Clinical Case Spotlight

Immediate Implant Placement and Immediate Definitive Restoration of a Maxillary Central Incisor

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Introduction to the case

When considering the replacement of a maxillary central incisor with an implant-borne fixed dental prosthesis, case selection, planning and the meticulous application of treatment methods are the keys to success. Immediate implant placement and immediate restoration may minimise tissue loss and result in a highly aesthetic outcome. Implant placement with a fully-guided approach can improve the accuracy of placement, and the placement of the final abutment or restoration at the time of implant placement can promote tissue stability.

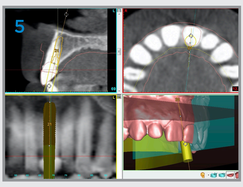
Treatment steps

A 65 year-old male presented for the replacement of failing tooth 21, on which a detached crown had recently been recemented by the referring dentist

The soft tissue contour of 21 was favourable for immediate implant placement

The radiograph and intra-oral photograph (provided by the referring dentist) showed the poor restorative prognosis of 21

Bone sounding under local anaesthesia was performed to determine the presence and height of the buccal crest



Surgical and prosthetic planning was performed using SIMPLANT software. The implant-borne crown was planned to have cingulum screw-access

An Immediate Smile Model and SIMPLANT SAFE Guide were fabricated

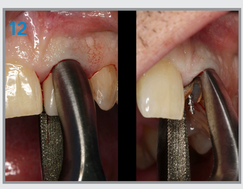
Non-polarised and polarised shade photographs were taken for the fabrication of the definitive prosthesis

The Atlantis zirconia abutment and lithium disilicate crown were fabricated

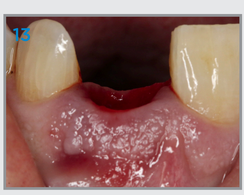
An intra-sulcular incision with a 15C surgical blade was made

A periotome was used on the palatal aspect to mildly elevate the tooth

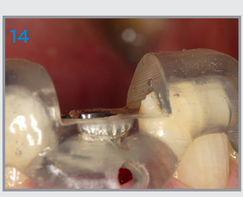
A luxator was used on the palatal aspect for moderate elevation taking care to avoid buccal displacement of the tooth



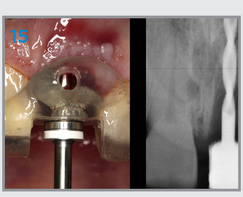
Wide and narrow diamond-tipped forceps were used to rotate the root



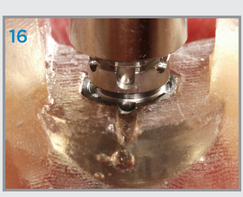
Minimal soft tissue trauma during the extraction was achieved



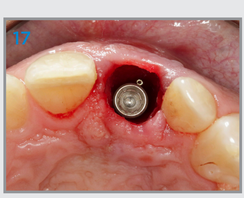
The seat of the SIMPLANT Guide was verified



An intra-operative radiograph with the initial drill was taken

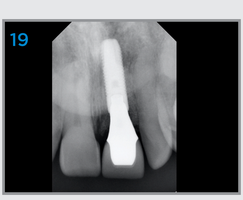


The implant was placed fully guided. The single long notch of the implant mount was aligned with the notch on the SIMPLANT Guide for the Astra Tech EV implant to be placed at the planned depth, axis and timing (rotation)

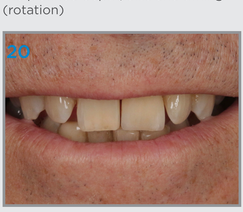


The jumping distance was grafted

The Atlantis zirconia abutment and lithium disilicate crown was tried in before the crown was cemented extra-orally to the abutment



A post-operative radiograph was taken



Peri-implant tissues were stable at the 4-year follow-up

Material and Method

- Immediate Smile
- SIMPLANT SAFE Guide
- AstraTech EV Implant
- Atlantis Abutment

Discussion and Conclusion

Used appropriately the Immediate Smile method, utilising the SIMPLANT SAFE Guide and Atlantis Abutment, can improve the accuracy and predictability of immediate implant placement and restoration.

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