

**OUTCOMES OF DIRECT PULP CAPPING DONE BY DEFERENT MATERIALS IN PERMANENT TEETH: AFTER 1 YEAR RECALL**

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**Abstract**

**Aim:** This study is aimed to compare the prognosis between deferent direct pulp capping materials (CH, MTA, and Biodentine) in permanent teeth of Saudi population after the 1-year recall.

**Methods:** Randomized patient samples were collected in armed forces hospital – dental department included 72 patients between 18 and 40 years old. They were divided into 3 groups according to the materials of direct pulp capping (CH 24patients), (Biodentine 24 patients), or (mineral trioxide aggregate [MTA] 24 patients). After one year recall, the patients were diagnosed clinically and radiographically using the Fisher exact test.

**Results:** No clear deference were detected between CH, MTA, and biodentine in terms of failure of the total of 72 teeth, only 2 recorded failures, 1 of each group(CH, MTA) except dentine.

CH : 1:24

MTA : 1:24

Biodentine : 0:24

Biodentine has no inflammatory pulpal response compared to CH and MTA .

**Conclusion:** This study shows no significant difference between the deferent types of direct pulp capping materials. biodentine shows better properties in direct pulp capping compared to CH and MTA and has no failure cases recorded.

**Keywords:** Biodentine, Direct pulp capping, mineral trioxide aggregate

**Introduction:**

The importance of direct pulp capping lies in keeps pulp vitality and function, formation secondary biodentine and preventing the breakdown of the peri-radicular supporting tissues.

So, the success of direct pulp capping is leading to avoid extensive treatment like RCT or extraction (1, 2, 3).

There are more than 5 materials of direct pulp capping, in this study, we compared between 3 materials (CH, MTA, Biodentine).

Calcium hydroxide is the most direct pulp capping agent (4) because it has antibacterial property and the ability to stimulate pulp repair and dentine remineralization (5,6,7).

Mineral trioxide aggregate is composed of calcium oxide, tricalcium silicate, dicalcium silicate and tricalcium aluminate which mixed in sterile water in 3:1 powder to liquid ratio. Beside the water, CH is the main reaction product of MTA (8). MTA show more effective than CH in pulp capping (9, 10, 11, 12).

Biodentine is a new class of dental material with excellent biocompatibility can form reactionary dentine when used in direct pulp capping, which introduced by glyptodont (13).

This study is aimed to compare the prognosis between deferent direct pulp capping materials (CH, MTA, and Biodentine) in permanent teeth of Saudi population after the 1-year recall.

#### Methods:

Randomized patient samples were collected in armed forces hospital – dental department included 72 patients between 18 and 40 years old. they were divided into 3 groups according to the materials of direct pulp capping (CH 24patients),( Biodentine 24 patients), or ( mineral trioxide aggregate [MTA]24 patients) . after one year recall, the patients were diagnosed clinically and radiographically using the Fisher exact test.

#### Results :

No clear difference was detected between CH, MTA, and biodentine in terms of failure of the total of 72 teeth, only 2 recorded failures, and 1 of each group (CH, MTA) except biodentine.

- CH : 1:24
- MTA : 1:24
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Biodentine has no inflammatory pulpal response compared to CH and MTA.

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