

Evaluation of Methods of Drug Release Rate in Root Canal Disinfection Controlled-release Delivery System Containing Metronidazole

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Abstract

Objective: To measure the release rate of drug in controlled-release delivery system containing metronidazole. **Methods:** Drug release tests in vitro, in vivo and through the roots of extracted teeth were performed. The release rate of metronidazole was calculated after 1 day, 3 days, 7 days and 10 days, and the results were statistically analyzed. **Results:** Significant difference was observed among the total drug release rate in vitro, in vivo and through the roots of extracted teeth ($P < 0.01$). There was no statistically significant difference between the release test in vivo and through the roots of extracted teeth in vitro ($P > 0.05$). **Conclusion:** The method of using extracted teeth and the controlled release medium at 37 °C, pH 7.4 was close to the situation in vivo, and it was an effective method to measure the drug release rate of the root canal disinfection controlled-release delivery system.

Key words: root drug controlled-release delivery system release rate

樟脑酚致症状加重一例

蒲志杰

尹某某,女,23岁。因左上后牙持续性疼痛3天就诊。检查:┐远中 面洞,深而大,可见髓室底,探痛(-),叩痛(+),龈不红肿。诊断为:┐急性根尖周炎。处理:┐根管扩大,3%双氧水和生理盐水交替冲洗,干燥,置樟脑酚棉捻。第2天上午复诊,自述治疗当天下午疼痛加重。检查:左侧面部轻度弥漫性肿胀,压痛不明显,开口正常。┐叩痛(++) ,龈不红肿,去放置的樟脑酚棉捻,见棉捻松软,未闻及异味。处理:再次冲洗┐根管并干燥,窝洞内置干棉球,口服螺旋霉素和甲硝唑。第5天复诊,自述治疗后患牙症状缓解较快,现仍有轻度不适。检查见面部肿胀消失,┐叩痛(+),龈不红肿。处理:冲洗并干燥┐根管,再次置樟脑酚棉球。第6天复诊,自述前一天晚上患牙发生明显疼痛,并出现面部肿胀,且左眼发红,视物稍模糊。检查:左眼球结膜轻度充血,

面部及口内情况基本同第2天复诊时。处理:冲洗并干燥┐根管,未发现异物及异味,疑与樟脑酚有关,置丁香油棉球于窝洞。约20分钟后,左眼球结膜充血明显好转,视物清楚,疼痛缓解。患者在两次症状加重过程中,身体其他部位未发现异常变化。

仔细询问病史,知患者对青霉素、磺胺类药、安乃近及酒精等过敏。

根据上述情况,作者认为患者出现症状加重与樟脑酚有关。

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