

Bridge design, part six: cantilever bridgework

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In the sixth installment of his series, Paul Tipton examines a conservative but successful form of bridgework - anterior and posterior cantilevers

Schwartz's study of 1970 showed the cantilever bridge and anterior six unit fixed-fixed bridge to be the longest surviving bridges. Cantilever bridgework is often more conservative and less costly to the patient as fewer teeth are involved in the restoration. This paper now describes cantilever bridge design criteria.

ANTERIOR CANTILEVERS

One of the most successful types of bridge design has been the two-unit cantilevered bridge, one pontic being retained by one abutment tooth. This design is often the choice when using a canine tooth as the only abutment to replace a missing lateral incisor (Figures 1 & 2). The advantages of this type of bridge design are shown in Table 1.

Anterior cantilever bridgework replacing a single incisor can be more widely used than the traditional canine/lateral incisor combination as it is very simple and conservative. Cantilevering a lateral incisor from a central incisor, or central incisor from another central incisor are simple restorative procedures as long as the occlusal scheme is properly organised (Figures 3 to 5).

OCCCLUSION

Both pontic and abutment tooth should have intercuspal contacts (the pontic having a light holding contact), but only the abutment tooth and neighbouring natural teeth should provide any lateral or protrusive guidance. There should be no guidance on the pontic reducing the likelihood of rotational forces over-stressing the abutment tooth and leading to orthodontic movement with loss of contact point and aesthetics (Figure 6). The biting force anteriorly has been shown to be much less than the biting force posteriorly (Lundgren & Laurell, 1986) reduc-

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TABLE 1 - ADVANTAGES OF A TWO UNIT CANTILEVER BRIDGE

- A conservative approach, as only one tooth requires preparation.
- Reduced cost due to reduced preparation time in surgery.
- Lower material and laboratory costs.
- Improved aesthetics, as less labial surfaces require porcelain restoration.
- Less teeth for failure to occur on

ing further the stress on anterior cantilever loading. The retainer of choice is usually the full crown preparation for aesthetics, but when aesthetic demands are not a requirement the three-quarter crown should also be considered (Roberts, 1970) or the adhesive wing (Maryland) with preparation (Burgess 1989).

Figure 1: Missing lateral incisor

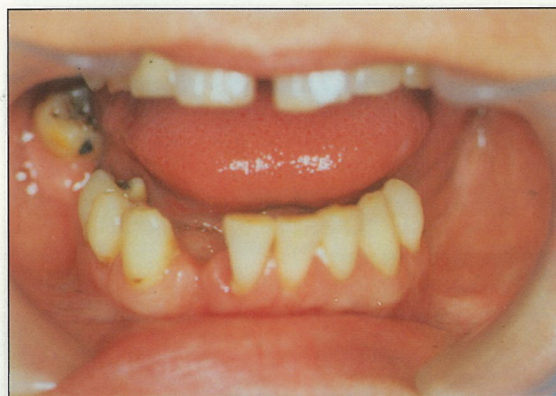


Figure 2: Single cantilever bridge, lateral incisor from a canine

