

Talking with Patients

Ceramic Inlay

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WHAT IS IT?

A ceramic inlay is a tooth-colored filling that may be used to correct fairly large defects in back (posterior) teeth. The filling material is made of glass-ceramic (sometimes simply called “porcelain”), which can mimic the appearance of a natural tooth. Ceramic inlay materials that are industrially produced have the potential to hold up well over time when used appropriately. Highly sophisticated techniques allow the generation of this type of restoration in two or, at times, one dental appointment. Careful steps are utilized to attach the ceramic inlay to tooth structure. The esthetic and functional results can be very satisfactory (Figure 1).

WHEN IS IT NEEDED?

Dark areas that result from posterior tooth decay or large silver amalgam fillings may be an esthetic concern for some patients. Frequently, these can be corrected using simple fillings (composite resin restorations) that match the color of the tooth. Your dentist may recommend a ceramic inlay when the tooth repair requires

additional control of the size, shape, and color of the filling.

WHAT ARE THE ADVANTAGES AND DISADVANTAGES?

The use of glass-ceramic gives your dentist great flexibility in reproducing the natural beauty of your tooth. Ceramic inlay color and shape are stable over time. Glass-ceramic is both beautiful and brittle. Your dentist will use great care in designing the proper thickness of the inlay and the adhesive attachment (the “bond”) of the inlay to your tooth.

Under normal circumstances, glass-ceramic materials that are thick enough can withstand the demands of chewing. However, excessive biting pressure may result in the development of cracks (fractures) in the ceramic. Some ceramic fractures are readily repaired in the mouth with composite resin filling material. More severe inlay fractures require inlay replacement. The most posterior teeth are subject to the greatest biting pressures. Ceramic inlays are more likely to hold up well when used in the smaller posterior teeth (called

premolars) that are closer to the front of the mouth. Ceramic inlays are not able to withstand the biting pressures caused by individuals that regularly clench and/or grind their teeth together. In this case, other, more durable materials are recommended.

Ceramic inlays absolutely depend on the quality of the bond created with the tooth. Special procedures will be used to establish the necessary, controlled operating field. Proper inlay bonding usually will hold up well. It is more difficult to ensure an effective bond to tooth defects at or below the gum line. Your dentist may suggest other esthetic treatment options when establishing the adhesive bond is in question.

All ceramic inlays contain small cracks (referred to as “flaws”) on and below the surface. Daily biting pressures may cause these flaws to increase in size. Ceramic inlays perform better, over the long term, when the surface flaws are initially removed by careful polishing. Some surface roughness may gradually begin to develop as you chew. Rough ceramic may increase

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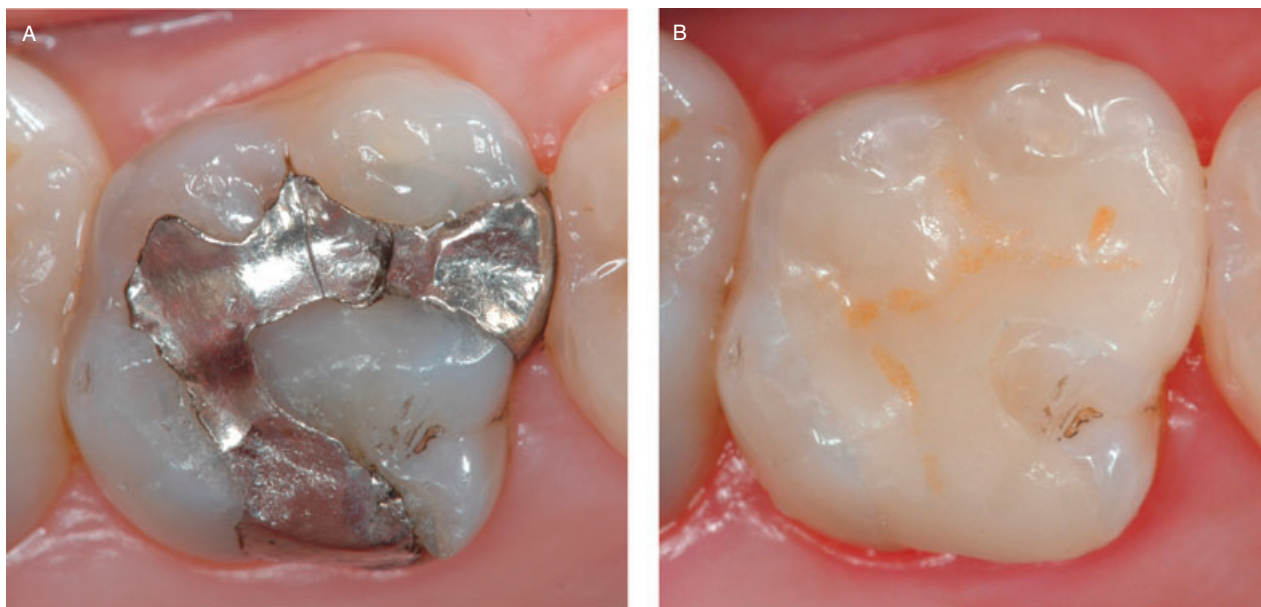


Figure 1. Before restoration with a ceramic inlay (A) and 1 year after restoration with a ceramic inlay (B).

the wear of teeth that bite against it. Routine examinations will allow your dentist to monitor and polish your inlay(s) if necessary.

CONCLUSIONS

Ceramic inlays are useful in rebuilding fairly large defects in

back teeth when esthetic demands are high. Long-term success depends on correct inlay thickness, protection from extreme biting pressures, effective adhesive attachment, and highly polished ceramic surfaces. When used appropriately, ceramic inlays can be expected to provide a beautiful and lasting

correction of many types of posterior tooth defects.

DISCLOSURE

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