**Frequently Asked Questions**

**What is a COHAT?**

COHAT stands for comprehensive oral health assessment and treatment and refers to the recommended procedure for evaluating an animal’s dental health and providing the appropriate treatment. In the past, these procedures were commonly referred to as "a dental” or “a routine dental prophy". However, both terms are considered too vague to describe a process that incorporates a range of procedures with significant variability among patients. Thus, the term “COHAT” was developed to better describe the breadth of services involved in a veterinary dentistry work-up.

**Why is there a consultation exam before the COHAT procedure?**

During the consultation exam, we perform a full physical examination of your pet and an evaluation of the teeth and oral cavity. We discuss preoperative laboratory evaluation (i.e. hematology and blood chemistry), and we discuss the COHAT procedure and the goals we would like to achieve during the procedure. The initial consultation is necessary for several reasons. Firstly, we need to make sure there are no contraindications for anesthesia or underlying health issues that we need to treat before the COHAT procedure. Secondly, the information we collect during the consultation allows us to develop an individualized anesthesia plan to minimize risk during the procedure and optimize recovery. Thirdly, we perform an initial evaluation of the mouth to get an idea of what procedures will likely be necessary and how long the procedure will take. The initial consultation allows us to come up with an estimate of the cost of the procedure in advance. It also allows us to determine if the required procedures will be within the scope of what we can provide at our facility. While we offer a wide variety of prophylactic and treatment options at our facility, we may identify pathological changes that would benefit from procedures provided by a boarded veterinary dentist. Alternative options will be discussed during the consultation.

**What happens during a COHAT?**

For the COHAT procedure, you will drop off your pet with us at 8:30 am and we will briefly review the plan for the day. Please have your phone available during the day so that we can call you to discuss the recommended treatment strategy once we have fully evaluated your pet’s mouth under anesthesia. Once your pet is with us, we will administer a sedative to relax him/her before placing an intravenous catheter. The IV catheter is necessary to administer a subsequent drug to induce anesthesia, to administer fluids during the procedure, and to administer any additional drugs necessary during the procedure. After the premedication and placement of the catheter, we induce anesthesia, insert an endotracheal tube to maintain the airway, and set up monitors for anesthesia. Under anesthesia, we start by flushing the mouth with an antiseptic to reduce the bacterial load in the mouth during the rest of the procedure. We also administer peri-operative pain medication and anti-emetic (anti-vomiting) medication at this time to keep the patient more comfortable during the procedure and to achieve a smoother recovery when we’re finished. Next, we take radiographs of all the teeth to assess the health of the teeth themselves, as well as all of the tissues surrounding the teeth. Following radiographs, we use a dental probe to evaluate the gingiva (soft tissue immediately around the outside of the teeth), look for any pockets around the teeth, and determine if there is any separation between the teeth and the gums. After these assessments, we will call you to discuss recommended treatment for your pet. This may include a simple scaling and polishing of the teeth, it may involve the application of antibiotic gel between the gums and the teeth, or may involve the extraction of some of the teeth. If teeth must be extracted, we administer a local analgesic (numbing medication) to the site of the extraction, which prevents the patient from feeling pain during and for several hours after the procedure. We then remove the teeth surgically, smooth out the surrounding bone to create a comfortable surface, flush the opening with antiseptic, and then suture the gingival tissue over the opening. The sutures are absorbable and are gone within a few weeks. We perform post-operative radiographs of these areas to assure complete removal of the teeth. The remaining teeth are thoroughly scaled above and below the gingiva with an ultrasonic autoscaler to remove all calculus and plaque. Once the teeth are completely scaled, we then polish them to smooth out the entire surface, which helps to

prevent future plaque and calculus buildup. The mouth is then flushed clean of all debris and the second flush of antiseptic is applied. When we are finished with the procedure, we allow your pet to recover from anesthesia and monitor him/her closely until fully awake. If teeth were extracted, we provide pain medication to be administered at home over the next few days. We then discharge your pet to you after 4 pm and discuss the procedure, the findings, and how the recovery will look over the next few days.

**Why do you have to use anesthesia?**

Anesthesia is required for a COHAT procedure. We perform dental radiographs, thorough probing of all teeth on all sides, scaling the teeth, and polishing. It is not possible to perform these procedures on an awake animal. You may see advertisements for individuals claiming to perform veterinary teeth cleaning without anesthesia. These procedures, at best, only remove calculus from the outside of the teeth, which is insufficient to identify and treat pathological changes. In veterinary medicine, such procedures are considered malpractice.

