

Evaluation of Pulpal Microleakage of Four Pulp Capping Agents

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Objectives: The aim of this study was to assess sealing ability of various materials against leakage on direct pulp capping with a computerized fluid filtration method. **Materials and Methods:** Sixty recently extracted sound human molars were sectioned at the level of highest pulp horn to obtain dentin discs of 0.5 ± 0.2 -mm thickness. The dentin discs were numbered and permeability measurement was done before and after treating the samples. For the simulated direct pulp capping, dentin discs were perforated with standard diamond bur and restored with four different capping materials: Dycal (Dentsply), Calcimol LC (Voco), ProRoot MTA (Dentsply) and DiaRoot BioAggregate (DiaDent). Fluid movement measurements were made at 2-min intervals for 8 min, and the mean was calculated for each material. **Results:** Calcimol LC showed significantly higher fluid conductance values than other pulp capping materials ($p < 0.05$). There was no significant difference between ProRoot MTA, DiaRoot BioAggregate and Dycal groups ($p > 0.05$). **Conclusions:** Within the limitations of this study, it can be concluded that the effects of pulp capping agents on dentin permeability are material-dependent. **Clinical Significance:** The results obtained from this *in vitro* study suggest that ProRoot MTA, DiaRoot BioAggregate and Dycal are preferred direct pulp capping materials regarding sealing ability.