

Clinical evaluation of two single-file reciprocating techniques

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Abstract

The purpose of the present study was to evaluate the ability of two different single file-reciprocating techniques) to successfully treating 60 lower molar cases (n=30) , with a 1 year follow up : Reciproc Blue (RB, VDW,Germany) vs EdgeOneR (EOR, EdgeEndo, USA). The present study followed the suggestions provided by the recent S3 guidelines edited by the European society of Endodontology, concerning clinical studies on root canal treatment. All cases were performed by the same clinician expert in both techniques, strictly following manufacturers' instructions. Patients were recalled for follow up after one week, 3 months and one year. Data were recorded and statistically analyzed.

Results showed that no statistically significant differences were observed in the distribution of the frequency of reaching the full working length between the EOR (99%), RC Blue (94%), groups ($p > 0.05$). A significant difference was noted in terms of postoperative pain ($p\text{-value} \geq .044$). After 7 days 16 patients from the RB and 10 patients from the EOR group referred moderate/severe pain and assumption of medications, even if no flare up was reported. After one year the survival rate of endodontically treated teeth for both groups was 100% with no statistically significant difference ($p\text{-value} \geq .05$) between them. Radiographic healing was not observed in two cases only (both from RB group. It can be concluded that single file reciprocation is a valid alternative to traditional rotary instrumentation and when combined to proper irrigation and obturation technique can provide excellent outcomes, allowing an efficient, easy and simple shaping procedure in the great majority of cases.

Key words: Nickel-titanium, Reciprocation, Outcome.

Introduction

Nickel-titanium instrumentation has currently become the golden standard for chemio-mechanical preparation of the root canal system by using continuous rotation or reciprocating motions (1-3). Single-file reciprocation technique was developed more than 15 years ago and currently is regaining interest among practitioners thanks to the development of innovative manufacturing processes, which currently produce heat-treated nickel-titanium (NiTi) instruments more flexible and resistant to cyclic fatigue (4-7). These improved mechanical properties are more important when only a single instrument is designed to prepare the root canal, especially in curved and complex

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