

Immediate restoration to increase papilla formation and aesthetic appearance of single-tooth implants - results of a prospective cohort study

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Aim of the study

The present prospective cohort study reports the 1-year clinical follow-up investigation of single tooth implants restored immediately after placement to achieve immediate oral rehabilitation and favorable aesthetic results regarding soft-tissue appearance and especially papilla formation.

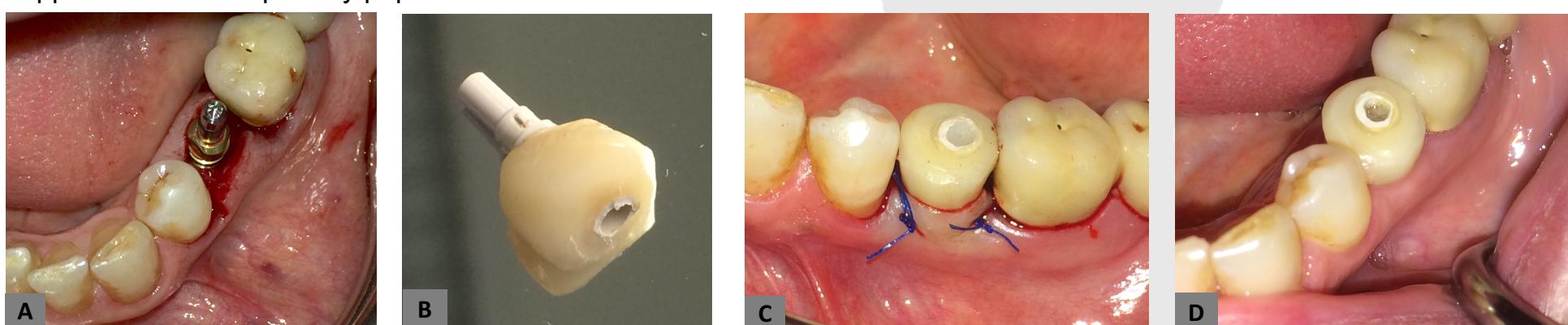


Figure 1:

A-D: Implant insertion regio 35 (A) with immediate provisional restoration (PEEK abutment, B). Clinical situation after implant placement and after three months before final prosthetic treatment

Materials and methods

12 patients (4 male, 8 female) received implant placement (Camlog Screw line) in single tooth gaps of the anterior and premolar region of the upper (6 implants) and lower jaw (6 implants). Implants have been restored with a provisional PEEK (Polyetheretherketon)- abutment and an adhesively assembled provisional resin crown in non-occlusion. After a mean healing period of three months final prosthetic restoration has been conducted.

One year after definitive loading, clinical and radiological implant follow up has been performed. Papilla Index (PI), according to Jemt 1997), Bleeding Index (BI), Probing Pocket Depths (PPD), Pink Esthetic Score (PES) and Marginal Bone Loss (MBL) have been evaluated previous to implant placement (t0), after immediate restoration (t1) and one year after final prosthetic restoration (t2).

Results

None of the 12 implants failed and immediate provisional as well as final definitive prosthetic restoration were successful in all implants. BI and PPD revealed healthy conditions of the peri-implant soft tissue at all time points. The evaluated PI increased from a mean value of 1.2 (corresponding to "less than half of the papilla is present") at t0 to 2.6 at t1 and 2.8 (corresponding to "the papilla fills up the entire approximal space") at t2. Evaluation of the PES revealed excellent results, especially regarding papilla formation. The marginal bone level remained stable from t0 to t2 indicating a favorable impact of immediate restoration on the osseointegration of the implant.

Conclusion

The present prospective cohort study showed that provisional immediate restoration presents a reliable implant-prosthetic tool to increase the soft-tissue quality and the aesthetic appearance of the implant-crown-soft-tissue complex in a minimal invasive way. By careful selection and handling of the provisional device, the immediate restoration seems to be no risk for marginal bone loss.

