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Esthetic Resin Restorations For Posterior Teeth

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Ⅰ. Objectives

The use of composite resin restorations in posterior teeth has increased considerably in the past few years. Improvements in materials and techniques for adhesive dentistry have given the restorative dentist to provide patients with treatment options that are more conservative and esthetic.

Resin composites contain no mercury, are thermally nonconductive, and bond to tooth with minimum tooth preparation. But there are problems including polymerization shrinkage, postoperative sensitivity and decreased wear resistance. Minimizing these negative aspects requires appropriate case selection and meticulous operative technique.

Esthetic restorative techniques for posterior teeth can be categorized into three groups. (1) *The direct techniques* that consist only of intraoral procedures that require a single appointment; (2) *the semi-direct techniques* that include intraoral as well as extraoral procedures to produce a luted chairside restoration; and (3) *the indirect techniques* that require several appointments and the collaboration of a dental laboratory.

The aims of this case presentation are 1)to present a appropriate case selection for each technique, 2)to introduce composite resin instruments, materials & occlusal staining procedures for direct technique and 3)to show clinical and laboratory procedures for semi-direct & indirect technique.

Ⅱ. Materials & Methods

1) Case.1 : direct technique

Used materials : Charisma(Heraeus Kulzer), Surefil(dentsply Caulk), Filtek Z 250(3M)
Solidex stain set(Shofu), Transparent matrix & wedges(Polydentia)
Transparent matrix retainer & instruments(Polydentia)
light curing tip(Denbur), sectional matrix & ring (Danville)

2) Case.2 : semi-direct extraoral technique

Used material : · Alginate for making the impression
· Hard fast-setting silicon imp. material (Blue mousse, Parkell)

or polyether heavy body material for model fabrication
· Dentacolor(Heraeus Kulzer) - indirect resin

3) Case.3 : indirect technique

Used material : · Polyether impression material(pentamix2 ,ESPE)
· Stone die for model fabrication
· Dentacolor(Heraeus Kulzer) - indirect resin

Ⅲ. Results

1) In direct technique case, Hybrid-type resin composites with enamel, dentin and translucent shades present more esthetic results. And occulusal groove stainings showed more natural tooth shades.
2) Semi-direct resin technique had a improved occlusal anatomy & physical properties than direct technique. Also it could be one appointment treatment and take lower treatment fees compared with indirect technique.
3) Indirect resin technique could be preferable used to larger and serial restoration without cusp coverage.

Ⅳ. Conclusion

Small class I to medium-size class Ⅱ cavities are restored with direct technique ranging from bulk filling to more sophisticated multilayering methods. Larger cavities, when in a limited number, are suitable indications for semi-indirect technique. When dealing with serial restoration with larger cavities, indirect technique using composites are best indicated.