

Protection of permanent molars with fissure sealant.

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Especially in paediatric patients with a high risk of caries the use of fissure sealants can be an effective method of caries prevention [1]. By sealing the enamel pits and fissures on the occlusal surfaces of permanent molars with a resin-based material, an impermeable barrier is created between the enamel and the oral environment. The risk of caries development in the particularly vulnerable parts of molar teeth is reduced significantly.

Since the retention of sealants is better on sound enamel than on questionably carious tooth surfaces [2], we use to seal permanent molars of children who are likely to develop caries a short time after the complete eruption of the teeth. For the first molars the treatment is usually carried out at the age of six to seven. The procedure is explained by means of the following patient case.

Clinical case

The seven-year-old female patient presented in our practice for paediatric dentistry for one of her regular check-ups and prevention appointments after her permanent maxillary and mandibular first molars had erupted. Due to her high caries risk we decided to seal the fissures with 3M™ Clinpro™ Sealant.



Figure 1: Initial situation: Mandibular right first molar after the placement of rubber dam.



Figure 2 : A rose-head bur is used for fissure preparation: The fissures are opened slightly and the surface is cleaned.



Figure 3 : Alternatively 3MTM ClinproTM Prophy Powder can be applied to the tooth surface with an air-polishing device to create a clean surface, followed by rinsing with water.

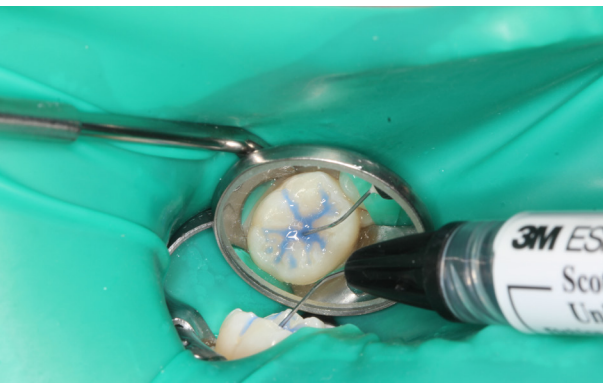


Figure 4 : Application of 3MTM ScotchbondTM Universal Etchant on the enamel surfaces to be sealed. The etchant should be removed after 15 to 60 seconds. Here the exposure time was 20 seconds.



Figure 5 : Situation after removal of the etchant with water and subsequent air-drying.



Figure 6 : Dispensing of 3MTM ClinproTM Sealant into the pits and fissures of the molar. The pink colour ensures clear visibility and precise control over the location and amount of sealant placed.



Figure 7 : Result: After light-curing the sealant appears white. It provides a barrier that protects the vulnerable occlusal surface from plaque adhesion. For optimal results, the use of a fluoride containing varnish is recommended.

Résumé

The described procedure is a quick and effective way of reducing the caries risk in paediatric patients. In order to provide for durable results, the quality of the sealant layer should be assessed on a regular basis and replaced if necessary [3].

References

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[3] Mejare I, Lingstrom P, Petersson L, Holm AK, Twetman S, Kallestal C, et al. Caries preventive effect of fissure sealants: a systematic review. Acta Odontol Scand 2003;61(6):321-30.



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