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Abstract

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This study aimed at evaluating the antisepsis of the root canal system (RCS) and periapical region (PR) provided by rotary instrumentation associated with chlorhexidine + calcium hydroxide as intracanal medicament. Chronic periapical lesions were induced in 26 pre-molar roots in two dogs. After microbiological sampling, automatic instrumentation using the Profile system and irrigation with 5.25% sodium hypochlorite solution, with a final rinse of 14.3% EDTA followed by profuse irrigation with physiological saline were carried out in 18 root canals. After drying the canals, a paste based on calcium hydroxide associated with a 2% chlorhexidine digluconate solution was placed inside them. After 21 days, the medication was removed, leaving the root canals empty and coronally sealed. After 96 hours, a final microbiological sample was obtained, followed by histomicrobiological processing by the Brown & Brenn method. Eight untreated root canals represented the control group (C-G). Based on the Mann-Whitney test at a confidence level of 5% ($p < 0.05$), the procedures of antisepsis used offered significant efficacy ($p < 0.05$) resulting in 100.0% of the canals free of microorganisms. In the C-G, an elevated incidence of various microbial morphotypes was confirmed in all sites of the RCS, with the presence of microbial colonies in the periapical region. In contrast, the experimental group showed a similar pattern of infection in the RCS, although less intense and a reduced level of periapical infection ($p < 0.05$). It was concluded that adequate instrumentation followed by the application of calcium hydroxide + chlorhexidine offered significant elimination of microorganisms.

Keywords : Endodontics; Microbiology; Calcium hydroxide; Chlorhexidine.

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