

## ·基础与临床研究·

## 不同根管荡洗方式对根尖微渗漏的影响

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**【摘要】 目的** 采用葡萄糖微渗漏法比较5种不同的根管荡洗方式对根管微渗漏的影响。**方法** 选择60颗符合条件的离体下颌第一或第二前磨牙,常规根管预备后随机分为6组,采用不同方式根管荡洗:常规冲洗(A组)、超声荡洗组(B组)、Nd:YAG激光组(C组)、PIPS(D组)、SWEEPS(E组)及阴性对照组(F组),AH-Plus根管封闭剂+热牙胶垂直加压充填根管,将样本放置于葡萄糖微渗漏模型中,于第1, 2, 4, 7, 10, 15, 20, 25, 30天时检测葡萄糖渗漏量,并进行统计学分析。**结果** 除阴性对照组(F组)外,各组均出现了微渗漏,充填后一周内各实验组间渗漏量差异无统计学意义( $P > 0.05$ );第10天,B、D、E组间差异无统计学意义( $P > 0.05$ ),但显著低于A、C组( $P < 0.05$ );第15、20、25、30天,A、B、C组间差异无统计学意义( $P > 0.05$ ),但显著高于D、E组( $P < 0.05$ );30天内D、E组微渗漏值差异无统计学意义( $P > 0.05$ ),但明显低于对照组(A组)( $P < 0.05$ )。**结论** PIPS及SWEEPS荡洗技术可提高根管充填后的封闭性,减少微渗漏的发生;Nd:YAG激光及超声荡洗处理对封闭性影响不明显。

**【关键词】** 超声根管荡洗 激光荡洗 激光引发光声流 冲击波增强发射光声流 葡萄糖微渗漏

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## Effects of different root canal irrigation methods on apical microleakage

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**【Abstract】 Objective** The aim of the study was to compare the effects of 5 root canal irrigation methods on root canal microleakage using glucose microleakage method. **Methods** 60 eligible isolated first or second mandibular premolars were selected. After conventional root canal preparation, the teeth were randomly divided into 6 groups with root canal irrigation in different ways: conventional irrigation (Group A), ultrasonic activated irrigation group (Group B), Nd: YAG laser group (Group C), PIPS (Group D), SWEEPS (Group E) and negative control group (Group F). Following this, AH-Plus root canal sealer and hot gutta-percha were vertically compression filled the root canals, the samples were placed in the glucose microleakage model. Glucose leakage was measured and statistically analyzed on the 1st, 2nd, 4th, 7th, 10th, 15th, 20th, 25th and 30th days. **Results** Microleakage occurred in all groups except the negative control group (Group F). There was no significant difference in the amount of leakage among the experimental groups within one week after filling ( $P > 0.05$ ). On the 10th day, there was no significant difference among Group B, D and E ( $P > 0.05$ ), and it was significantly lower than that of Group A and C ( $P < 0.05$ ). On the 15th, 20th, 25th and 30th day, there was no significant difference among Group A, B and C ( $P > 0.05$ ), and it was significantly higher than Group D and E ( $P < 0.05$ ). Within 30 days, the microleakage value in Group D and E had no significant difference ( $P > 0.05$ ), and were significantly lower than that of the control group (group A)( $P < 0.05$ ). **Conclusion** PIPS and SWEEP irrigation technology can improve the sealing ability of root canal filling and reduce the microleakage; Nd: YAG laser and ultrasonic activated irrigation have no obvious

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