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Modern nickel-titanium rotary systems in endodontic treatment

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Abstract

Background: One of the most important steps in endodontic treatment is the preparation of a uniform space, the use of endodontic irrigant and creating space for the endodontic filling. Therefore, improving endodontic treatment techniques is one of the most important tasks of modern dentistry. The success and effectiveness of endodontic treatment is largely determined by the quality of chemo-mechanical root canal treatment. In recent years there has been a major emphasis on the use of rotary mechanical instrumentation systems, namely the use of nickel-titanium (NiTi) alloys, which due to their properties represent a favorable flexibility in the instrumentation of difficult anatomies.

Material and methods: 20 patients were examined and treated. They were divided into 2 groups: for the treatment of 6 patients was applied the Protaper Universal rotary system. In the second group of 14 patients to whom mechanical instrumentation was applied, were 7 patients following the Protaper Next and the other 7 Dc Taper with different pulpal and periodontal diseases.

Results: Mechanical instrumentation was performed on different nosological entities, the prevalence being acute pulpitis. Among instrumented teeth, the prevalence was on the side of pluriradicular teeth.

Conclusions: The practical application of different NiTi rotary systems has to be determined individually, as each clinical case has its own practical properties. But the success of an endodontic treatment depends not only on the rotary instruments used and, on the method, chosen, but also on the practitioner's experience, detailed knowledge of the properties and step-by-step instrumentation protocols.

Key words: nickel-titanium alloy, rotary systems, endodontic instrumentation.

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