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Vital Pulp Therapy

Vital pulp therapy (VPT) is a treatment that aims to preserve and maintain tooth structure along with preserving the vitality of the tooth. This procedure requires the use of sterile instruments to remove a small amount of pulpal tissue, followed by placement of a pulp dressing, intermediate layer (glass ionomer) and restoration (typically made of composite). VPT allows the tooth to remain alive and mature as an alternative to extraction [1-4].

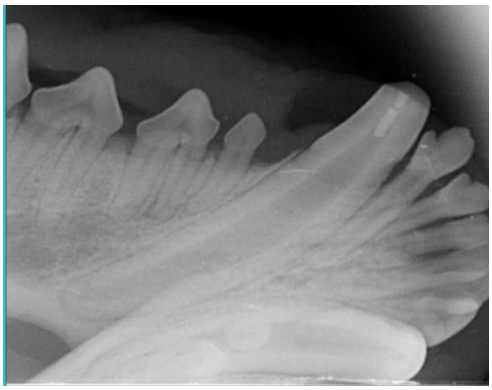

Figure 1. Mandibular canine tooth (404) treated with vital pulp therapy

When is VPT Necessary?

In veterinary dentistry, the most common use of vital pulp therapy is for the treatment of malocclusions to eliminate oral pain and maintain a vitally important tooth. This procedure can also be used in acutely fractured teeth with pulp exposure and teeth with near pulp exposure due to caries defect, etc. Tooth trauma is unfortunately common in companion dogs roughly occurring in 25-27% of patients and is often the result of inappropriate chew toys or aggressive chewing behavior.

In many cases, a broken tooth has pulp exposure. If the trauma is recent (less than a 24-hour duration), vital pulp therapy may be elected to allow the tooth to remain alive. This is particularly important in young patients that may have immature teeth [3,4].

Near pulp exposure occurs when the pulp is not actively exposed. There is still a very thin layer of dentin covering the pulp; however, the tooth is very susceptible to irreversible pulpitis.

Vital pulp therapy is additionally used as a treatment for patients which have a malocclusion to one or both mandibular canines. This is when the lower canines are linguoverted (crowns point straight up and down like a football post and do not have a natural flare out). When this happens, the lower canines contact the hard palate which leads to defects and possible oronasal fistula. An oronasal fistula is a communication (opening) from the oral cavity into the sinus cavity[2].

Oronasal fistulas can lead to chronic upper respiratory infections. By performing crown reduction and vital pulp therapy on the mandibular canines, a pain-free occlusion is attained without losing

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these functionally important teeth through extraction. Treatment of the pulp is necessary to protect the exposed pulpal tissue and to ensure the tooth remains vital (alive).

Figure 2. Occlusal trauma to the maxillary palate due to lower canine

What To Expect After Pulp Capping

Patients who receive vital pulp therapy should have a follow-up, anesthetized exam at least once a year to ensure the procedure remains successful. Vital pulp therapy is successful in most cases with a greater than 90% success rate. It is an excellent option for preserving tooth structure and, more importantly, function.

Figure 3 and 4. Post crown reduction and vital pulp therapy with restoration; note when the patient has his mouth closed, he no longer has trauma to the roof of his mouth.

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