

TIPS FROM OUR READERS

Functionally generated path technique to fabricate a crown in group function on a deciduous maxillary canine



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The accurate fabrication of a restoration in group function is challenging because an articulator cannot accurately simulate the simultaneous dental contacts during all eccentric mandibular movements.¹ However, group function was indicated for the restoration of a maxillary deciduous canine in a 45-year-old patient in which the lateral incisor and the first premolar provided mandibular guidance. Canine guidance alone was contraindicated because of the minimal support offered by the deciduous canine (Fig. 1). Cone beam computed tomography indicated that the included canine did not affect the lateral incisor.

A functionally generated path (FGP) record as described by Meyer² and DuVall and Rogers³ was used to replicate the mandibular functional excursions guided by the teeth adjacent to the prepared tooth.

PROCEDURE

1. Provide a conservative complete crown preparation for the maxillary deciduous canine.
2. Make maxillary (Impregum Penta Soft; 3M ESPE) and mandibular (Hydrogum 5; Zhermack) impressions.
3. Record the occlusion in maximum intercuspal position (Dental Wax; Moyco Union Broach).
4. Adapt a rigid resin support (Unifast TRAD; GC) to the prepared tooth.
5. Add soft wax (Cire molle ESVÉ; Prodont-Holliger) to the resin support.
6. Record all eccentric mandibular excursions in the soft wax. Ensure occlusal contact is maintained during the movements (Fig. 2).



Figure 1. Deciduous maxillary canine in working excursion.



Figure 2. Functionally generated path wax recording in working excursion.

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Figure 3. Quick-setting plaster adapted to wax record and occlusal surfaces of adjacent teeth.



Figure 4. Definitive cast articulated with functionally generated path cast.



Figure 5. Definitive restoration on deciduous maxillary canine. A, In working movement. B, Radiograph.

7. Adapt quick-setting plaster (Snow White Plaster; Kerr Corp) to the wax record as well as the occlusal surfaces of the adjacent teeth (Fig. 3).
8. In the laboratory, mount the definitive cast to both the anatomic mandibular cast and the FGP cast on an articulator (SAM 2P; SAM Präzisionstechnik) (Fig. 4).
9. Make the crown with the FGP cast in direct contact with the area where group function is to be developed.
10. Evaluate and cement the crown, ensuring the accuracy of the static and dynamic occlusal contact relationships (Fig. 5).

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