

Direct pulp capping with self-etching primer on exposed dog's pulp

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The purpose of this study was to evaluate the pulp response of calcium hydroxide and self-etching primer adhesive systems to intentionally exposed dog's pulps.

II. Materials and Methods

Thirty teeth of two dogs were used in this study. After cavity preparation, pulp exposure was achieved with carbide bur (diameter 0.5mm). Hemorrhage controlled was obtained with 5% NaOCl. This study was divided into one control group and five experimental groups. Control group was intact pulp. For experimental group 1, pulp were capped with Ca(OH)₂ and the cavities were sealed with Fuji II LC. For experimental group 2~5, self-etching primer adhesive systems (Clearfil SE Bond, Unifil Bond, One Step, Primer&Bond NT) were capped with exposed pulps, and cavities were sealed with Tetric Flow. After 7, 30 and 90 days, pulp responses were investigated histopathologically using microscopy. The following parameters were evaluated: pulp tissue disorganization, inflammatory cell infiltration, reparative dentin formation, odontoblastic changes.

III. Results

1. In experimental groups, chronic inflammatory cells infiltrated in the pulp tissue and odontoblast cell layer after 7 days. Odontoblast degeneration change, incremental and congested venules in pulp tissue. Pulp tissue disorganization was also observed.
2. After 30 days, moderate inflammatory cell infiltrations into pulp tissue were seen and odontoblast degeneration changes were more developed.
3. After 90 days, inflammatory cell infiltrations were decreased, number of odontoblast was decreased and pulp tissue disorganization was similar to 30 days. Reparative dentin and dentinal bridge formation were seen partially

IV. Conclusions

The pulp response to the adhesive systems were similar to calcium hydroxide. Though pulp tissue disorganization and inflammatory cell infiltration were appeared in all experimental groups, necrosis and abscess was not observed and dentin bridge formation was to be seen.