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Effect of bevelling on marginal microleakage of buccal-surface fissure sealants in permanent teeth.

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Abstract

AIM: This was to assess the effect of bevelling the margins of fissures on buccal surfaces in permanent molars on marginal microleakage of fissure sealants. **METHODS:** The in vitro study was performed on buccal surfaces of 20 extracted permanent third molars, randomly divided into two groups of 10 teeth. Group I: performing enameloplasty (opening the fissures using fissurotomy bur), conditioning with phosphoric acid (37% phosphoric acid for 20 s), placing bonding (enamel bonding agent), and then fissure sealant. Group II: all stages were similar to group I, except for bevelling the margins of buccal fissures (0.5 mm bevel) after enameloplasty. Teeth were then thermocycled, stained with 1% basic fuchsin, sectioned and examined for marginal microleakage. The Mann-Whitney test was used for statistical analysis. **RESULTS:** No dye penetration was seen in Group II (with bevel), but there was a 60% microleakage in Group I (without bevel) ($p=0.000$). **CONCLUSIONS:** In permanent molar teeth, bevelling the margins of fissures on the buccal surfaces appears to reduce the marginal microleakage of fissure sealants.

Reaxys Database Information

Indexed Keywords

EMTREE drug terms: coloring agent; dentin bonding agent; diagnostic agent; fissure sealant; fuchsin; phosphoric acid

EMTREE medical terms: article; chemistry; classification; clinical trial; comparative study; controlled clinical trial; controlled study; dental acid etching; dental bonding; dental caries; dental surgery; enamel; human; instrumentation; materials testing; methodology; molar tooth; pathology; randomized controlled trial; surface property; temperature; time; tooth disease; ultrastructure

MeSH: Acid Etching, Dental; Coloring Agents; Dental Bonding; Dental Enamel; Dental Fissures; Dental Leakage; Dentin-Bonding Agents; Humans; Materials Testing; Molar, Third; Phosphoric Acids; Pit and Fissure Sealants; Rosaniline Dyes; Surface Properties; Temperature; Time Factors; Tooth Preparation

Medline is the source for the MeSH terms of this document.

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