

A SIMPLE TECHNIQUE TO LOCATE ABUTMENT ACCESS HOLE IN CEMENT RETAINED IMPLANT CROWNS: A CLINICAL TIP

Umesh Y Pai*, Shobha J Rodrigues**, Mahesh Mundathaje*

Department of Prosthodontics, Manipal College of Dental Sciences, MAHE, Mangalore-1

*-Associate Professor, **- Professor & Head.

ABSTRACT:

This article highlights a simple technique to gain access to abutment screw through the cement retained crown with a high degree of predictability.

Keywords: Access hole, cement retained implant crown, Putty index

INTRODUCTION:

The prosthetic phase of implant therapy involves fabrication of either cement retained or a screw retained prosthesis. Abutment screw loosening is one of the most common technical complications encountered¹, which necessitates the operator to access the abutment screw through the prosthesis for either removal or replacement. Several authors have mentioned different methods of gaining access to the abutment screw hole. **Doerr**² and **Tarlow**³ described a method to gain access by using a vacuum formed matrix with access holes corresponding to abutment positions. **Hill**⁴ described the fabrication of a putty index for the same purpose. **Schwedhelm and Raigrodski**⁵ described a procedure which involves staining of the occlusal surface of the ceramic crown at the area corresponding to access hole location. **Lautensack J et al**⁶ described a method of using a vacuform template that provides information regarding the screw location and angulation of the screw channel and enables guided drilling through the template. **Figueras-Alvarez et al**⁷ and **Daher et al**⁸ advocated the use of photograph as a record to ensure correct position of access hole

location. **Wadhvani et al**⁹ described a procedure for fabricating a custom-made and precision implant-locating device to record the access position of the abutment screw. **Patil and Patil**¹⁰ suggests preservation of the occlusal photograph of the restorations (indicating the access-points) placed on a definitive cast in the form of a computer file and transferring this to the patient's e-mail or social networking account. Most of the above mentioned methods are either cumbersome to fabricate, technique sensitive or require additional armamentarium and instrumentation.

The current technique involves the use of an orthodontic wire along with a PVS putty matrix which enables the operator to easily and accurately locate the screw access hole intraorally.

Procedure:

Record the impression using a suitable technique (open tray or closed tray) and material and attach the laboratory analogue to the impression coping. Pour the impression after application of gingival mask.

Retrieve the cast, attach the abutment to the analogue and perform the necessary

modifications, following which a crown is fabricated on the abutment. Once the crown is ready, unseat the crown from the abutment on cast and a 21 gauge wire is used to create a small loop of 2 mm diameter with wires extending about 10mm from both arms of the loop.

The loop is then adjusted such that it corresponds with the occlusal aspect of abutment screw access hole with the wire positioned above the level of the prosthetic crown. (figure 1)

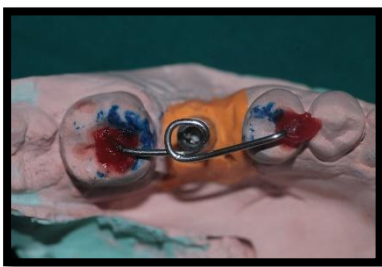


Fig.1 A loop of orthodontic wire corresponding to the access hole on abutment.

Once this position is fixed and stabilized using pattern resin on the arms of the loop extending on adjacent teeth, the crown is replaced back on the abutment and the putty index is fabricated on the crown and the adjacent teeth covering both buccal and lingual sides.

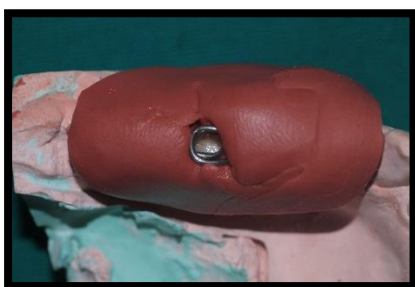


Fig.2 silicone putty embedding the orthodontic wire with the final crown seated in position.

Any excess putty covering the wire and the occlusal surface is cleared over the loop. This putty index is then preserved for future reference.

The technique presents advantages in terms of ease of fabrication, use of materials and accuracy of location of the access hole. Poor relocation of the access hole may lead to non-usage of the crown or rather damage to the underlying abutment itself which may necessitate usage of a new abutment and crown. This is especially true with regard to abutment screw retightening or replacement which does not involve any physical damage to the crown or abutment thereby not warranting their replacement. Operator does need to preserve the index which necessitates a certain amount of care in terms of record maintenance.

References:

- 1) Nissan J, Narobai D, Gross O, Ghelfan O, Chaushu G. Long-term outcome of cemented versus screw-retained implant-supported partial restorations. *Int J Oral Maxillofac Implants*. 2011;26(5):1102-07.
- 2) Doerr J. Simplified technique for retrieving cemented implant restorations. *J Prosthet Dent* 2002; 88:352-3.
- 3) Tarlow JL. A modified technique to locate the abutment screw access opening of a cemented implant-supported restoration. *J Prosthet Dent*. 2012; 108:58-59.
- 4) Hill EE. A simple, permanent index for abutment screw access for cemented implant-supported crowns. *J Prosthet Dent* 2007; 97:313-4.
- 5) Schwedhelm ER, Raigrodski AJ. A technique for locating implant abutment screws of posterior cement-retained metal-ceramic restorations with ceramic occlusal surfaces. *J Prosthet Dent* 2006; 95:165-7.

6) Lautensack J, Weber V, Wolfart S. Template to determine the position and angulation of the abutment screw channel for implant supported, cement-retained restorations. *J Prosthet Dent* 2012;107:134-36

7) Figueras-Alvarez O, Cedeño R, Cano-Batalla J, Cabratosa-Termes J. A method for registering the abutment screw position of cement-retained implant restorations. *J Prosthet Dent* 2010; 104:60-2.

8) Daher T, Morgano SM. The use of digital photographs to locate implant

abutment screws for implant-supported cement retained restorations. *J Prosthet Dent* 2008; 100:238-9.

Conflict of Interest: NIL

9) Wadhvani C, Kwok-Hung Chung. Simple device to locate the abutment screw position of a cement retained implant restoration. *J Prosthet Dent* 2013; 109:272-274

10) Patil PG, Patil SP. Occlusal-view photograph of cement-retained implant prosthesis as a permanent guide for access-hole preparation. *J Prosthet Dent*. 2013;109(5):343-44.

Corresponding Author: Dr. Umesh Y Pai,

Assoc. Professor, Dept. of Prosthodontics,

MCODS, Mangalore-1

pai.umesh@manipal.edu