

超声冲洗锉引起牙本质界面微裂的初探

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【摘要】目的 观察超声冲洗锉作用于牙本质界面引起微裂的情况。**方法** 收集牙体完整的离体牙制作 80 片牙本质磨片, 光镜下观察比较 15# 冲洗锉尖分别在不同功率(功率 5 档和 10 档)以及不同工作时间(30s、1min、2min 和 3min)所产生的牙本质微裂的情况。**结果** 在相同功率下, 不同工作时间的超声荡洗引起的牙本质微裂差异无统计学意义($P > 0.05$)。在相同工作时间内, 不同功率的超声荡洗引起的牙本质微裂的差异没有统计学意义($P > 0.05$)。**结论** 在使用冲洗锉行超声荡洗与牙本质面接触时有产生微裂的可能, 在 3min 内、功率 10 以下超声荡洗的功率大小与工作时间对牙本质界面微裂程度无明显差异。

【关键词】 超声冲洗 牙本质微裂 根管治疗

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Study on the effects of ultrasonic irrigation files on dentinal microcrack

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【Abstract】Objective To observe the incidence rate of the dentinal microcrack caused by the ultrasonic irrigation file. **Methods** 80 pieces of dentine were made from the teeth extracted for orthodontics reasons. The dentine pieces were divided into 8 groups according to the time of irrigation (30 seconds, 1 minute, 2 minutes and 3 minutes) and the power of ultrasonic unit (power 5 and power 10). The incidence of microcrack observed by optical microscope were compared and analyzed. **Results** Under the same power, no significant difference was observed in the incidence rates of microcrack caused by ultrasonic irrigation between the different working time groups ($P > 0.05$). And within the same working time, there were no significant differences between the different power groups ($P > 0.05$). **Conclusion** The ultrasonic irrigation files might result in dentinal microcrack, and there were no significant differences in dentinal microcrack between different working time groups and different ultrasonic power groups when setting the power below 10 and within 3 minutes.

【Key words】 Ultrasonic irrigation Dentinal microcrack Root canal treatment

1957 年 Richman 首次提出将超声应用于根管治疗, 但直至 Martin 等人将超声联动的 K 锉用于切削牙本质, 超声才真正首次应用于根管预备^[1]。近年来由于压电原理超声器械的出现, 使得超声

在根管治疗中应用广泛。

以往有较多的研究着重于超声器械在切割效率^[2-3]、冲洗效能^[4]等方面的研究, 研究表明超声预备会引起牙本质微裂的发生^[5]。而牙本质微裂可能成为微渗漏、牙根折裂的原因, 从而导致治

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