

不同镍钛根管预备系统对牙本质裂纹形成的影响

熊伯刚¹ 牛光良¹ 柴媛²

(1. 北京市中西医结合医院·北京中医药大学附属中西医结合医院口腔科, 北京 100039;
2. 北京大学口腔医学院·口腔医院材料研究室 口腔数字化医疗技术和材料国家工程实验室
口腔数字医学北京市重点实验室, 北京 100039)

【摘要】目的 探讨不同镍钛旋转预备系统 ProTaper Universal (PU)、ProTaper Next (PN) 和 X+ File(X+)对牙本质微裂纹形成的影响。**方法** 将 100 颗下颌前磨牙随机分为 4 组($n=25$)。组 1 为对照组(不做根管预备); 组 2 为 PU 预备组 (SX 预备根管口, S1、S2、F1、F2 预备直达工作长度); 组 3 为 PN 预备组 (Protaper Universal SX 预备根管口, 再用 ProTaper Next X1、X2 预备直达工作长度)。组 4 为 X+ 预备组 (Protaper Universal SX 预备根管口, 然后用 X+File X1、X2 预备直达工作长度)。预备完成后, 所有离体牙在距根尖顶点 3mm、6mm 和 9mm 处垂直于牙体长轴做横切片, 在根管显微镜下观察并记录裂纹形成情况。卡方检验对裂纹形成数目进行统计分析。**结果** 对照组未产生牙本质裂纹。镍钛旋转系统 PU、PN 和 X+ 的牙本质裂纹发生率分别为 60%, 32% 和 24% ($P<0.05$)。仅 PU 组产生完全裂纹, 且数目高于另外 3 组 ($P<0.05$)。在根尖 1/3 处, PU 组的不完全裂纹数高于另外 3 组 ($P<0.05$)。PN 组和 X+ 组的牙本质裂纹发生率无明显差异($P>0.05$)。**结论** 本研究使用的 3 种镍钛根管预备系统均产生了牙本质裂纹。其中, X+File 与 ProTaper Next 产生的牙本质裂纹较少, 这可能与镍钛金属结构、尖端设计以及中心定位能力有关。

【关键词】 牙本质裂纹 镍钛旋转系统 根管预备

DOI: 10.11752/j.kqcl.2018.04.03

Effects of different nickel-titanium root canal preparation systems on the dentin crack formation

Xiong bogang¹ Niu guangliang¹ Chai yuan²

(1. Department of Stomatology • Beijing hospital of integrated traditional Chinese and western medicine • Beijing university of Chinese medicine affiliated hospital of integrated traditional Chinese and western medicine, Beijing; 2. Beijing key laboratory of oral digital medicine, national engineering laboratory of oral technology and materials, materials research laboratory, stomatology, school of stomatology, Peking University, Beijing 100039)

【Abstract】Objective The effects of different nickel-titanium rotary systems of ProTaper Universal (PU), ProTaper Next (PN) and X+File (X+) on dentin cracks formation were investigated. **Methods** One-hundred mandibular premolars were chosen and divided into 4 groups randomly ($n=25$). Gr 1 was as control group (no preparation); Gr 2 was as PU preparation group (the coronal one-thirds of the canals were prepared with Sx and S1, S2, F1 and F2 instruments were used for the working length); Gr 3 was as PN preparation group (the coronal one-thirds of the canals were prepared with Sx and X1, X2 were used for the working length); Gr 4 was as X+ preparation group (the coronal one-thirds of the canals were prepared with Sx and X1, X2 were used for the working length).

基金资助: 首都卫生发展科研专项项目 (编号: 首发 2014-2-7014)

通信作者: 牛光良, E-mail: newgl@sina.com