纤维树脂桩核系统修复牙根发育不完全牙后抗折强度的分析

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【摘要】 **目的**　通过对经根管治疗后使用玻璃纤维桩核进行修复的牙根发育不完全牙各部位抗折强度的测量比较，以期为临床使用桩核系统修复根尖诱导成形术后的牙降低根折风险提供依据。**方法**　收集符合纳入标准的因正畸需要拔除的根尖发育不完全，根尖孔未形成的第 1、2 前磨牙 45 颗，随机分成 3 组。分别为纤维桩复合树脂水门汀组（实验组）、复合树脂水门汀组（阳性对照组）、根管充填后不作处理组（阴性对照组），每组样本 15 颗，常规桩道预备后用复合树脂和桩核系统进行修复，将修复后的样本牙进行包埋，采用 TY-8000 型电子万能测试机分别测量牙根颈 1/3 和中 1/3 区域的抗折强度，比较经纤维桩核系统修复后牙根不同部位的抗折强度。采用 SAS 软件包对所得数据进行统计学分析。**结果**　实验组的牙根颈部、中部的抗折强度分别为（999±75.40）N 和（799±21.77）N, 阴性对照组分别为（501±38.4）N 和（472±22.98）N，阳性对照组分别为（704±88.39）、（550±20.14）N。实验组的牙根各部位的抗折能力均最强，与阳、阴性对照组均有显著差异（P<0.0001）。**结论**　纤维桩核系统对牙根抗折性能有显著影响，植入纤维树脂桩的牙齿在牙根颈 1/3 和中 1/3 区域都显示出比植入复合树脂粘接材料和仅经根管充填后的牙齿具有更大的抗折强度。

【关键词】 牙根发育不完全牙　纤维桩核系统　抗折强度

DOI：10.11752/j.kqcl.2015.02.07

Effect of fiber resin post systems adaption on the fracture resistance of immature permanent teeth

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【**Abstract**】 **Objective**　The immature teeth were restored with composite resin fiber posts systems, and the fracture resistance at different parts of the immature teeth roots was measured to provide a basis to reduce the risk of root fraction. **Methods**　45 untreated maxillary and mandibular premolar were selected for the study, and randomly assigned to 3 groups, including the test group(1.9mm fiber post + composite resin cement), the positive control (composite resin cement), and the negative control. After RCTs were applied for each tooth, the post spaces were prepared to standard size and restored according to the proposal. The samples were embedded, and the fracture resistance at gingival 1/3 and middle 1/3 of the root were measured. The data was analyzed with SAS6.0 software package. **Results**　In the test group, the average fracture resistances at gingival 1/3 and middle 1/3 were (999±

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