عنوان مقاله:

Direct pulp capping with autologous bone marrow derived stem cells in dogs

محل انتشار:

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خلاصه مقاله:

Bone-marrow derived stem cells (BMSCs) can differentiate into several mesenchymal cell lines and are suitable candidates for bone and dental tissue engineering. This study aimed to assess the efficacy of cell therapy in direct pulp capping (DPC) of canine teeth using autologous BMSCs along with collagen/hydroxyapatite hybrid scaffold in terms of the quantity and quality of calcified bridge formation. The teeth were randomly divided into three groups of DPC with mineral trioxide aggregate (MTA), hydroxyapatite/collagen hybrid scaffold alone and BMSCs with hydroxyapatite/collagen hybrid scaffold; DPC was performed under general anesthesia in cavities prepared on the buccal surfaces of mandibular and maxillary premolars of the same dogs from which, stem cells had been isolated. All cavities were then restored with light-cure resin modified glass ionomer cement. Histomorphometric assessments after ۱۲ weeks showed formation of dentinal bridge following DPC with BMSCs and MTA. The efficacy of MTA for calcified bridge formation following DPC was significantly higher than that of BMSCs plus hybrid scaffold (P<۰.۰۰۰۱). According to present study, we concluded DPC using BMSCs and hybrid scaffold does not provide clinically noticeable results in .canine patients

کلمات کلیدی:

Canine teeth, Bone marrow derived stem cells, Pulp/dentin regeneration, Vital pulp therapy