CEMENTED-SCREW RETAINED CROWN ON CAD/CAM ABUTMENT

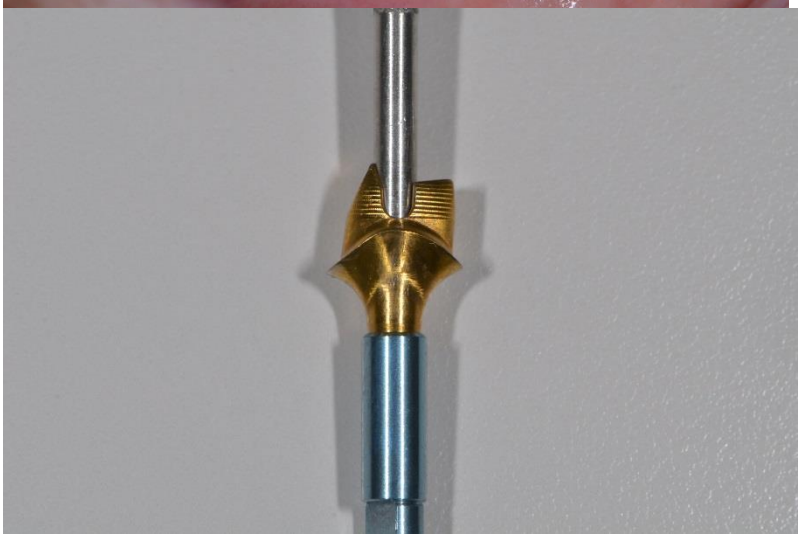
The dental implant literature now suggests that retained cement is the leading cause of peri-mucositis, peri-implantitis and possibly implant failure. One method, when the axis of the implant will allow, to decrease the risk of retained subgingival cement is to fabricate a screw retained restoration. Adjusting the contacts on a screw retained crown can be frustrating, however, with the need to screw down and unscrew the restoration every time an adjustment is made. A method of combining the benefits of a screw retained restoration with the fitting of a cemented crown is through the usage of a hybrid cemented-screw retained crown. The case below demonstrates the technique on a CAD/CAM abutment.

I highly recommend using a provisional restoration to shape the gingival tissues prior to having the CAD/CAM abutment fabricated however this is not always necessary.

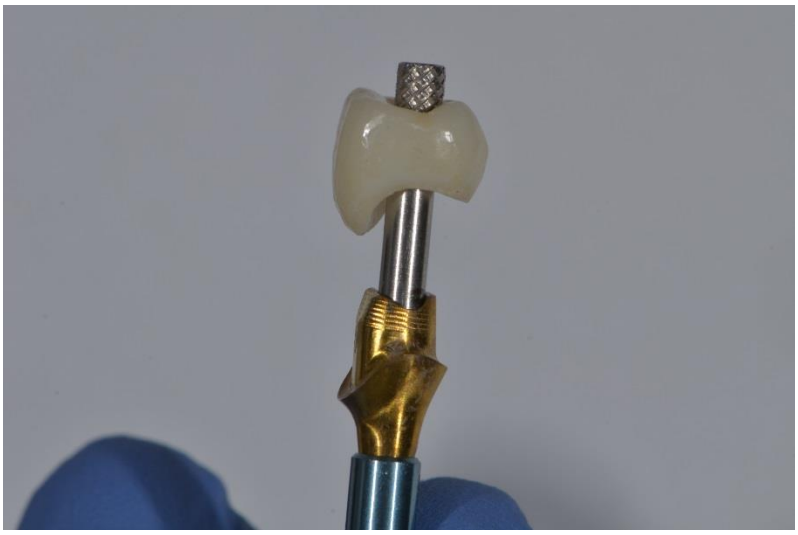
IMPORTANT: I do not recommend a Zirconium abutment in sites other than central and lateral incisors. When they are used, the tissue contours ***must*** be developed prior to taking a final impression for abutment fabrication. Considerations regarding the usage of Zirconium abutments.

1. If the crown has to be replaced, cutting it off of the Zirconium abutment will likely result in microfractures in the abutment which will necessitate abutment replacement or, at least, increase the potential for abutment failure under the new crown in the future.
2. If the gingival tissues are not molded to the shape of the abutment in the subgingival area (remember temporization to do so), then attempting the seat the abutment past the resistance of the tissues via tightening the screw has a high likelihood of introducing stress that can cause fractures in the zirconium abutment. The fracture may be detectable on the day of abutment seating but more likely will not be detected until after the crown has been cemented (necessitating crown removal).

