

Cemented and screwed implant restorations

Language: English

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Date/Event/Venue:

November 11-13, 2010
2nd Future Trend in Implantology International Dental Conference FTI
Florence (Italy)

Introduction

The most common complication of a cemented implant restoration is loosening of the abutment screw. The retrieval of the crown for accessing the screw is almost impossible without destroying the crown¹.

The problems that may occur in case of screw retained prosthesis are mainly determined by the limited possibilities to cast a high quality implant abutment in dental laboratories.

We present a method to design the implant supported restorations, in order to benefit of the advantages of both retaining methods and minimize their disadvantages.



Fig. 1a+b: Advantages and disadvantages

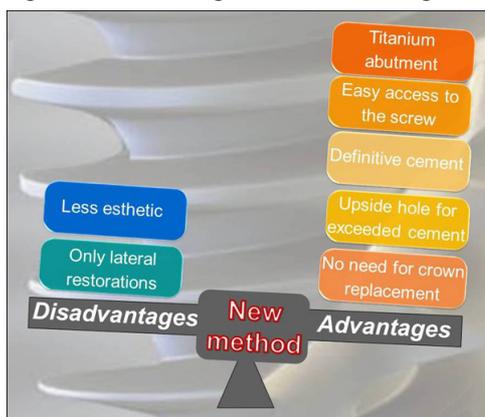


Fig. 1c: Advantages and disadvantages

Material and Methods

A 28-year-old female patient attending in the clinic for the rehabilitation of the fourth quadrant. One implant has been inserted corresponding to the mandibular right second premolar (3.75 X 11,5 mm). Six months later it has been loaded with a metalo-ceramic crown.

One straight titanium abutment was used to support the metalo-ceramic restorations. The crown has been designed with a tunnel for the access to the abutment screw. After the cementation with a definitive glass ionomer cement the access hole has been closed with a "ceramic repair" composite with an opaque base².

Discussions

In cases of screwed restoration the settling effect and the "microgap" are greater than in the cemented ones, due to the roughness of casted surfaces, both of them possible failure causes. Plastic abutments with titanium hex have a deficient bonding between titanium and castable alloy.

For cemented restorations, the definitive cement can seal, completely and for long term, the voids between crown and abutment and the passive fit is more easily achieved. Unfortunately, we need to retrieve the restoration in case of screw fracture or loosening. Therefore, with a very small modification of a conventional implant supported metal-ceramic prosthetic structure we can achieve many advantages for a long-term restoration. It works like a cemented restoration and, in the same time, we benefit of an "emergency solution".

The sealing of the screw access hole could be a problem, but the new bonding technology and 6 months recall can solve that.



Fig. 2: Initial clinical situation

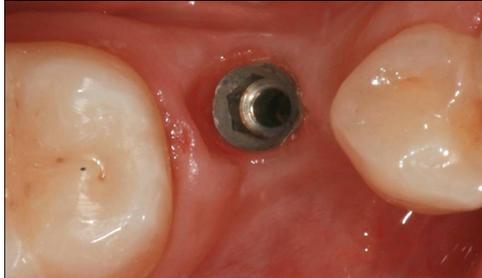


Fig. 3: Six (6) months later



Fig. 4: Metal-ceramic crown and titanium abutment



Fig. 5: The screw access is closed with Teflon ribbon



Fig. 6: Excess of glass ionomer cement

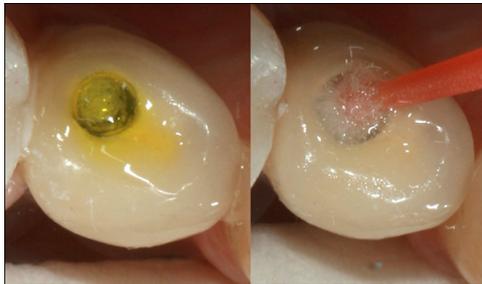


Fig. 7: Etching and silanization



Fig. 8: Opaque base of ceramic repair system



Fig. 9: Occlusion checking



Conclusions

Due to the advantages driven by the definitive cementation and the possibility to retighten the screw without removing the prosthetic piece, this method can be utilized in following situations:

- Solitaire implant restorations
- Long implant supported bridges
- Mixed bridges (natural & implant abutments)

Literature

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