

Considerations for the diagnosis and treatment of ... **Discolored Teeth**

In veterinary practice, it is very common to observe discolored teeth. It is important to perform a complete oral exam to determine if there are one or multiple discolored teeth. There are many causes for tooth discoloration; trauma or chronic wear, infection or inflammation, metabolic disease, developmental or drug induced. Consider the patient age and the stage of dental development. Is the dentition deciduous, permanent or mixed? How long has the tooth been discolored? These are important factors in determining the potential cause and optimal treatment. All discolored teeth should be evaluated visually, tactilely and radiographically.



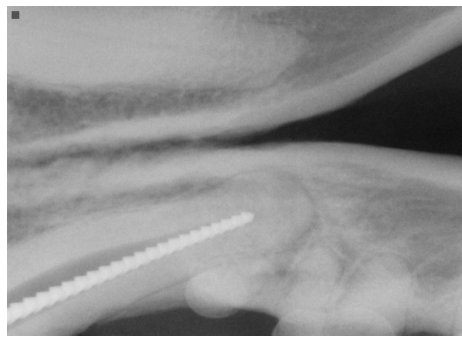
Discolored mandibular canine (#404)

Visual Inspection should include transillumination. A bright light source is directed at the crown of the discolored tooth and the contralateral tooth for comparison. If the pulp chamber size is adequate and the pulp is alive, transilluminating will cause the crown to “glow pink” (as the pulp blood shows through). If the pulp is non-vital, the crown will not have a healthy “pink glow”. It will glow “dull yellow or grey”. In old animals with narrow pulp chambers, transillumination does not work very well as there is not enough blood in the chamber and the light will not pass through the very thick dentin wall.

Tactile evaluation with the shephard’s hook explorer probe is helpful in detecting direct pulp exposure or carious lesions. If there is no direct pulp exposure and the explorer probe slides across a hard tooth surface, the discoloration may be “reparative dentine”. If the tooth surface is “spongy or rubber-like”, the discoloration may be due to caries formation. In either scenario, these teeth may be either vital or non-vital and radiographs are necessary for accurate diagnosis and treatment planning.

Intraoral Radiographs are essential in evaluating discolored teeth. The radiograph must clearly demonstrate the root canal, root apex and periapical tissue. The discolored tooth and the contra-lateral tooth should be evaluated for comparison. Evaluate the discolored tooth carefully for reduced bone density

around the root tips, increased periodontal ligament space, loss of the lamina dura or external root resorption. A Radiograph of the crown of the discolored tooth is compared to the contralateral tooth to assess the density of dentin between the pulp and the outer tooth surface. Reparative dentin might be noticed. The discolored, non-vital tooth will often demonstrate a wider root canal or pulp chamber than the contralateral tooth. Be careful, if the tooth has recently died, radiographs may not detect this change in development. The duration of pathology must always be considered when using radiographs for evaluation. Radiographs may not be sensitive enough to demonstrate early periapical changes. It has been estimated that 40% bone loss is required to be demonstrated radiographically. Serial radiographs can be helpful in evaluation for tooth vitality.



Non-vital tooth;
wider right mandibular root canal (#404).

Is Treatment Needed?

Treatment is always necessary for non-vital (dead) teeth! The majority (>90%) of discolored teeth are non-vital and serves as a potential nidus for local (periapical infection or osteomyelitis) or systemic infection (heart, liver and kidney). Additionally, periapical pathology associated with non-vital teeth is painful. Have you ever experienced a “toothache”? These experiences directly affect your attitudes with regard to dental care for veterinary patients. Treatment is needed for the majority of patients having discolored teeth. It’s not about esthetics; it’s all about disease prevention and allowing for a pain free mouth!

What treatments are available?

Discolored teeth that are non-vital must be treated endodontically (root canal treatment) or extracted. “Waiting and watching” these teeth is rarely beneficial to the patient. Discolored teeth that remain vital can be treated with dental restorations or by crown therapy.



Right mandibular canine tooth
Treated by root canal therapy (#404).