



Conventional Vs. Resin bonded prostheses

Various treatment modalities are available today for replacement of missing teeth. It is mandatory to offer the best possible treatment option suitable to the patient on our part as a Prosthodontist. Replacement of a single missing tooth with conventional fixed partial dentures (FPDs) has called for much criticism in the recent past. Resin-bonded FPDs for replacement of a single missing tooth has been used for many years now and their greatest advantage being the minimum preparation of the abutment tooth. Since the time the Rochette introduced them in 1973, resin-bonded FPDs have had a variable popularity. The advent of electrolytic etching of metal surface to provide micromechanical retention for metal adhesion to enamel was indeed a breakthrough in prosthodontics.

The Rochette Bridge achieved mechanical retention by the use of cast-perforated metal retainers bonded to abutment teeth and Virginia bridges through macroscopic mechanical retention as compared to the micromechanical retention that is used today.

Macroscopic mechanical undercuts on the inner surface of the FPD retainers were developed at the Virginia Commonwealth University School and were called Virginia bridges.

Though debonding has been a menace, over a period of time, the development of improved adhesive materials and the preparation modification of the abutment teeth to gain mechanical retention techniques have added to their success. However, clinical observations have revealed that resin-bonded FPDs for posterior tooth replacement is less retentive than anterior tooth replacement.^[1]

A 5 year multi-practice study on posterior RBBs concluded that the preparation of grooves in abutment teeth for posterior RBBs is beneficial to their chance of survival.^[2]

RBBs placed in the maxilla have a better prognosis than those made in the mandible. Clinical data on the efficacy of RBBs have been published time again. A Meta analysis was performed^[1] that revealed a survival of 74% after 4 years.

Since the meta-analysis failed to provide the appropriate information about the influence of the therapeutic and

patient-related variables, data from separate clinical trials are still needed.

A recent two-year clinical trial of resin-bonded FPDs incorporated novel attachments (the system involved two attachment matrices inserted and bonded to small pin preparations and the mesial and distal proximal surfaces of the two abutment teeth).^[3]

Retention, marginal integrity, periodontal conditions of the FPDs, esthetics and hygiene of pontics and secondary caries were clinically evaluated. The performance of resin-bonded FPDs was compared with the performance of conventional FPDs. Within the limits of this study there was no statistically significant difference between the two.

Hence, resin-bonded FPDs where minimal tooth preparation is essential, may be used to replace single tooth with little influence on health of pulp and periodontal tissues.

RBB's have made a complete circle from the time they were looked upon with much cynicism in comparison to the conventional FPDs that had stood the test of time. The optimistic argument by the proponents of RBB is the ability to restore the tooth with conventional prostheses should a problem arise.

With the advantage of conservation of tooth structure and better survival rate, we can safely say that resin-bonded prostheses are here to stay!!!

REFERENCES

1. Creugers NH, Kayser AF, Van't Hof MA. A seven and half year survival study of resin bonded bridges. *J Dent Res* 1992;71:1822-5.
2. De Kanter RJ, Creugers NH, Verzijden CW, Van't Hof MA. A five year multi-practice clinical study on posterior resin bonded bridges. *J Dent Res* 1998;77:609-14.
3. Jiang T, Hong W, Zhang Q. Two year clinical trial of resin bonded fixed partial dentures incorporating novel attachments. *Int J Prosthodont* 2005;18:225-31.

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