

All Ceramic Resin Bonded Fixed Partial Denture (RBFDP): One or Two-Wings?

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Short Communication

The technique of bonded bridges was introduced in dentistry by Rochette in 1963. It was the first type of minimally-invasive fixed prosthesis [1,2]. Its principle consists in bonding a metal frame on the teeth adjacent to the edentulous area. These bonded bridges have experienced significant development from their conception to the present [3,4]. Initially, these restorations failed through frequent debond caused by the absence of tooth preparation, very attractive in the early years. In fact, bonding cannot replace the retention or resistance to occlusal forces (loosening and shear) provided by the preparations. Nowadays, it is widely accepted that a minimal preparation of the supporting teeth is essential to ensure the sustainability of the bonded prosthesis. A careful case selection is important to predict esthetic and functional restoration with medium or long-term survival. Abutments should be vital and aligned showing sufficient enamel available for bonding and should coronal length which is favorable for retention [5].

Conventional or Cantilevered ?

The bonded cantilever bridge is an efficient minimally invasive treatment of the anterior missing teeth [6] It is also a suitable alternative to replace conventional bonded bridges [7] with very low biological complications and satisfactory results in the medium and long term [8] This could be explained by the following points:

- a) The results of follow-up tests indicated that the bridges bonded to three elements have failure rates lower than wider fixed partial denture.
- b) If selecting a conventional resin bonded bridge, both abutments should have the same mobility, otherwise the weakest may detach from the enamel, compromising the entire restoration. Furthermore, using a single cantilever eliminates the differential bond strength due to differing size and mobility of abutments

c) Two-retainers bonded bridges showed practical problems such as finding a common axis of insertion when respecting the principle of minimally invasive preparation.

d) a cantilevered prosthesis has a reduced biological and financial cost, is easier to prepare, and simplifies impression procedure and cementation over a three-unit design. In addition, a single retainer is usually preferred as debonding will be quickly observed [9].

e) The increase of the adhesion surface must be preferably carried out on a single tooth, respectively number reduced tooth adjacent abutments in the edentulous ridge [10].

f) Favorable clinical monitoring results of resin bonded bridges with two or even a single wing. According to Kaplan-Meier survival estimates showed no significant difference between the survival rate of the conventional ones (63%) and cantilevered ones (81%) after 4 years [9].

g) However, The study of Kern, showed that cantilever all-ceramic resin-bonded fixed partial dentures made from high-strength oxide ceramics present a promising treatment alternative to two-retainer RBFDPs. On the other hand, the conventional adhesive bridge remain suitable for some situation such as, After orthodontic, because of its double function as a fixed orthodontic retainer [11].

Conclusion

RBFDPs can be used successfully in both the anterior and posterior areas to replace 1 or 2 missing teeth. However, the survival rate this minimally-invasive restoration is still considerably less than that of conventional bridges. The principle reason for failure is de-bonding of the framework from the abutment teeth. The use of cantilevered and nonrigid attachments may decrease inter-

abutment forces and reduce debonding. A careful case indication, the selection of non-mobile abutment teeth, preparation designs that enhance retention and resistance form, appropriate material selection and bonding technique are critical for success and longevity.

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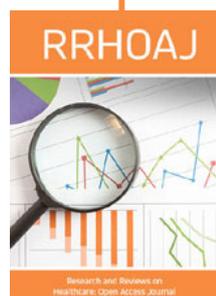
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