

Direct pulp capping treatment with calcium hydroxide in the pre-doctoral student clinic

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I. Introduction

Removal of deep caries often leads to pulp exposure even in asymptomatic teeth. We have to choose a procedure for the exposed pulp; Root canal treatment (RCT) or direct pulp capping. Direct pulp capping can save time and cost for endodontic treatment. Also, it enables to keep the vitality of the tooth. Direct pulp capping is indicated when mechanical exposure of a clinically vital and asymptomatic pulp occurs and bleeding is controlled at the exposure site and exposure occurs when the tooth is under dental dam isolation. Direct pulp capping is suitable procedure for the two cases.

II. Case report

Case 1.

1. Sex/age: Female/11
2. Chief Complaint: 'I'd like to check-up my teeth.' (No pain history)
3. Past Medical/Dental history: N-S
4. Present illness: Mob(-), Per(-), Ice(+) on #21, with Proximal dental caries (distal)
Mob(-), Per(-), Ice(+) on #22, with Proximal dental caries (mesial)
5. Diagnosis: #21, 22
 - Proximal dental caries
 - with normal pulp
 - with normal apical tissue of the tooth
6. Treatment plan: Direct resin filling (Class III)
 - ** In case of pulp exposure: RCT or Direct pulp capping

Case 2.

1. Sex/age: Male/20
2. Chief Complaint: 'I'd like to check-up my teeth and scaling.' (No pain history)
3. Past Medical/Dental history: N-S
4. Present illness: Mob(-), Per(-), Ice(+) on #15, with Proximal dental caries (Mesial, Distal)
5. Diagnosis: #15
 - Proximal dental caries
 - with normal pulp
 - with normal apical tissue of the tooth
6. Treatment plan: Resin filling (Class II, M & D)
 - ** In case of pulp exposure : RCT or Direct pulp capping

III. Conclusion

Materials used for pulp capping are calcium hydroxide (CH) and MTA (mineral trioxide aggregate). The success rate of MTA direct pulp capping is higher than CH direct capping. MTA direct pulp capping shows less pulpal inflammatory response. Also it is more predictable in hard dentin bridge formation. However, CH direct pulp capping is time and cost efficient and handling is easier than MTA capping. Furthermore, coronal discoloration potential of capping materials is lower when using CH. Calcium hydroxide and MTA can be used for direct pulp capping materials. In the pre-doctoral student clinic, calcium hydroxide can be a first choice of direct pulp capping materials.

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