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Screw-Retained Single Implant Restorations Part I

By Robert Winter (/spear-review/author/bob-winter/) on February 28, 2018 | (/bookmarks/bookmark/39275) SHARE

The current trend in restoring implants is to screw retain the final restoration. This two-part series will discuss some of the advantages and disadvantages of screw-retained single implant (https://www.speareducation.com/spear-review/category/implants) restorations.

Typically, screw-retained restorations are fabricated as one piece; the abutment and crown are contiguous. The connection to the implant can be metal (as in a metal ceramic restoration) or a TiBase.

The TiBase is connected to the restoration by bonding with a resin cement, or has frictional retention to the zirconia (https://online.speareducation.com/course/adjusting-and-polishing-zirconia-restorations) or e.max restoration. It is possible to have an all-zirconia restoration with the connection to the implant also being zirconia. This may be the least advantageous due to the increased risk of the zirconia connection fracturing, and the zirconia will wear the titanium implant due to micromovement.

There are two main advantages of doing a screw-retained implant restoration. First, there is no cement being used to connect the abutment, so there is no concern that residual cement will be left subgingivally. With cement-retained crowns on abutments, it is highly likely some residual cement will remain, causing peri-implant disease, which presents clinically as inflammation of the soft tissue and bone loss.

The second advantage to screw-retained implant restorations is the ease of rem ne implant, because there is access to the screw once the composite is removed from the chimney.

There can be significant contraindications, complications or disadvantages when using one-piece screw-retained restorations. To consider restoring an implant with a one-piece designed restoration, the implant must be precisely placed during surgery. In anterior cases, if the implant is positioned with improper angulation, it may not be possible to use a screw-retained restoration, because the access hole may come out of the facial or incisal edge of the crown.

It may also result in ceramic being too thin in areas where functional stress may cause a fracture of the restoration. If there is a mesial or distal angulation problem, the interproximal contours of the crown may prevent the male portion of the restoration to be inserted into the internal aspect of the implant. This creates a path of insertion problem. 2

The same problems can occur with posterior restorations, with more problems occurring due to the occlusal load placed on thin areas of usually ceramic restorative material. In addition, sometimes it is challenging to esthetically manage the screw access holes. Frequently, the composite used to close the access hole appears too low in value. Opacious composites must be used to minimize this problem. A few manufacturers, such as Nobel Biocare, have a screw option which allows for slight correction in angulation.

The next article will discuss other disadvantages as well as presenting possible solutions to the problems.

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