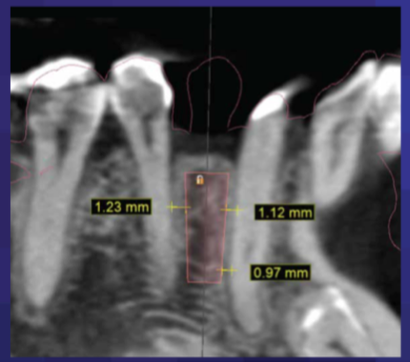
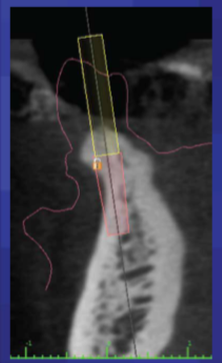
Posterior Cantilevered Resin-bonded Fixed Partial Denture as an Alternative to Implant Restoration

LCDR Krystal H. Burns, DC, USN
Naval Postgraduate Dental School
Uniformed Services University of the Health Sciences
Bethesda, Maryland

WHEN IMPLANTS ARE NOT POSSIBLE

Not always possible due to:
- Anatomical Constraints
- Grafting not feasible
  - Financial
  - Medical comorbidities





OTHER OPTIONS

Removable Partial Denture
- Impractical for single tooth

Conventional Fixed Partial Denture
- Preparations remove 63-73% of tooth structure

Resin-Bonded Fixed Partial Denture
- Preparations more conservative
- Zirconia single retainer RB-FPDs show promise
- Location: Anterior vs. Posterior?

DESIGN CONSIDERATIONS

Location: Incisors, Premolars?

Preparation:
- Inlay, Onlay, or Veneer
- Shown to withstand loads within the critical range of maximal loads during mastication

Connector Dimension ≥ 9mm²

TREATING ZIRCONIA AND THE TOOTH

Zirconia
- Air particle abrade - Al_2O_3
- Primer –MDP

Tooth
- Etch - H3PO4

Bond
- Resin cement

DELIVERY AND OCCLUSION

Contacts
- MIP (Light)
- Excursive (None)

Ensure Cleansability

REFERENCES

Kern M. Clinical long-term survival of two-retainer and single-retainer all-ceramic resin-bonded fixed partial dentures. Quintessence Int. 2005 Feb;36(2):141-7.

Kern M, Sasse M. Ten-year survival of anterior all-ceramic resin-bonded fixed dental prostheses. J Adhes Dent. 2011 Oct;13(5):407-10.

Sailer I, Bonani T, Brodbeck U, Hämmerle CH. Retrospective clinical study of single-retainer cantilever anterior and posterior glass-ceramic resin-bonded fixed dental prostheses at a mean follow-up of 6 years. Int J Prosthodont. 2013 Sep-Oct;26(5):443-50.

Shahin R, Tannous F, Kern M. Inlay-retained cantilever fixed dental prostheses to substitute a single premolar: impact of zirconia framework design after dynamic loading. Eur J Oral Sci. 2014 Aug;122(4):310-6

The views expressed in this table clinic are those of the author and do not necessarily reflect the official policy or position of the Department of the Navy, Department of Defense, or the U.S. Government