POSTERIOR COMPOSITE RESIN RESTORATIONS

2 Biggest Complaints:

• Post-op sensitivity
• Unpredictability in establishing interproximal contact

Stay in Control!!!!!!!
Use a rubber dam and tissue management

The wonders of a rubber dam
Tissue Management

It's a dry subject but ……

it's not just about getting
perfect impressions anymore

Tissue Management

3 categories:

Mechanical  Chemical  Surgical

Retraction cord  Ferric Sulfate  Laser
Retraction foam  Al Chloride  Radiosurgery

Hemostatic Agents

• Viscostat: 20% Ferric Sulfate
• Viscostat Clear: 25% Aluminum Chloride
• Astringedent: 15.5% Ferric Sulfate
• Astringedent X: 12.7% Iron Solution
Don’t let your curing light be the weak link!

Valo and Elipar LED curing lights are worth looking into

Check out the Valo LED Curing light

• Corded or cordless
• Multiple modes
• Easy clean up
• Slender design allow easy access even on posterior teeth
VAL LED Curing light
Ultra high energy broadband cures all dental materials

- 385 – 480nm
  Capable of curing all light-cured dental materials
  Elipar (430-480nm)

VAL LED Curing light
3 Different settings

- Standard: 1000cm²
- High Power: 1600cm²
- Xtra Power: 3200cm²
  - Capable of curing all light-cured dental

VAL LED Curing light

- Collimated beam results in complete curing
Check out the Valo LED Curing light

- Cordless operates on environmentally responsible, safe, inexpensive rechargeable batteries
Dentin Bonding Agents
(Blessed be the tie that binds)

ADHESION
The bonding of dissimilar materials at the atomic level

Enamel Bonding
Phosphoric acid etching achieves exposure of enamel rod anatomy.
DENTIN BONDING

- Acid etching removes protein in dentinal tubules, exposing clean tubules ready for bonding.
- HEMA has a hydrophilic end that creates tags into the dentinal tubules.
- The other end of the molecule is resin friendly (hydrophobic), and thus bonds to the resin.
- The resin and the tooth are then united as one.

Etching “opens” the surface to receive resin

Ultra-Etch

- 35% phosphoric acid gel
- Used for all total-etch bonding
- Contains a surfactant; rinses easily
Peak Universal Bond

• Peak Universal Bond is an adhesive resin ideal for all bonding procedures
• Can be used with a self-etch or total-etch technique
• 7.5% filled and can be thinned to 2µm
• Ethyl alcohol solvent carrier
• Cures with most high intensity lights including LEDs
• Contains chlorhexidine (0.2%), which may ensure long-term bond strength.

In the SEM image shown, the tooth structure has been dissolved away, revealing precisely where Peak had flowed into the dentinal tubules. Peak Universal Bond's unique formula allows for optimal penetration into the tooth structure, resulting in exceptional bond strength.
An even closer look reveals that Peak will fill even the most minute spaces within the tooth’s anatomy, reducing the potential for air which causes hydraulic pressure and cause postop sensitivity.

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**Clearfill SE**

- Clearfill SE bond is a 6th generation light curing bonding system.
- Can be used with a self-etch or total-etch technique
- Cures with most high intensity lights including LEDs

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**Optibond XTR**

- Optibond XTR is a 6th generation light cure bonding system
- Can be used with a self-etch or total-etch technique
- The adhesive is 15% filled.
- Cures with most high intensity lights including LEDs
Bonding Strategies

- Etch and rinse
- Self Etch

Obtaining a High Bond Strength

...a listing of quality products

- Peak SE or TE
- Clearfill SE
- Optibond XTR
Clinical Observation of Three Self-Etching Adhesives for Bonding Orthodontic Brackets to Enamel
Private Practice Midvale, Utah

The purpose of this clinical observation was to study and compare the bonding efficacy of three self-etching (SE) and one etch and rinse (ER) dentin adhesives for bonding orthodontic brackets to enamel.

Four young adult, orthodontic patients treatment planned for relatively similar orthodontic procedures in four quadrants (both arches) were recruited and subsequently selected for this 90 day clinical observation. Patients with systemic and congenital enamel deficiencies were excluded. Each quadrant extended from central incisor to 1st molar. Self-etching dentin adhesives tested were: Peak SE (PSE, Ultradent Products, Inc.), Clearfill SE (CSE, Kurary America), and Optident XTR (OXTR, Kerr). The control group included etch and rinse followed by Peak Universal Bond adhesive (PUB, Ultradent Products, Inc.). A light activated luting resin was used for bonding the brackets. The timing and method of illumination was controlled for all brackets.

For each patient, brackets on three quadrants were bonded with three different SE adhesives. Etch and rinse (control) was used for the final quadrant. The adhesives (SE and ER) were rotated through the quadrants to allow equal functional loading to each adhesive. After bracket placement, .014 niti wire was placed on the upper and lower arches using elastomeric ligature ties. Presence and/or absence of debonding were used as the criteria for comparison.

No brackets debonded during the 90 day clinical observation. Results of this limited clinical observation suggest that the use of these 6th generation self-etch adhesives for bonding orthodontic brackets provides similar clinical outcomes as the etch and rinse adhesive.

References

Peak SE Primer
Peak SE Primer is a self-etching primer mixed and delivered in the unique JetMix syringe. JetMix technology separates precise quantities of 1.2ph acid and optimized priming resin to prevent the hydrolytic breakdown and degradation that occurs with other self-etching chemistries.

Obtaining a High Bond Strength: Proper Protocol is a REQUIRED

• Peak SE

20s 3s 10s 10s 10s
In a World of Wedges, What Should I Use?
Getting Closer To a Sensible Segmental Matrix System

Introduction to Segmental Matrix System
A sensible approach to a segmental matrix system
A sensible approach to a segmental matrix system

TRIODENT

Speed it up!

Surefill SDR Flow
Posterior Bulk Fill Flowable Base
SDR: stress-decreasing resin

Polymerization stress is reduced by up to 60%
Apply up to 4mm increments
Use heavy body composite for occlusal 2mm

This flowable composite resin material, when compared to traditional flowable composite resins, demonstrated lower polymerization shrinkage and associated stress while possessing similar physical properties in terms of wear, surface roughness, gloss, color, stability, and stain resistance, as compared to traditional flowable composite resins.

Remove the hardware

- Use your tapered bur to remove any buccal or lingual flash
- Use egg shaped finishing bur to refine occlusal anatomy
- Use 329 bur to add detail to grooves
- Use Green, Yellow, White Jiffy polishers to put high shine.
- Finish with Jiffy Brush
- Adjust occlusion
- Polish
- Finish with Jiffy Brush

Class I’s
The easiest, but the greatest potential for post-op sensitivity

Jenny
Class II’s