CLINICAL INSIGHTS
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ESCONDIDO ENDODONTICS

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The Stressed Pulp: "How to Kill a Tooth"

According to Gordon Christensen, "Some dentists report that they would like to have endodontic therapy on all teeth requiring crowns before accomplishing any fixed prosthodontic procedures". Certainly, treating any tooth without a potential pulpal problem would make dentistry very easy, however, that is not reality.

One factor that we, as endodontists, like to convey to the patient is that all operative procedures are cumulative with regard to inflammation that may compromise pulpal vitality. The more trauma the pulp has to recover from, the greater the chance for irreversible pulpitis. Abou-Rass once termed this "the stressed pulp" and advocated elective endodontic treatment prior to the restoration of teeth with prior deep preparations or histories of multiple restorations. Realizing that this approach may not be practical or appropriate, consider these factors that will preserve the vitality of the fragile pulp tissue.

BUILD-UP MATERIALS – Currently, the most popular build-up materials are composite resins. Consider the proximity of the build-up material to the pulp since resin based composite are more prone to leakage than traditional amalgam build-ups. Size of the build-up will be directly proportional to the impact on the vital pulp.

PROVISIONALIZATION – The fit, seal, and longevity of temporary crowns will have a direct impact on post-tooth preparation pulpal vitality. Limit the amount of time that a tooth is provisionalized and ensure that a bacteria free seal is present. If the patient has significant post-preparation pain while in the provisional stage, consider endodontic treatment before cementing the final restoration.

DEHYDRATION DURING CROWN PREPARATION – Cutting dentin is cutting "vital" tissue. The dentinal tubules are directly connected to the pulp tissue. A crown preparation exposes virtually the entire dentinal surface to movement of dentinal fluid and infiltration of bacteria. Heat generated by cutting without water coolant is immediately damaging to the pulp.

PRE-TREATMENT PULP VITALITY – Be certain that the tooth is vital prior to restoration. Simple pulp testing for a cold response is a quick and adequate test. Hypersensitivity prior to preparation should be considered a problem as inflammation of the pulp may already exist. All teeth prepared for crowns should be examined with a current periapical image to determine possible apical pathosis from non-vital pulp.

Without being pessimistic, include the possibility of future endodontic treatment in your discussion of informed consent with all extensive restorative procedures. Patients are much more understanding when that is discussed prior to treatment.

Christensen GJ. How to kill a tooth. J Am Dent Assoc 2005;136:1711-1713

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