



ROOT CANAL THERAPY AND CROWNS

Endodontic or Root Canal Therapy may save a diseased tooth from being lost or extracted. The soft tissue inside the tooth is known as the pulp. When a tooth is injured the crown may or may not be damaged. Just like a closed head injury can bruise the brain, concussive force to a tooth can cause an irreversible pulpitis (severe, necrotizing inflammation of the pulp inside the root canal chamber). The crown of the tooth may develop a blush indicating the blood that has leaked into the surrounding dentinal tubules. The necrotic pulp then releases toxins and in addition, bacteria may infect the pulp especially if the tooth is fractured and the pulp exposed. The infection and toxins can result in abscesses, bone loss around the tooth, pain, and the spread of infection to adjacent teeth. Each time your pet eats food, the bacteria from the infection in the root tip can move into the blood stream. This dissemination of bacteria may result in secondary infections or insults to the heart muscle, kidneys, pancreas, liver, lungs, gastrointestinal system or other parts of the body. For this reason, teeth that are fractured, damaged, traumatized or otherwise suspected of being non vital or having an exposed damaged pulp need to be diagnosed with dental x-rays and treated with a standard root canal therapy. These teeth may also be ex-



tracted to prevent the spread of pain and infection. Extractions however are more traumatic to the patient and can be subject to severe complications. The cost of the loss of a tooth to a pet along with the cost of the change in diet, oral restrictions, post op extraction pain management must be considered when weighing the cost of a standard root canal therapy vs. an extraction.

Anatomy of a Root Canal

The root canal is the tube inside the hard body of the tooth crown and root that houses the pulp. The blood vessels, nerves, and soft tissues within the root canal are known as the pulp of the tooth. The pulp is enclosed in the rigid body of the tooth with very little space around it. Due to the tight quarters inside the pulp chamber any swelling of the pulp due to outside concussive forces can cause irreversible pressure damage on the pulp. If the tooth is fractured and pulp exposed to bacteria (food, grooming, dirt etc...) then it becomes irreversibly infected with bacteria and must be treated to stop the pain and infection.

What is a Root Canal Therapy?

A Standard Root Canal Therapy (SRCT) is a procedure that is designed to remove the infective tissue from the inside of the tooth while saving the body and function of the tooth . There are six basic parts to a SRCT.

1. Gain access into the canal
2. Remove all organic soft tissue and debris from inside the canal and shape it to a uniform size and shape
3. Disinfect the canal to kill all bacteria present
4. Seal the canal
5. Obturate or fill the canal with inert material that will keep the sealant in place
6. Close the openings into the canal and restore the crown to a functional state

What Breaks or Traumatizes Teeth?

Most fractured teeth are caused by accidents, play, or by chewing on things that over challenge the crown. Tug of war games can sometimes break teeth as well. Chewing on natural or hard artificial bones, ice, cow hooves, pencil shaped compressed rawhides, or plastic toys that cannot be indented by a thumbnail can break teeth. Reviewing your pets oral history can sometimes determine what has caused the damage to the crown. Replacing these items with non-damaging chews is recommended.

Restoration of the Tooth

The crown of the tooth can be restored in different ways depending on the age of the pet, the chewing or work habits of the pet, and the initial damage to the tooth prior to the procedure. In most cases the crown restoration will be done with a composite tooth colored material. Composite is a material that is placed as the final layer of sealant in the root canal procedure. However, in some cases a metal crown may be more appropriate. A tooth that is no longer vital dries out and eventually the crown can crack. In young dogs, working dogs, and active chewing dogs crowns can help protect the tooth. Discussing with the dental veterinarian will help determine if a crown is recommended. If this is the case it will require an additional anesthesia to seat the crown approximately one week after the SRCT and crown prep procedure. The crown prep procedure requires full mouth impressions, stone models of the teeth, bite registration, final prep of the affected tooth, final impressions for the crown, placement of a temporary crown, and an e-collar to protect the prepped tooth until the permanent crown is seated. Crowns keep a tooth from cracking as it dries out and protect the tooth from further incidental damage but do not make the tooth invincible. Any tooth can break if it sustains enough force. Common sense tells us that like armor, crowns protect the underlying tissue from concussive force but nothing is bulletproof.

Home Care Following Root Canal Therapy

1. Remove the problem that caused the need for the SRCT. If you fail to do this, additional broken teeth or re-breaking of the restored tooth can be expected.
2. Composite Restoration – give soft food (or moistened dry food) for 24-48 hours
3. Crown Restoration – give soft food until the final crown is seated, and 24-48 hours after the seating of the permanent crown.
4. Antimicrobial medicaments need to be given as directed for the full course. Remember we need to heal the infected periapical bone and surrounding periodontal tissues.
5. Pain medicaments need to be administered as prescribed. Remember if your pet does not seem painful it is because the medicaments are working.
6. Have the veterinarian recheck the tooth in 2-3 weeks
7. An x-ray of the tooth in six months is recommended when the patient returns for their preventative dental cleaning.
8. Continue daily home care including brushing and oral rinse.
9. If your pet shows indications of pain, swelling, discomfort or bleeding following treatment please call the clinic immediately.
10. Allow your pet to only have chewing exercise toys, products, or foods that your family veterinarian feels will have the best effect on periodontal health and the least chance of damaging the teeth.

