

# 26<sup>TH</sup> AMERICAN DENTAL CONGRESS

September 18-20, 2017 Philadelphia, USA

## Evaluation of reparative dentin formation of Pro root MTA, Bio-dentine and Bio-Aggregate using micro-CT and immunohistochemistry

**Noha abdullah Alenezi**

Al-Farabi College for Dentistry and Nursing, Saudi Arabia

**Objectives:** The purpose of this study was to assess the ability of two new calcium silicate-based pulp-capping materials (Biodentine and BioAggregate) to induce healing in a rat pulp injury model and to compare them with mineral trioxide aggregate (MTA).

**Materials and Methods:** Eighteen rats were anesthetized, cavities were prepared and the pulp was capped with either of ProRoot MTA, Biodentine, or BioAggregate. The specimens were scanned using a high-resolution micro-computed tomography (micro-CT) system and were prepared and evaluated histologically and immune-histochemically using dentin sialoprotein (DSP).

**Results:** On micro-CT analysis, the ProRoot MTA and Biodentine groups showed significantly thicker hard tissue formation ( $p < 0.05$ ). On H&E staining, ProRoot MTA showed complete dentin bridge formation with normal pulpal histology. In the Biodentine and BioAggregate groups, a thick, homogeneous hard tissue barrier was observed. The ProRoot MTA specimens showed strong immunopositive reaction for DSP.

**Conclusions:** Results suggest that calcium silicate-based pulp-capping materials induce favorable effects on reparative processes during vital pulp therapy and that both Biodentine and BioAggregate could be considered as alternatives to ProRoot MTA.

aanoooh@hotmail.com

Notes: