2015 ‘Hands-on’ Tooth Preparation Course
Teachers / Demonstrators: Peter Briggs & Raj Dubal 18th September 2015

Anterior Tooth Preparation Course for Dental Foundation Trainees - SGH Simulation Centre
Task 2 - DRBCC

Dentine Resin Bonded Ceramic Crown

- Convergence: 15-20°
- Taper: 1.0-1.5mm
- Occlusal Reduction: 1.0-1.5mm
- Axial Reduction: 0.5-1.0mm
- Heavy Chamfer
Resin (Dentine) Bonded Crown Preparation – can easily convert a labial ceramic veneer preparation into a DRBCC preparation
Tooth Destruction

INDIRECT COMPOSITE

DBC

PJC
Aesthetic restorations looking good comes at a biological price

DBC prep = 63% off tooth
PFM prep = 72% off tooth
PFM prep 20% > FGC prep
PFM prep x5 > Porcelain veneer (feathered) x3 > Porcelain veneer (butt joint)


Dentine Resin-Bonded Ceramic Crown Preparation

360° Heavy Veneer Preparation – but no undercuts can be allowed
DRBCC Preparation

- **Margin** (supra-gingival): 0.5 - 0.7mm consistent circumferential depth
- **3D tooth reduction** of 0.5 - 0.7mm in all dimensions
- **1mm** inter-occlusal space palatal clearance with **rugby ball burs**
- **Taper of all walls:** 8 - 10°
Rounded Contours

No Undercuts

PB
Convergence Taper
15 - 20°

Axial Reduction
0.5 - 0.7mm

Occlusal Reduction
1.0 mm

Heavy Chamfer

Dentine Resin Bonded Ceramic Crown
DRBCC Preparation

• ‘Ceramic-Veneer’ concept around the whole tooth
• Adhere hopefully to a good amount of enamel (as well as dentine)
• Can use with one or two stage Dahl
• Need significant convergence taper as neo-parallel will threaten # of crown on seating / cementing
• Most feel less tooth tissue removed – however you will be surprised!
Note the difference - in my view it is much more destructive palatally than a PFM.
Burke (2007)
– DBC 6% failure at mean of 3.9 years –

Four year performance of dentine-bonded all-ceramic crowns
F. J. T. Burke

- 48 dentine-bonded crowns evaluated at four years.
- 6% failure, one crown failing due to fracture, two because of cracks.
- Nil incidence of pulp problems, minimal incidence of debonding.
- Denture bonded crowns may be considered suitable for a variety of indications on anterior teeth.

Aim This paper reports a prospective evaluation of 59 dentine-bonded crowns placed in a dental school environment for patients, a majority of whom were suffering from tooth substance loss.

Results Forty-eight crowns (83%) were available for examination, with their mean age since placement being 3.9 years. The mean age of the patients in whom the crowns were placed was 37.5 years. Three crowns had failed due to porcelain fractures, an overall failure rate of 6%. Two of the failures were minimal cracks of which the patient was unaware, and one, in an upper premolar tooth, because of crown fracture. No secondary caries was noted, incidence of pulp symptoms or pulp death was nil, and margins were rated as ‘excellent’ in 42 crowns (86%).

Conclusion The dentine-bonded crowns assessed in this study showed excellent retention and low incidence of fracture at four years. This technique would appear to be suitable for a variety of clinical indications, including treatment of tooth substance loss, although the results presented in this study are relatively short-term in relation to the anticipated life of restorations.
Indications for All-Ceramic-Crowns

Practice

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Subject Categories: Dental materials | Restorative dentistry

The anterior all-ceramic crown: a rationale for the choice of ceramic and cement

B. Mizrahi

- The two main families of all-ceramic crowns are high strength Al or Zr based and glass based ceramics.
- The indications and techniques for their use differ.
- The decision making process should be scientifically based.
- The cementation technique is specific for each type of all-ceramic crown and cement used.

The full coverage, all-ceramic restoration of an anterior tooth is a challenging clinical situation for which a variety of all-ceramic systems and cements are available. The decision making process involves the consideration of a number of factors such as underlying substrate colour, tooth preparation geometry, margin location and cementation system. This article discusses the rationale behind these factors and presents a logical and scientific based sequence for the decision making process. A clinical case is presented to demonstrate the requirements and materials necessary for the optimal resin bonded anterior crown.
Can use RB Ceramic ‘Hats’ or Crowns – manage what is in front of you
Common error in C&B preparation

Still need to use conventional sense –
e.g. good separation of ID margins but keep enamel peripherally if possible
Indirect Palatal Veneers

- Can use DRBC Veneers – where aesthetics important
Now go and give it a go please