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Bioceramics as an innovative savior for perforation repair

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Purpose: The purpose of this study is to compare the effect of two bioactive bioceramic materials on the repair of furcation perforation.

Materials & Methods: Ninety-six teeth in 6 dogs were divided into two main groups according to the time of repair; immediate and delayed (one month). Each group was divided into three subgroups according to the evaluation period; one, two and three months. Each subgroup was further divided into two subgroups according to the material used; Biodentine and MTA (mineral trioxide aggregate). Each subgroup was evaluated radiographically to assess bone change percentage, histologically to assess the inflammatory cell count and immunohistochemically to assess the hard tissue formation. Data were analyzed using ANOVA and Tukey's test.

Results: The evidence of new hard tissue was noticed with no significant difference between Biodentine and MTA ($P=0.523$), both found with highest deposition of hard tissue. Time of repair and the evaluation period showed statistical significant effect on the bone change percentage, the inflammatory cell count and the hard tissue formation.

Conclusions: Furcation perforation has poorer prognosis if the perforation site is not immediately repaired. New hard tissue prevalence increased throughout the evaluation periods. Both tested materials; Biodentine and MTA promote hard tissue formation.

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