·基础与临床研究·

# 显微 CT 评价 Er：YAG 激光对完全型管间峡区碎屑的清理能力

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【摘要】 **目的**　应用显微 CT 技术，观察和评价不同功率 Er：YAG 激光与 NaClO 冲洗液联合使用时对完全型管间峡区内碎屑的清理效果，为探索清理完全型管间峡区的新方法提供实验依据。**方法**　通过 CBCT 扫描后，挑选出经统一截冠且根管预备后仍含完全型管间峡区的前磨牙 20 颗，随机分成 4 组，显微 CT 初次扫描，采集图像，峡区定位。实验组分别使用 1.5 W、2.0 W、2.5 W Er：YAG 激光照射根管 1 min 并使用 1.0% NaClO 冲洗根管，对照组仅用 1.0% NaClO 溶液冲洗根管 1 min。激光照射冲洗根管完成后，显微 CT 再次扫描标本，采集图像，计算处理前后完全型管间峡区碎屑量的变化值百分比，并进行统计学分析。**结果**　实验组随激光功率增大，峡区碎屑的减少量亦增大，分别为 7.15%、9.19% 和 10.14%。对照组碎屑减少量为 0.51%。3 个实验组的碎屑减少量与对照组之间的差异具有统计学意义（$P<0.05$）。**结论**　使用 Er：YAG 激光配合 NaClO 溶液处理根管，能较好的清理完全型管间峡区，激光功率越大，清理效果越好。

【关键词】 完全型管间峡区　Er：YAG 激光　Micro CT

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## Evaluation of cleaning ability of Er: YAG laser for debris in the complete root canal isthmus by Micro-CT

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【**Abstract**】 Objective　The aim of this study was to observe and evaluate the effect of different power of Er:YAG lasers and NaClO rinsing liquid on the cleanup of debris in the complete canal isthmus by using micro-CT technology, and to provide a new method for exploring the clean up of debris in the root canal isthmus. **Methods**　After CBCT scan, 20 pre-molars with uniform truncated crowns containing the canal isthmus after root canal preparation were randomly divided into four groups. The experimental teeth were scanned with micro-CT for the first time and the images were collected and the districts of canal isthmus were positioned. Then, the three experimental groups were irradiated with 1.5 W, 2.0 W, and 2.5 W of Er:YAG lasers for 1 min. The control group was only washed with a 1.0% NaClO solution for 1 min. The specimens were scanned by the micro-CT, the images were collected and the percent of changes in the amount of debris in the gap between the complete tubes before and after treatment and the statistical analysis was perfromed. **Results**　With the increase of laser power in the three