are the most common oral tumors in dogs and squamous cell carcinoma is the most common oral tumor in cats.

Other malignant oral tumors include:

- fibrosarcoma
- osteosarcoma
- multilobular osteochondrosarcoma
- mast cell

Benign oral tumors are also common and include acanthomatous ameloblastoma and peripheral odontogenic fibroma. **Surgery is usually recommended for the treatment of most malignant and benign oral tumors**, but other options may be available depending on the tumor type. Other treatment options, such as radiation therapy, chemotherapy and/or immunotherapy, may also be indicated for certain oral tumors instead of or in addition to surgery.

Oral tumors are relatively common in cats and dogs. Benign and malignant tumors of the oral cavity account for 3-12% of all tumors in cats and 6% of all tumors in dogs. Malignant melanoma and squamous cell carcinoma are the most common oral tumors in dogs, and squamous cell carcinoma is the most common oral tumor in cats.

Signs and Symptoms:

- presence of a mass in the oral cavity
- increased salivation, blood in the saliva, odorous breath
- swelling of the face or bulging of an eye,
- bloody nasal discharge
- difficulty eating or pain on opening the mouth, weight loss. and enlarged lymph nodes in the neck region
- loose teeth, especially in an animal with generally good dentition, may be indicative of cancer-induced bone loss, especially in cats

Diagnostics:

Physical examination, blood tests (complete blood count and serum biochemistry), radiographs or computed tomography (CT) scan of the skull, chest radiographs or CT scans, and aspiration of the regional lymph nodes are recommended for cats and dogs with suspected oral tumors. In general, the following tests are recommended to diagnose the tumor, provide a clear clinical picture of overall health and evaluate for metastasis:

- **Physical examination:** assess general health status, identify any other concomitant problems, examine and measure the oral tumor, and assess the size of the regional lymph nodes.
- **Blood tests:** assess general health status as many cats and dogs with primary bone tumors are older and may have other problems which need to be considered when developing a treatment plan.
- **Aspiration:** a small needle is inserted into the tumor and the lymph node to obtain a few cells that

can differentiate cancer from infection or inflammation. Alternatively, a biopsy of the oral mass may be recommended to maximize the chance of obtaining a conclusive diagnosis before surgery.

- **Imaging of the skull:** depending on the location and size of the mass x-rays, CT scan or MRI may be used to better see the extent of the cancer and plan for treatment. It is important to determine the degree of bone invasion and assist in surgical planning.
- **Chest x-rays or CT scan:** look for signs the cancer has spread to the lungs

Treatment:

Further consultation with your primary care veterinarian may result in a referral to an ACVS board-certified veterinary surgeon to fully explore options for your pet. Surgery is often recommended for the management of oral tumors. The treatment options depend on the location of the tumor and the type of tumor. In general, benign tumors are excised with 1cm margins and malignant tumors are excised with 2-3cm margins.

- **Mandibulectomy** is removal of part of the lower jaw. Various mandibulectomy procedures have been described, depending on how much of the jaw needs to be removed. The choice of mandibulectomy technique depends on the tumor type and location. For benign and low-grade malignant tumors, less aggressive techniques are usually adequate (Figure 1). However, for malignant tumors or large tumors, more aggressive procedures such as subtotal or total hemimandibulectomy are recommended (Figure 2).
- **Maxillectomy** is removal of part of the upper jaw. Similar to mandibulectomy, various maxillectomy procedures have been described. These procedures can be combined with removal of the nose, orbit, skull and mandible if necessary. Similar to mandibulectomy, the choice of maxillectomy technique depends on the tumor type and location. For benign and low-grade malignant tumors, less aggressive techniques are usually adequate (Figures 3, 4). However, for malignant tumors or large tumors, more aggressive procedures such as caudal maxillectomy or hemimaxillectomy are recommended (Figure 5).



Figure 1. The typical postoperative appearance of a dog following bilateral rostral mandibulectomy. Note the shortened mandible and the tongue hanging out.

