

forum

Is the Indirect Crown Best?

In his article in the January/February 2000 issue of *PPAD*, why did Dr. Adams circumferentially reduce two adjacent mandibular molars? Would it not be safer to incorporate a less invasive preparation consistent with a full-gold crown, in which a chamfered margination encompasses the cervical margin? Given the aesthetic intracoronal amalgam restorations that were placed prior to endodontia, why didn't he replenish the occlusal access area with a 4-META bonding agent?

We have all experienced virgin teeth spontaneously and sequentially precipitating, cuspal fracture, and vertical fractures involving the pulp. Thus, the question that remains is whether the indirect crown is truly superior to the proposed intracoronal restoration. Perhaps this variation is a moot point; if acid-etched composites are considered to be optimally retentive, however, then they should be able to support the four to five occlusal cusps via intracoronal bonding as well. In addition, the expansion and contraction of gold and natural tooth structure perfectly coexists, whereas the behavior of composites is much less precise, often resulting in slight distortion and marginal leakage.

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Author's Response

My decision to use the Monobloc technique for these teeth evolved from my desire to preserve as much tooth structure as possible while restoring the teeth with a material that has characteristics similar to natural dentition. In preparing the adjacent molars, full circumferential reduction would have forced me to remove valuable tooth structure. Tooth #18(27) still has more than half of its lingual cusp intact. It is interesting to note that the level of the margin of the finished restoration radiographically is at approximately the same level cervically as in the preoperative radiograph, a testimony to the conservative nature of this design and adhesive dentistry. The amount of tooth structure removed was directly proportional to the damage imposed by the wedging effect of the silver mercury filling. The only reason a portion of the buccal cusps of teeth #18(27) and #19(36), and a small portion of the lingual cusp of tooth #18(27), were removed was due to the decay and horizontal cusp fractures noted clinically and reconfirmed in the presence of a caries-detection dye. If these cusps were left intact and covered with a full-coverage crown, the possibility of subsequent fracture at the gingival level would be a very realistic and disturbing possibility.

When my goal is to restore the tooth to proper function, marginal fit, anatomy, color, and strength, the Monobloc restoration is more effective than amalgam, which merely fills the tooth. In addition, replenishing the occlusal access with a 4-META bonding agent would be a contraindication regardless of the type of restorative material selected. If the decay and structurally damaged tooth are left intact, failure looms in the not so distant future. All decay and old precaries-detection dye fillings should be removed to allow one to build and adhere to solid and healthy tooth structure. While I have certainly witnessed the fracturing of virgin teeth firsthand, this number is incredibly minute compared to the enormous number of silver mercury-filled teeth that we treat on a daily emergency basis. There is also a strong causal relationship between fracturing of these virgin teeth and occlusal dysfunction.

Composite resins are the most retentive material to date, and they can support healthy tooth structure extremely well. The restorative material for the teeth restored in this article is a laboratory processed ceromer that has a modulus of elasticity similar to natural tooth structure with a bond strength similar to that of dentin to enamel. Since this or any material will not support weakened and loose tooth structure, if the fractured tooth structure, silver mercury filling, and/or decay are not properly removed, it is immaterial whether the tooth is restored with an adhesive Monobloc restoration or a traditional full-coverage restoration — they will both fail. In addition, it is also contraindicated, according to manufacturer's MSDS forms, to place a silver mercury filling as a core with a gold crown or any other dissimilar metal covering. The laboratory processing of composite materials actually makes these restorations more precise with little (if any) distortion and marginal leakage, in part due to the vastly improved dentin bonding agents that are currently in use.

I appreciate your insight, Dr. Pfau, and hope that we both will continue to grow analytically with valid and pertinent discussions such as these.

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