



## Fractured Tooth: Root Canal or Extraction?

A fractured tooth is a common occurrence in dogs and cats. Tooth fractures in a dog can be a result of chewing on hard objects/toys, crates or cages, or from trauma. Cat tooth fractures are typically as a result of a trauma. The most commonly fractured teeth are the canines (fangs), the upper 4<sup>th</sup> premolar (carnassial tooth), followed by the lower first molar. A fractured tooth can either be complicated (root canal is involved) or uncomplicated (fracture is only into the enamel or dentin). Complicated fractures lead to immediate infection of the tooth.

When a tooth is traumatized from aggressive chewing or a damaging impact, it can damage the tooth even if the pulp chamber is not exposed. Trauma done to the enamel and dentin that does not enter the pulp chamber can still have vascular damage and allow bacteria to migrate causing infection. If the pulp chamber is exposed the bacteria has direct access to the vital structures of the tooth and cause infection. Intra –oral radiographs need to be taken of the tooth while the animal is under anesthesia to see the extent of disease. If the pulp is exposed endodontic therapy or extraction must be performed. If left untreated, infection and pain will occur and cause further complications, abscesses and/or eventually bone loss.

Root canals preserve the function of the tooth. They involve little to no discomfort to your pet, and are less traumatic than extraction which involves incising soft tissue and removal of bone. Being less invasive allows the animal to be eating their normal diet the next day and it keeps the contour of the upper and lower jaw. A small hole is drilled into the tooth to gain access to the root canal. The necrotic or infected pulp is then removed and the canal is cleaned and sterilized. An inert filling material is used to fill the canal to prevent any space for bacteria to inhabit. A restorative material (“filling”) is used to fill the void. Anesthesia is required and the procedure can sometimes last 1-2 hours. It is recommended that a crown (cap) be placed to protect the tooth after the procedure, especially on canines, upper 4<sup>th</sup> premolars, and lower first molars. Root canals are >90% successful. If a crown is not placed, the tooth may be susceptible to being fractured again. A study showed that crowns have a <4% failure rate. Once a crown is cemented on the tooth it is extremely unlikely that it will fall off the tooth. The crown protects the tooth. Recheck visits at 6 months, with radiographs under anesthesia make sure that the tooth is healing properly and there are no further complications. Dogs and cats are very resilient so it is crucial to recheck even if there are no signs or symptoms of problems. Root canals should have yearly radiographs taken for up to 5 years.

Extracting a tooth can be more invasive and traumatic as a result of removing the entire tooth. Roots of the premolars and molars are multi-rooted and deep into the bone, and extracting them will remove the chewing function and result in bone loss which can weaken the jaw. The root of the canine tooth is larger than the actual crown of the tooth and requires just as long of an anesthetic procedure as a root canal to extract, sometimes longer with complications of extraction. Follow-up visit for an extraction is 2 weeks after the procedure to make sure that the incision sites are healing properly. The patient will be placed on a softened diet until the recheck exam. After the recheck, most animals go back on their previous diet of hard kibble. No other rechecks are needed unless the owner notes an issue with the animal.