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Prospective Clinical Evaluation of Rhein83 Equator Profile Fixed Implant Rehabilitations

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Objectives: The purpose of this prospective clinical study was the evaluation of the reliability of implant supported full-arch rehabilitations with the innovative Rhein83 Equator Profile Attachment. The evaluation regard: patient's satisfaction, number of technical passages, prosthetic complications, survival rates.
Methods: The 10 participating patients (3 males, 7 females, mean age 68±10years) with implant rehabilitations retained by innovative Rhein83 Equator Profile Attachment participated in this clinical study. From 5 to 7 implants were placed in edentulous arch. Fixed Provisional rehabilitations are loaded immediately. Fixed Definitive rehabilitation was realized 6 weeks after implantation.Patients' satisfaction was evaluated with a questionnaire with a VAS from 1 to 5. Survival rates and prosthetic maintenance procedures or complications were also recorded during the follow-up period.
Results: Patient satisfaction was 4,42±0,40. The number of technical passages and time of realization resulted significantly reduced compared to conventional procedures. During a mean observation time of 12±2 months no implant was lost and no periimplantitis occurred (100% survival rate). Maintenance: No prosthetic complication occurred.
Conclusion: Within the limitations of this study, it can be concluded that the number of technical passages and time of realization significantly reduced plays a significant role on overall patient satisfaction with implant fixed rehabilitation. This new type of attachment appears to be promising.

Keywords: Function, Implantology, Implants, Prosthodontics and Technology

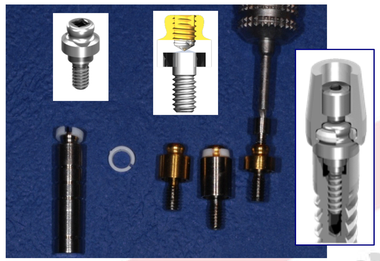

Fig. 1: Rhein 83 Equator attachment system: for the fixed prosthesis a particular fixation system has been developed, that involves a Seeger spring (white ring) that engages the undercut of the attachment and a mini fixation screw (see fig. 9).

Fig. 2: Radiographic status of the patient before treatment. Inadequate rehabilitations are present both i the maxillary and mandibular arch.

Fig. 3: Patient after the removing of the previous inadequate fixed prosthesis.

Fig. 4: Patient after the extraction of the remaining exhausted teeth.

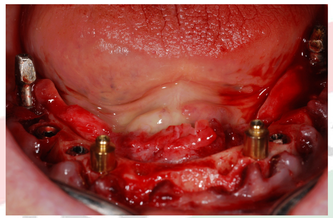

Fig. 5: 6 implants have been placed, 4 in the interforaminal region of standard diameter and length; the 2 distal implants are of wide diameter and short length; different heights EQUATOR abutments are positioned on the implants to maintain an horizontally oriented “occlusal plane”.

Fig. 6: Impression taken after the suture, with a sterile and radiopaque hard PVS; the analogues are fitted in position thanks to the pick-up transfers.

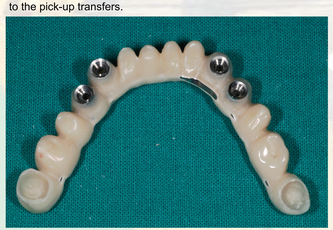

Fig. 7: Provisional prosthesis after polishing. The distal implants are used only for vertical load bearing.

Fig. 8: patient after the application of the provisional prosthesis the day of surgery.

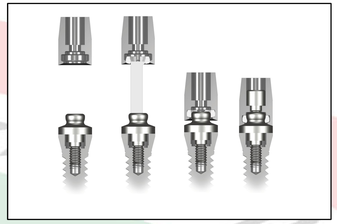

Fig. 9: the retentive system of the Equator attachment is based both on a Seeger spring that engages the undercut of the attachment and a mini screw that engages the inner head of the ball.

Fig. 10: patient at the time of the definitive impression after an healing period of 6 weeks

Fig. 11: Definitive prosthesis on the master cast.

Fig.12: mini fixation screw.

Fig. 13: the passive adaptation of the framework can be tested intraorally only with the Seeger system.

Fig. 14: Radiographic control of the patient after treatment. The distal implants are maintained because of their clinical stability

Fig. 15: patient before treatment

Fig. 16: Patient after treatment, with definitive prosthesis. The prosthesis is maintained in situ by both the screw and the Seeger system.

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