



in order to evaluate the prosthetic functional improvement and patients' satisfaction tests were held before and after implant anchorage. Implant evaluation was carried out by means of a chart which included: probing depth (PD), plaque index (PI), bleeding on probing indices (BOP), implant mobility and pain on percussion. These tests were performed at six different times: T0: before implant surgery T1: after anaesthesia and before the beginning of implant surgery T2: after implant insertion under anaesthesia T3: after three months T6: after six months T12: after one year from surgery.

Results: The clinical study demonstrated 95% implant success after 12 months without any surgical and post surgical complications. It was evidenced a statistically significant increase ($p < 0.05$) of comfort, denture stability and phonetic starting from the 3rd month after surgery whereas a statistically significant increase ($p < 0.05$) of masticatory efficiency and cycle patterns one year after implant insertion and loading.

Conclusions: A mandibular overdenture retained by two mini implants with immediate loading protocol, allowing less invasive surgery, decreased post operative pain and significative cost reduction, could be a viable treatment option for the rehabilitation of mandibular edentulous patients. A long-term follow up and a larger patients' sample will be called for to confirm and validate these data.

Ultrasonic instrument effects on different implant surfaces

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Aim: From the literature we infer that efficient peri-implant debridement cleaning result is obtained using metal tips rather than plastic material tips. Plastic tips allow to alter, the least possible, fixture superficial properties or analyzed specimens. Aim of this study was to evaluate in vitro effects of ultrasonic instrumentation using Acteon Implant Protect® ultrasonic grade IV titanium tips on implant surface micro- and macro-topography.

Methods: Nine 6 mm diameter and 2,6 mm height titanium disks were used in this study, with 3 different kinds of surface: machined, laser-treated and sandblasted. Four 500x500 μm areas were selected on each surface. Each area was equidistant from the disk center and from the disk border. Each area was analyzed using a Talysurf CLI 1000® profilometer and captured with an optical microscope at 3x enlargement and with a scanning electron microscope at 100x and 300x enlargement. Successively the

surface of each titanium disk was instrumented for a total of 40 strokes by a single operator using Implant Protect® (Acteon®) ultrasonic titanium tip. The tip was angulated tangentially. Calibrations were performed with scales before the experiment, and the average pressure applied in this study was 30g. Back and forth movements were performed in the same direction for 40 times. For the Satelec® scaler a power setting 3/10 was set at 25 to 32 kHz. Instrumentation was achieved with a continuous water irrigation. Pictures were acquired again by optical microscope and scanning electron microscope. After instrumentation any contaminants were searched with SEM-EDX (Scanning Electron Microscope - Energy Dispersive X-ray spectrometry). All reserched values were subjected to statistical analysis.

Results: Each image acquired with optical microscope and with Scanning Electron Microscope reveals instrumentation signs with tested tips. Machined and sandblasted surfaces showed a significant Ra reduction (p value $< 0,05$). Only laser-treated surface showed scratch signs without substantial Ra reduction. Contaminants were not found with EDX analysis before specimen instrumentation and after instrumentation neither. Before instrumentation and after instrumentation sandblasted surface presented a considerable quantity of Al and O.

Conclusion: To be effective implant surface ultrasonic instrumentation has to be done with titanium tips, not with plastic material tips. Nevertheless titanium tips instrumentation causes alterations of implant surface microtopography; in addition different implant surfaces undergo different kinds of structural alteration non-clinically definable.

Early loading of Ti-Zr dental implants with a chemically modified surface: 1-year results from a prospective study

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Aim: The purpose of this prospective clinical study was to evaluate implant survival, success and marginal bone loss (MBL) of early loaded Titanium-Zirconium alloy implants with a chemically modified sandblasted, large-grit, acid-etched (SLActive®) surface.

Methods: Patients (age ≥ 18) without any systemic or local contraindications to implant therapy, who were missing at least one tooth in either posterior maxilla or mandible, were included in the present study. Each subject received a Straumann Roxolid® dental