Seat the abutment and screw into place with hand tightening. The abutment should be fully seated. Seat the crown and adjust contacts and occlusion

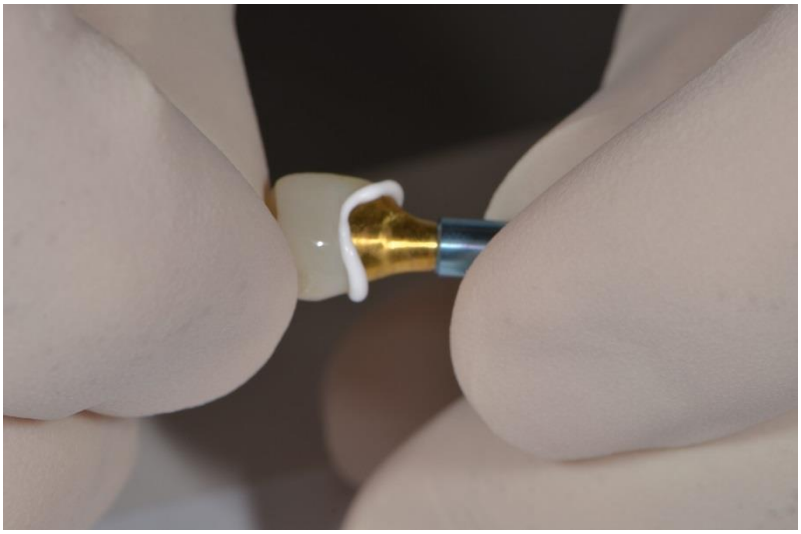


Once all adjustments have been made, remove the abutment from the mouth and insert it into a lab analog by screwing it down.

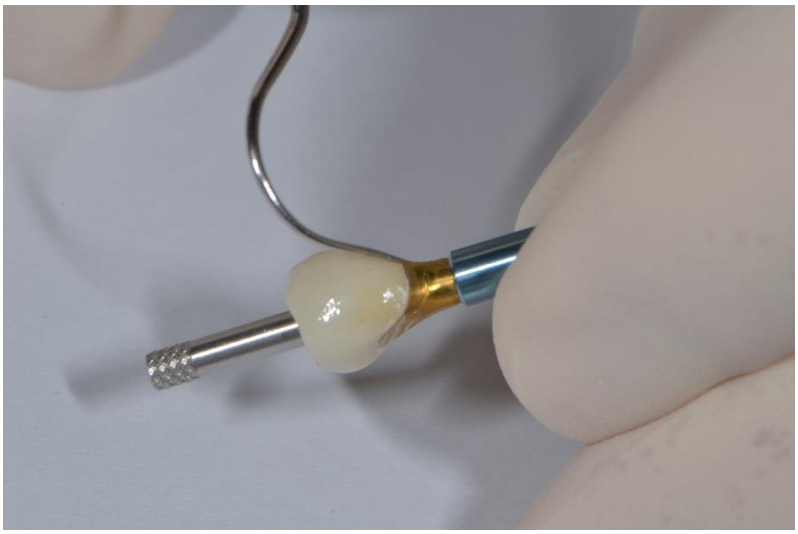


Lithium disilicate crown that has been fabricated with occlusal access hole to provide screw access. As opposed to the screwdriver shown in this photo you can place cotton pellets or wax into the screw access hole for the abutment.

Thin layer of cement is applied to the abutment and the crown seated.



Seating the crown will cause excess cement to extrude from the margins and the screw access hole in the crown.



Clean the excess cement from the crown-abutment margin. Remove the cotton pellets/wax from the access hole and remove the crown-abutment from the analog.

Your hybrid cement-screw retained crown is now ready to screw into the implant and into the mouth.

Screw down the crown-abutment and torque to 35Ncm. Let it sit for about 5-10 minutes and then retorque to 35Ncm. Insert cotton pellets or your preferred material into the screw access hole to procect the head of the scew. Insert composite material into the access hole, check occlusion, and polish.