**What happens if my pet has problems following the COHAT procedure?**

We schedule procedures on Monday, Tuesday, and Wednesday. The majority of post-operative problems (e.g. excess pain, inappetence, vomiting, constipation) occur within 48 hours. Thus, we are available to address any of these issues on the days following the procedure to assure that your pet achieves the best possible recovery.

**Why does my pet need so many teeth extracted?**

When we picture human dentistry, we mostly think of teeth cleaning and possibly having cavities filled. In dogs and cats, cavities are quite rare. The much more common problem we see in companion animals is periodontal disease, which is present in more than 80% of animals over the age of three. In this disease, the bacteria in the mouth interact with the host’s immune system to gradually erode the tissue surrounding the teeth. When this situation is bad enough, there is little we can do besides removing the tooth, which eliminates the source of the disease and allows the mouth to return to a comfortable state. For more information on this process, please see the following section on periodontal disease.

**What is Periodontal disease?**

Periodontal disease is a progressive loss of the attachment between the teeth and the tissues that hold them in place. It is considered the most common disease of companion animals with estimates of greater than 80% of animals over three years old exhibiting some degree of periodontal disease. Periodontal disease results from an interaction between the bacteria in the mouth and the inflammatory response of the host to those bacteria. The result is a gradual breakdown of the periodontal structures (gingiva, periodontal ligament, cementum, and alveolar bone) that retain the teeth in the mouth.

*Pathophysiology*

Bacteria start to accumulate on the teeth almost immediately after the teeth are cleaned. Within 24 hours of cleaning, the bacteria form a biofilm, which is a structure comprised of the bacteria themselves and secretory products that surround the bacteria. In dentistry, this biofilm is called plaque. Once the plaque forms, it is very difficult to remove. Over time, the plaque becomes mineralized, resulting in calculus. This is the discolored yellow to grayish accumulation that you may see on your pet’s teeth. In response to the accumulation of plaque, the immune system delivers white blood cells to the area, which attempt to remove the bacteria. In the process, these white blood cells also damage the periodontal tissue in the areas surrounding the plaque. As the plaque proliferates, the bacteria involved release byproducts that further damage the periodontal tissue and stimulate further immune response and then more damage still. In severe cases, the disease process can progress to the point at which all of the periodontal tissue is destroyed and there is no longer any viable tissue holding the teeth in place.

*Cofactors of periodontal disease*

Several factors contribute to variations in the severity and progression of periodontal disease. First, there is considerable variability in the host inflammatory response to the periodontal bacteria and plaque. In some cases, animals can have significant calculus, and the periodontal tissue remains healthy. In other cases, small amounts of calculus are accompanied by severe changes in the periodontal tissue. Second, the morphology of the mouth may affect the accumulation of bacteria. All dogs have the same number of teeth. In the smaller breed dogs, this leads to overcrowding and a reduction in the amount of periodontal tissue between the teeth. Consequently, the periodontal tissue is destroyed more rapidly than in larger individuals. Third, underlying health problems such as diabetes and autoimmune diseases can affect the host's inflammatory response, which may hasten the progression of disease. Fourth, diet and chew toys can influence the progression of periodontal disease. Hard food diets and chew toys can be beneficial in helping to naturally remove calculus and plaque and thus preventing the initiating cause of periodontal disease. In the latter case, it is important to recognize that inappropriate chew toys can have other consequences such as breaking teeth, which alternatively, can lead to endodontic disease. Thus, in choosing chew toys, it is important to find a balance between the periodontal benefits and the endodontic risks. Finally, routine dental care, such as brushing the teeth daily, can prevent the buildup of bacteria and the formation of plaque. Since plaque can form within 24 hours, it is important to keep up with daily brushing.

**Why didn’t you prescribe antibiotics after my pet had teeth extracted?**

In the past, systemic antibiotics were used routinely for veterinary dental procedures, and unfortunately continue to be used routinely in the present. Recent empirical data have failed to support the routine use of systemic antibiotics in the vast majority of veterinary dental procedures and their use likely contributes to antibiotic resistance. The most important aspect of treating infections is removal of the source of the infection such as the plaque, calculus, or infected tooth. Once the source of the infection is removed, the immune system can clear the remainder of the infection. Immediately below the mucosal tissue (i.e. gums) of the mouth is something known as mucosa-associated lymphatic tissue (MALT), which is characterized by a high density of white blood cells that are equipped to address local infections and prevent these infections from spreading throughout the body. Because this tissue is well-equipped to address infection, antibiotics are unnecessary in most cases and have no effect on post-operative recovery. Thus, we reserve our use of antibiotics to cases such as immune-compromised patients and patients on immune-suppressive medications.