Temporaries: Perfect provisional restorations

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Temporaries are indeed only an interim solution. They do, however, fulfil important functions until the permanent restorative is available and thus have a lasting effect on the success of the treatment in restorative dentistry.

The quality of the temporary restorations has great importance with respect to their protective function until the integration of the permanent restoration. Temporary crowns and bridges combined with luting cements protect the dentine and pulp from thermal, chemical, mechanical and bacterial damage. Today, modern temporary crown-and-bridge materials facilitate the fabrication of temporary restorations that meet the highest medical standards of reliability and provide incredible, natural aesthetics.

The challenge of fabricating temporaries

The fabrication of temporary crowns and bridges that provide an accurate fit is not easy. Much effort goes into it, as building a perfectly integrated protection for the prepared abutment requires extreme precision. For the clinical success of a temporary, there are several aspects of the fabrication to consider.

One such aspect is the quality of the marginal seal; the temporary must sufficiently close the preparation border so that the patient does not suffer from sensitivity. Additionally, care must be given to provide a consistent occlusion and appropriate contact points to the neighbouring teeth; ultimately, the teeth should not wander until the definitive restoration is inserted.
The temporary should also be easy to polish and exhibit good surface quality in the interdental and region of the crown boundary. The gingiva is already irritated from the preparation and shaping and should not become infected and retract because of a temporary’s rough edge. Owing to these requirements, materials for the fabrication of temporaries should not only permit safe and quick handling, but also facilitate an optimal medical and aesthetic result.

_The clinical case_

A female patient presented who had to have her maxillary anterior teeth removed and a bridge had to be prepared for her. The initial situation showed that teeth 11, 21 and 22 could not be preserved (Fig. 1). Normally, we would extract the teeth, insert a removable temporary (or an expensive one made by a laboratory) and prepare accordingly, after the post-extraction alveoli have healed. This procedure, however, is accompanied by the problem that the pontics are always recognised as such, as there is no emergence profile or papilla formation typical of the natural tooth.

In contrast, a procedure is used in the following case that permits the fabrication of a bridge with the most naturally appearing bridge pontic area possible. To begin with, a plaster model is fabricated for making a formed component for the long-term temporary (Fig. 2). After the preparation and extraction of the teeth to be removed, we went with the fabrication of a long-term temporary with pontics for the formation of the alveoli, for which we use the post-extraction alveoli (Fig. 3). In this manner, the emergence profile of the bridge pontics could be made so that it appears that they are emerging from the gingiva and thus have the appearance of natural teeth (keyword ‘red aesthetics’).

We used a deep-drawn miniplast splint made from a soft foil for the impression and processed it with an instrument especially for this purpose from the preparation kit (Komet; Fig. 4). The shaped piece offers the advantage that it is not sensitive to external influences (shrinkage etc.), can be stored longer and is more hygienic than a precast.

In the next work step, the mould was filled with a highly aesthetic provisional crown-and-bridge material (Structur Premium, VOCO; Figs. 5a & b). The quality of the margin was assessed after removing the temporary bridge from the formed component (Fig. 6). The temporary was subsequently finished with tools from the preparation kit. First, a one-sided sandpaper disc was used for rough finishing (Fig. 7), followed by the smooth finishing of the edges with a cross-cut carbide bur (Fig. 8). We segmented the pontics with the diamond disc from the finishing set (Fig. 9) and used a rubber cup for the pre-polish on the temporary (Fig. 10). Small irregularities or defects (‘bubbles’) were corrected with Structur Premium QM in incisal shade (Figs. 11a & b).

We carried out the subsequent high-gloss polish with the equally fast and effective fibre-buffing disc (Fig. 12). For a perfect finish, we applied a nano-filled protective varnish to seal the surface (Easy Glaze, VOCO; Figs. 13a & b), which we light-cured afterwards (Fig. 14). The protective varnish provides a
naturally shiny, smooth and aesthetic surface that protects against more than just discoloration.

A smooth surface is especially important for the pontics that rest on the alveoli, in order to prevent plaque retention and the potential resulting inflammation (Fig. 15). The completed long-term temporary was finally integrated (Fig. 16). It created an ideal initial situation for an aesthetic emergence profile for the future pontics (Fig. 17).

Billing for the long-term temporary

In contrast to a removable long-term temporary, a fixed long-term temporary is not covered by insurance. My patients gladly pay the difference, however, because of the increase in comfort. This is especially the case when I describe the positive aesthetic results to them.

Successful creation of durable long-term temporaries is ensured with the provisional crown-and-bridge material I used here. Structur Premium is not just for long-term temporaries, it is also my first choice for fabricating ordinary, routine temporaries.

Fig. 11b, Structur Premium QM: highly aesthetic provisional crown-and-bridge material in incisal shade. The QuickMix syringe permits perfect handling and exact application.

Fig. 12, High-gloss polish with the fibre-buffing disc.

Fig. 13a, A protective varnish (Easy Glaze) is applied for the perfect finish.

Fig. 13b, Easy Glaze: nano-filled, light-curing protective varnish for surface sealing.

Fig. 14, Light-curing the protective varnish.

Fig. 15, A smooth surface on the pontics is especially important for the alveoli because the temporary will rest on them.

Fig. 16, The finished long-term temporary.

Fig. 17, The integration of the temporary created an ideal initial situation for an aesthetic emergence profile for the future pontics.

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