

INFLUENCE OF CAST POST REMOVAL PROCEDURES ON ROOT DENTIN DEFECTS FORMATION

Ana Vitória Silva¹
Helder Fernandes de Oliveira²
Orlando Aguirre Guedes³

To evaluate the influence of cast post removal procedures on root dentin defects formation. One hundred and twenty bovine incisors were sectioned 15 mm from their apices and divided into one control and five experimental groups. Twenty roots served as the control group and were left unprepared, while the other 100 teeth were submitted to the following procedures: root canal instrumentation (Group 1), root canal filling (Group 2), root canal preparation for cast post (Group 3) and cast post removal with ultrasound (Group 4) and cast post removal with carbide bur (Group 5). A 10-mm post space was prepared in each root using #1-4 Largo drills. The cast post and core patterns were made by using a direct technique and the posts were cemented with zinc phosphate cement. At the end of each operative stage the roots were horizontally sectioned at 3, 6 and 9 mm from the apex and viewed through a stereoscopic microscope at 25X magnification. The slices were inspected, and the absence/presence of root fractures and other defects (partial crack and craze lines) registered. Data were analyzed by analysis of variance followed by the Tukey post hoc test at a significance level of $P < .05$. No defects were observed in the control group. A high incidence of cracks was observed in the only instrumented (Group 1) and in the instrumented and filled groups (Group 2), while root fractures were commonly identified in the instrumented and filled (Group 2) and cast post removed by ultrasound (Group 4) groups ($P < 0,05$). More defects were observed in 9 mm sections. Root canal and rehabilitation procedures had a significant impact on root dentin formation.

Keywords: root canal instrumentation; cast post removal; ultrasound; dentin defects.

¹ Acadêmica do Curso de Odontologia, Universidade Evangélica de Goiás - UniEVANGÉLICA, E-mail: orlandoaguedes@gmail.com

² Professor do Programa de Pós-Graduação em Odontologia, Universidade Evangélica de Goiás - UniEVANGÉLICA, E-mail: helfo22@gmail.com

³ Professor do Programa de Pós-Graduação em Odontologia, Universidade Evangélica de Goiás - UniEVANGÉLICA, E-mail: orlandoaguedes@gmail.com