

The Oral Exam

A thorough oral examination is the foundation of veterinary dental diagnosis, treatment, and prevention. The best possible treatment and long-term outcomes are directly related to these examinations. A permanent record should be made of relevant medical and dental history, diagnostic data, and information of all treatment recommended and performed. The client should be informed that comprehensive dental care involves at least five dental oral exams.

1. Oral/Dental Examination in the Conscious Patient

While looking in the dog's or cat's eyes, palpate along the ventral mandibles and maxillae. Signs of facial asymmetry, ocular or nasal discharge, discomfort, or swelling should be noted in the medical record. Enlarged mandibular lymph nodes often can be palpated during this examination. Holding the head steady in one hand, pull the rostral lips caudally to examine occlusion; missing, extra, and malpositioned teeth; or the presence of periodontal disease, fractured teeth, tooth resorption, oral masses, or oropharyngeal inflammation.

The mouth is open and closed several times to help evaluate the temporomandibular joints. Pain, crepitus, and decreased ability to open or close the mouth is noted on the medical record.

What is considered "normal" skeletal occlusion is dictated by the breed. Generally a scissors bite with the maxillary incisors touching and located rostral to the mandibular incisors is considered normal. In brachycephalic breeds, mandibular mesiocclusion occurs where the maxillary incisors are positioned caudal to their mandibular counterparts. Mandibular distocclusion where the maxilla extends far in front of the mandible is never considered normal.

Finally, by placing a finger between the mandibles at the base of the tongue and pushing the tongue up, you can visualize the sublingual area for inflammation, swelling, oral masses, or foreign bodies.

The oral examination performed on a conscious patient allows the practitioner to design a preliminary diagnostic plan. Take into consideration potential patient pain. Do not offend the patient by probing unnecessarily when this can be done better with the patient under anesthesia. Also, realize that in many instances you will underestimate the conditions present, as it can be impossible to visualize all oral structures when the patient is awake. It is only when the patient has been anesthetized that a complete and thorough oral evaluation, including tooth-by-tooth visual, probing, and radiographic examination, and precise treatment and fees for proposed services can be tabulated and discussed with the pet's owner(s).

2. Oral/Dental Examination in the Anesthetized Patient before Teeth Cleaning

General anesthesia with intubation is needed to properly immobilize the patient for an in-depth, tooth-by-tooth examination and intraoral radiology. Gross examination and record notation should include tooth-by-tooth abnormal mobility scores, calculus accumulation, and abnormal oral growths. The teeth are then scaled and polished to allow subgingival examination.

3. Oral/Dental Examination in the Anesthetized Patient after Teeth Cleaning

The periodontal probe is used to measure the depth of the gingival crevice in millimeters to help evaluate the extent of support loss. The Michigan-O probe is marked at 3, 6, and 8 millimeters. Many veterinarians prefer this probe because it has a thin working end; however, the relatively large distance between markings makes the Michigan-O probe poorly suited for feline gingiva. The Michigan-O probe can be obtained with Williams markings, which are preferred by the author.

Inserting the periodontal probe into the gingival crevice and recording millimeter findings is called *probing*. With gentle pressure, the probe will stop where the gingiva attaches to the tooth, or at the apex of the alveolus, if the attachment is lost. Every professional oral-hygiene procedure conducted under general anesthesia should include probing and charting. Dogs normally have less than 2 mm probing depths and cats less than 1 mm. Greater depths may indicate periodontal disease and require treatment.

Two methods of probing are *spot* and *circumferential*:

- Spot probing is the insertion and withdrawal of the probe at a single area per tooth. Because single areas do not represent the entire tooth, inaccurate readings may be obtained.
- Circumferential probing is the placing of the probe in the sulcus, or pocket, in at least four places (two buccal, two lingual or palatal) around the tooth to record millimeter readings. This method eliminates inaccurate readings when subgingival calculus is present or in cases where isolated areas of vertical bone loss are present.

The *clinical depth*, or *probing depth*, is the distance between the base of the pocket and the gingival margin. The probe is inserted in line with the vertical axis of the tooth and “walked” circumferentially to record at least four measurements per tooth. In addition to pathology present, the probing depth is influenced by factors such as the size of the probe, the force with which it is introduced, and the direction of penetration.

