A patient presents with facial swelling. Certain etiologies may come to mind: possible bug bite or allergic reaction, trauma, abscessed tooth, or tumor. The next step in determining a cause would be physical examination. Is there a fractured tooth? Is there a visible mass? Is there a history of contact with insects, toxins, or recent vaccines? In our practice, facial swelling is more often associated with an abscessed tooth or tumor, but sometimes it is not an obvious call. Teeth do not necessarily need to be fractured in order to be abscessed. Even with dental radiographs, we may not be certain of the exact cause of the swelling.

In these cases, we perform multiple diagnostics to ensure that we can adequately diagnose and/or treat the swelling. To determine a cause we will continue our oral examination under general anesthesia and take dental radiographs. In many cases this may be all we need to make a final diagnosis if there are obvious etiologies may come to mind: possible bug bite or allergic reaction, trauma, abscessed tooth, or tumor. However, the presence of a draining tract will lead to a tentative diagnosis of osteomyelitis (Figs. 1 and 2). Then the next question arises: what is the etiology of the infection? If we are at all uncertain, we will submit samples of tissue for histopathology and bacterial culture to rule-out neoplasia or osteomyelitis/infection (Fig. 3).

We never want to miss an etiology we could have identified by performing a simple test. If the swelling resolves and the diagnostic tests come back negative, we can be confident that we have adequately treated and resolved the problem. Bottom line: never assume the lesion is cancer; it just may be infection.

Fig. 1 Image showing a gingival mass and mandibular swelling in a 12-year-old cat (A). There was a draining tract on the chin directly below the mandibular swelling and diagnosed tooth (B). The mandibular radiograph shows a pronounced periosteal reaction (C). Extraction of the tooth in this quadrant was performed in addition to histopathology and culture of the bone. The result was inflammation due to a ruptured tooth root abscess.

Fig. 2 Image showing a draining tract and pronounced swelling surrounding the left mandibular canine tooth in a 12-year-old cat (A). The mandibular radiograph shows bone loss and root resorption (B). Treatment and diagnostics included extraction of 304 in addition to biopsy and culture of the bone. The diagnosis was infection and a periodontal abscess.

Fig. 3 Image showing mandibular enlargement in a 16-year-old cat (A). Mandibular radiographs show extensive bone loss and periosteal reaction (B and C) that is extreme for infection. Bacterial culture was negative; the biopsy was diagnostic for squamous cell carcinoma.

If we are at all uncertain, we will submit samples of tissue for histopathology and bacterial culture to rule-out neoplasia or osteomyelitis/infection (Fig. 3). We never want to miss an etiology we could have identified by performing a simple test. If the swelling resolves and the diagnostic tests come back negative, we can be confident that we have adequately treated and resolved the problem. Bottom line: never assume the lesion is cancer; it just may be infection.
BEYOND THE MOUTH: Difficult Locations, No Problem!

Our philosophy at the Center is to approach aggressive, malignant neoplasms in an aggressive manner. Aggressive means not measuring tumor-free margins around the entire lesion, no matter the location.

Mast cell tumor is undoubtedly an insidious and aggressive tumor regardless of location. In this case, the patient had an invasive mast cell tumor of the nasal planum area (Fig. 1). Based on the tumor type, margins > 1-cm wound would be ideal in all directions. In order to acquire tumor-free margins, bony structures would require resection (Fig. 2). The preoperative plan included en bloc resection of the entire tumor including multiple tissue layers: skin, subcutaneous tissue/muscle, periosteum, and bone. Soft tissue dissection was facilitated by CO2 laser that has been shown to be associated with less pain and decreased hemorrhage. Reconstruction of the large, multi-layered defect required a labial advancement flap to provide both cutaneous and oral reconstruction. Tumor margins were negative and the patient had a good cosmetic result.

Generally, we focus on fulfilling the plan for resection, with the reconstruction a secondary concern that must await the outcome of the surgery. If resection and wound closure are paramount concerns, then it is probably natural to be more conservative during the en bloc resection. Conservative surgery often results with tumor-positive margins and a concomitant poor prognosis. Incomplete resection is defeating for both the surgeon, client, and especially the patient who might have to undergo additional adjunctive therapy. This case typifies the advanced surgical procedures that can result in tumor-negative margins and a successful outcome. After all, when you refer your clients and their pets for surgery, wouldn’t you prefer the surgeon get it all?

SMALL MOUTHS, BIG HOLES: Uncommon Mass In A Young Cat

It is uncommon to find oral tumors in young animals, but these growths can occur in animals of any age. Unfortunately, many oral tumors are not found until they are large in relation to the small area of the mouth. This oral tumor presented in a cat only 18-months-old (Fig. 1). Because of this patient’s young age, malignant neoplasia didn’t seem likely, but still had to be considered. Odontogenic cyst was also a primary consideration. The most common malignant oral tumors of the feline in order of frequency are squamous cell carcinoma, fibrosarcoma, and malignant melanoma. Benign growths include various epulids, cysts, radiographs showed a possibly fluid-filled, cystic structure that was well encapsulated and invading the maxilla (Fig. 2). It was decided to take a more conservative approach since the patient was young and the radiographs suggested a benign lesion. The mass was causing the adjacent teeth to become mobile, so the affected teeth were also extracted. After removing the mass, there was a large defect that could not be closed without tension (Fig. 3). To facilitate closure, a hard palate flap was created. The flap is elevated from the hard palate and rotated towards the wound site. This allows complete closure of the surgery site without tension, which is the key for uncomplicated healing (Fig. 4). The open area on the hard palate will then heal by second intention. The tissues were sent for histopathology, and were reported as ameloblastic fibroma. This is a rare, benign tumor in cats. Because negative margins were not achieved with surgery, the site will need to be monitored closely for recurrence.

DENTISTRY: Tooth Resorption...Dogs Too!

At the Center, we routinely take full-mouth dental radiographs of our patients. This allows us to thoroughly examine the patient’s dentition and identify hidden problems such as tooth resorption. Most of us are familiar with tooth resorption in the cat; however it does frequently occur in the dog. Perhaps tooth resorption in the dog is becoming more “common” because our diagnostics are improving. Treatment of tooth resorption in the dog and cat can differ.

In cats, we almost always perform extraction of any tooth with either gross or radiographic signs of tooth resorption. Guidelines for treatment of resorptive lesions are contingent upon the radiographic findings. Therefore, dental radiographs are mandatory in order to provide the most appropriate treatment for this disease. A general rule to consider is that if there is one resorptive lesion, there are likely more. Since we do not know the cause of tooth resorption, it is hard to predict when and what teeth will be affected. Extracting the affected teeth is currently the only effective treatment.

In dogs, some cases of extensive tooth resorption may be an incidental finding on radiographs. Teeth with palpable, grossly visible, or radiographic lesions above the gumline are extracted (Fig. 2). Root resorptive lesions may be monitored in the dog if the tooth is non-mobile as they do not seem to progress in the same manner as resorptive lesions in cats (Fig. 3). For cats, Type I tooth resorption has an inflammatory component with the presence of distinct tooth roots. Type II tooth resorption shows roots that are resorbing and being replaced by bone (Fig. 4). The appropriate treatment plan can only be performed based on having dental radiographs. For both dogs and cats, we recommend routine follow-up dental radiographs at yearly intervals in conjunction with a dental cleaning to identify new lesions or monitor progression of any known lesions.