



The one-time CONNECT extension abutment for single implants. Introduction of a new concept.

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Background:

The one abutment-one time protocol has long been suggested in order to minimize peri-implant crestal bone resorption and enhance soft tissue stability at the implant-abutment interface. The definitive abutment can be inserted at the time of implant placement or at 2nd stage surgery. However, selecting the definitive abutment for the anterior zone with its three-dimensional morphology at an early surgical stage can become rather complicated. An alternative solution is the placement of a final prefabricated transmucosal extension abutment. These components (multi-unit abutments) typically have an external hexagon design, which results in a diameter of the abutment wider than the implant shoulder. In addition to this, an inherent drawback of the external connection is the compromised seal and stability of such connections. Recent technological advancements and current biologic insights have led to the development of a new solid one-piece transmucosal extension abutment, the CONNECT abutment, with an internal connection and innovative design and geometry, which makes it ideal for use, especially in the esthetic zone.



Clinical Procedure



Fig 1,2,3: Initial clinical situation of a 25-year old female patient. Failing left central incisor with external cervical resorption.



Fig 4,5,6: Tooth #21 was extracted keeping the buccal part of the root (socket shield technique). The extraction site was filled with xenograft and a free gingival graft was placed on top (socket seal surgery SSS).

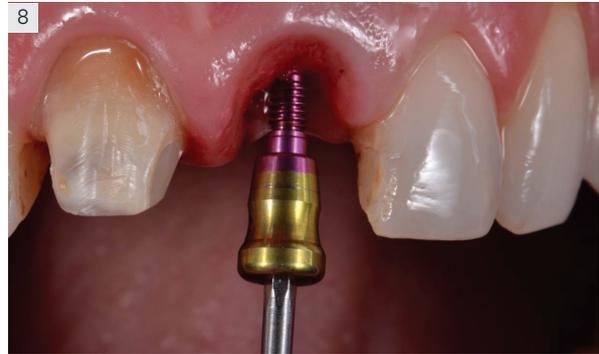


Fig 7,8,9: After six months of healing, an implant (MIS V3 3,9*16mm) was inserted through a surgical guide (MGuide). At this time a concave healing abutment was connected in a semi-submerged concept.

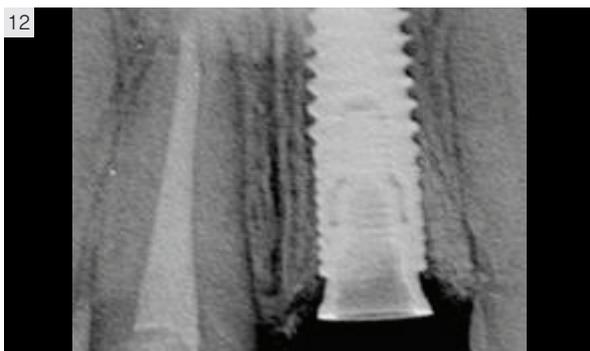


Fig 10,11,12: Clinical and radiographic comparison of the MIS single unit (Fig.11) and the MIS CONNECT (Fig.12) abutment.



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Fig 13: MIS CONNECT abutment of 1.5mm gingival height was connected with a final torque of 30 Ncm.

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Fig 14: The fabrication of a provisional restoration over the CONNECT abutment guided tissue and papillae maturation for 3 months.

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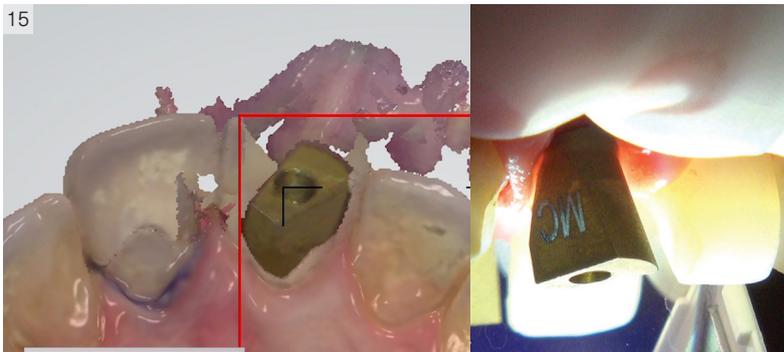


Fig 15: A fully digital workflow was followed. Digital impression over the CONNECT abutment.

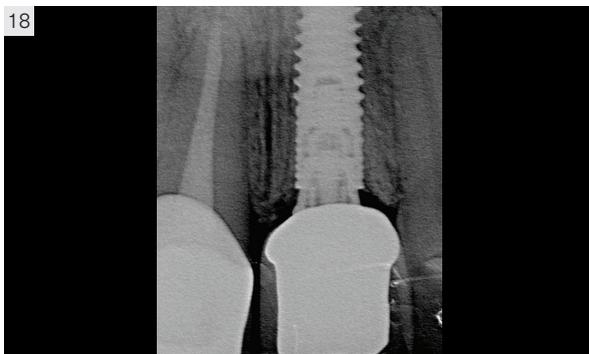


Fig 16,17,18: Final clinical and radiographic result. Two zirconia-based ceramic crowns were fabricated for bonding on tooth #11 and for implant #21 to be screwed into the CONNECT abutment. (CDT: Nondas Vlachopoulos)

Outcomes:

In this demanding clinical case, the CONNECT abutment served as a transmucosal extension one-time abutment to allow preservation of the bone and soft tissue stability around the implant. Its delicate geometry provides more space for interdental and buccal bone as well as for soft tissue and papillae stabilization. Moreover, its internal female connection to the male connection of the prosthetic superstructure allows for better stability and seal of the CONNECT-crown interface and there are no bulky healing caps, if provisional pontics are on top of it. Thus, the solid one-piece CONNECT extension abutment with its innovative design and its biologically-oriented geometry provides predictable highly esthetic and stable results and offers a new promising approach of the one abutment-one time protocol.

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