

·基础与临床研究·

两种不同分辨率下 CBCT 诊断下颌第一恒磨牙近中根管形态的研究

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【摘要】目的 探讨牙科锥形束 CT (CBCT) 在不同分辨率下诊断下颌第一恒磨牙近中根根管系统形态的准确性。**方法** 从口腔科临床上采集拔除的下颌第一恒磨牙 31 颗, 用牙科 CBCT 分别以 300 μm 及 200 μm 分辨率进行扫描, 接着用显微 CT 以 9 μm 分辨率进行扫描并三维重建。然后由两名口腔医师按照分辨率由低到高的顺序分析 CT 图像资料, 并对近中根根管系统的形态进行诊断; 每个分辨率下观察诊断 2 次 (间隔 2 周)。Kappa 检验评估观察者自身及观察者间的一致性。以显微 CT 为标准, 评估 CBCT 在 300 μm 及 200 μm 分辨率下的准确性。**结果** 在 CBCT 的分辨率分别为 300 μm 和 200 μm 时, 2 个观察者之间一致性检验 Kappa 值分别为 0.64 与 0.76; CBCT 与显微 CT 数据之间一致性检验 Kappa 值分别为 0.62、0.56 (观察者 A 和 B, 300 μm) 与 0.76、0.84 (观察者 A 和 B, 200 μm)。在 CBCT 的分辨率为 300 μm 时, 观察不到侧副根管; 在 CBCT 分辨率为 200 μm 时, 对侧副根管的诊断率为 21.7% (10/46 支)。**结论** CBCT 在 200 μm 分辨率下对下颌第一恒磨牙近中根主根管的形态的诊断具有良好的准确性和重复性, 而对侧副根管的诊断仍显不足; 300 μm 分辨率的 CBCT 对根管系统的诊断准确性、重复性较差。

【关键词】 锥形束 CT 显微 CT 下颌第一恒磨牙 近中根 根管系统

DOI: 10.11752/j.kqcl.2021.02.03

Detection of root canal morphology in the mesial roots of permanent mandibular first molars using CBCT at two different resolutions

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【Abstract】Objective The aim of this study was to evaluate the accuracy of CBCT at different resolutions in diagnosis of root canal anatomy in the mesial roots of permanent mandibular first molars. **Method** A total of 31 extracted mandibular first molars were collected from the dental clinics. Then the teeth were scanned by a CBCT system with resolution of 300 μm and 200 μm , respectively. After that, the teeth were scanned by a micro-CT with resolution of 9 μm and reconstructed three-dimensionally. The root canal morphology of the mesial roots was examined by 2 dental clinicians according to the CT images data from low to high resolution. Each examination was performed twice, with two weeks interval. Kappa index was used to assess intra- and inter-observer agreement and reproducibility. The micro-CT data were regarded as the golden standard, and the accuracy of CBCT in resolution of 300 μm and 200 μm were evaluated. **Results** As the CBCT resolution increased from 300 to

基金项目: 苏州市第九人民医院院级科研项目 (编号: 201725)

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