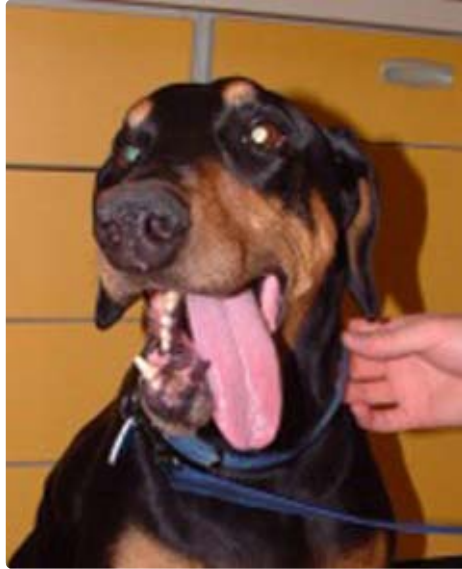


Figure 2. The typical postoperative appearance of a dog following subtotal (pictured) or total hemimandibulectomy. The lower jaw drifts towards the midline and the tongue hangs out on the surgery side.



Figure 3. Intraoperative image following hemimaxillectomy for excision of a fibrosarcoma. Hemimaxillectomy involves removal of the maxilla on one side of the upper jaw.



Figure 4. The typical appearance of a dog following bilateral rostral maxillectomy. Note the mild drooping of the nose.





Figure 5. The typical appearance of a dog following caudal maxillectomy or hemimaxillectomy with scalloping of the maxilla on the affected side. Photo provided courtesy of B. Duncan Lascelles, BVSc, PhD, Diplomate ACVS.

Aftercare and Outcome:

Most animals are discharged 2-5 days after surgery, depending on their level of surgery, comfort and ability to eat soft food. They are usually returned for recheck and incision check 10-14 days after surgery. Pain can be well-controlled with owner-administered medications.

Restrictions following surgery usually are:

- use a restrictive collar for 10-14 days after surgery to prevent the natural tendency of dogs to lick and chew at a wound. This can cause breakdown of the wound and infection.
- limited and restricted activity is indicated for about two weeks to allow recovery and incision healing
- soft canned food, or water-soaked kibble for 2-3 weeks after surgery. A feeding tube may also be used depending on the extent of surgery in dogs, or in cats (Figure 6)
- no chew toys, raw hide or ball playing for 2-4 weeks after surgery



Figure 6. A feeding tube may be used following a mandibulectomy procedure in cats because they often don't eat enough on their own for at least 2 weeks after surgery.

Postoperative complications can include:

- incision opening or breakdown is common and may require additional minor procedures or may be left to heal on its own depending on the size of the defect and location
- bleeding from the nose for a few days is common after maxillectomy procedures
- increased salivation may be temporary after surgery, but persists in some cases
- swelling under the tongue (Figure 7)
- mandibular drift, jaws not lining up well
- difficulty eating, although this usually resolves within a couple weeks if not sooner. The vast majority of animals eat within 1-2 days of surgery

- recurrence of the tumor

The prognosis for cats and dogs with oral tumors is dependent on the type of tumor and sometimes the location of the tumor, size of the mass, success of surgery, and presence of metastatic disease. Tumors located in the front of the oral cavity are usually detected at an earlier stage and are more likely to be completely removed with surgery.

Fibrosarcoma continues to have a high local recurrence rate and needs to be addressed with wider resections or other adjuvant therapies, such as postoperative radiation. On the other hand, surgery and/or radiation therapy is successful in controlling malignant melanoma locally in 75% of cases, but metastatic disease requires more effective adjuvant therapy, such as radiation therapy, chemotherapy, or immunotherapy.

Surgery plays a pivotal role in the management of most oral tumors and advice from an ACVS board-certified surgeon is recommended for all cats and dogs with an oral mass. While resection of various segments of bone from the skull can be a daunting prospect for owners, the vast majority of dogs have minimal cosmetic and functional consequences as a result of these surgeries.



Figure 7. A ranula-like lesion (arrow) in a dog one day following subtotal hemimandibulectomy for an osteosarcoma. These may represent either a hematoma or accumulation of saliva. Treatment is rarely required because these lesions often resolve spontaneously.

This Animal Health Topic was written by and reviewed by Diplomates of the American College of Veterinary Surgeons. Any opinions stated in this article are not necessarily the official position of the American College of Veterinary Surgeons.

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