

Nd: YAG 激光对不同充填材料牙本质边缘微渗漏的影响

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【摘要】目的 评价 Nd: YAG 激光对不同充填材料与牙本质之间边缘微渗漏的影响。**方法** 选用人离体前磨牙 36 颗, 制备 V 类洞, 随机分为激光组和对照组, 激光组使用 80 mJ、10 Hz 脉冲 Nd: YAG 激光照射后, 分别用全酸蚀粘接树脂、自酸蚀粘接树脂和玻璃离子充填洞型, 对照组不使用激光, 同样用如前所述的 3 种材料充填洞型。将所有标本浸泡在 2% 亚甲基蓝溶液中 24 h 后, 用金刚砂片从颊舌向通过充填物中央纵向切开牙体, 显微镜下观察龈壁染料渗透的深度。采用 SAS8.0 软件对数据进行统计学处理。**结果** 经 Nd: YAG 激光照射后尽管 3 种材料与牙本质之间微渗漏程度均有降低趋势, 但只有玻璃离子组激光照射后较未照射组微渗漏降低具有统计学意义 ($P<0.05$)。**结论** 脉冲 Nd: YAG 激光照射牙本质壁, 在一定程度上可能会减少玻璃离子充填材料与洞壁的微渗漏。

【关键词】 Nd: YAG 激光 牙本质 微渗漏

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Effects of Nd:YAG laser on the dentinal microleakage of different filling materials

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【Abstract】Objective The purpose of this study was to evaluate the effects of pulsed Nd:YAG laser on the microleakage of different filling materials at the dentin restoration margin. **Methods** Thirty-six extracted premolar teeth were prepared for class V cavity and randomly divided into two groups: the laser group and the control group. Teeth in the laser group were processed with pulse Nd: YAG laser (0.8W, 10HZ). Then the teeth were filled with total-etch bond system and composite resin, self-etch bond system and composite resin, and glass ionomer respectively. Teeth in the control group without Nd: YAG laser were also filled with the same filling materials. All samples were immersed in 2% Toluidine blue solution for 24h. Specimens were then sliced longitudinally and evaluated under microscope for the extent of dye penetration. All statistical analysis was performed using SAS 8.0 software package. **Result** Our results indicated that the level of microleakage of laser-treated cavities which filled with three kinds of materials was more obviously decreased than that of untreated cavities, but only the level of microleakage of glass ionomer filled cavities after using Nd: YAG laser was less than that of untreated cavities ($P<0.05$). **Conclusion** The short pulsed Nd:YAG laser appeared to be able to reduce microleakage between some filling materials and dentin.

【Key words】 Nd: YAG laser Dentin Microleakage

充填材料的密合性是牙齿充填治疗成功的关

键, 若不密合会导致口腔内液体、细菌及其他产物的渗入, 即边缘微渗漏。微渗漏会产生继发龋、

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