Attachment loss (AL) or *clinical attachment level* (CAL), is determined by measuring the distance from the cemento-enamel junction to the pocket base. The CAL offers greater diagnostic significance compared to the probing depth.

4. Oral/Dental Examination after Therapy

Review therapy to make sure that all proposed treatment is completed and all extraction sites greater than 1 mm sutured. Review the dental chart.

5. Oral/Dental Examination Follow-up

This examination is the key to long-term success. Client participation is essential to retard the accumulation of plaque and calculus. Monthly progress examinations are recommended to monitor the results of the plaque-control program and to make needed adjustments and recommendations for professional oral-hygiene visits.

Oral Diseases

Abnormalities in the number of teeth in dogs and cats can be inherited or can result from disturbances during the initial stages of tooth formation. Complete absence of all teeth, *anodontia*, and decreased number of teeth, *oligodontia*, are uncommon. Clinically missing teeth need to be radiographed, as often the tooth is present but impacted. Supernumerary teeth are more common and may result in crowding and malalignment of teeth with development of premature periodontal disease.

Retention of deciduous teeth is commonly observed in small-breed dogs and rarely occurs in cats. Retained deciduous teeth should be extracted as soon as they are diagnosed so that permanent teeth may erupt into their normal position. When retained deciduous teeth are not removed, permanent teeth are deflected lingually, except maxillary canine teeth, which are deflected rostrally.

Periodontal diseases are the most common maladies affecting dogs and cats. Within 20 minutes of teeth cleaning, a glycoprotein layer attaches to the exposed crown. Within 6 hours, bacterial colonization (plaque) forms on the glycoprotein layer. Bacteria naturally occupy the oral cavity and sulcus surrounding the teeth. As periodontal infection progresses, the number of bacteria increase at the gingival margin, allowing gram-negative anaerobic rods and spirochetes to predominate.

There are two broad categories of periodontal disease. *Gingivitis*, in which inflammation is confined to the gingival soft tissues, is the early form of periodontal disease. *Periodontitis*, in which the supporting bone recedes, is the more established form of periodontal disease. The tooth becomes loose and may eventually be lost if the periodontitis is left untreated. The degree of disease can be classified in four stages based on severity.

Endodontics is the dental discipline dealing with disease diagnosis and treatment of the tooth pulp. The pulp consists of richly vascularized and highly innervated connective tissue. When it is traumatized, the pulp reacts to irritants through inflammation. If this condition is left untreated, the inflammation spreads up and/or down the pulp, eventually becoming irreversible.

Tooth resorption refers to a disease process whereby the hard tissues of the tooth root surfaces are destroyed by the activity of multinucleated cells called *odontoclasts*. Tooth resorption occurs in both dogs and cats. External root resorption can be classified into three types: surface, inflammatory, and replacement. The degree of tooth resorption can be classified into five stages depending on the severity of substance loss and in three types based on radiographic findings.

Lymphocytic plasmacytic gingivostomatitis is characterized by a diffuse chronic inflammation of the gingiva and oral mucosa, often extending to the caudal oropharynx. The etiology of feline stomatitis has not been definitively determined. Marked gingivitis and periodontitis is evident 360 degrees around the incisors, premolars, and/or molars in these patients. In other patients, gingival inflammation is apparent around the caudal cheek teeth extending past the mucogingival junction on to the buccal mucosa.

Orthodontics is the study and treatment of occlusion and malocclusion. In mesocephalic (medium-sized muzzle) and dolichocephalic (long, narrow muzzle) breeds, the dentition is normally arranged to create a self-cleaning mechanism, which pushes food away from the teeth and gingiva. If the teeth are not aligned properly, food may be retained, and abnormally positioned teeth may impinge on oral structures, causing patient discomfort and subsequent inflammation.

Oral masses occur commonly in dogs and cats. The most common benign oral masses are peripheral odontogenic fibromas (POF) and acanthomatous ameloblastoma. In the dog, the most common malignant tumors are melanoma, fibrosarcoma, and squamous cell carcinoma. In the cat, squamous cell carcinoma is the most common malignant tumor.

References

Information from the 2013 American Animal Hospital Association (AAHA) Dental Guidelines were used in preparation for this presentation (see <https://www.aahanet.org/Library/DentalCare.aspx>).