study and demonstrate the precision and reliability of the surgical protocol, independently of the operator. Indeed, the study aimed to evaluate how operator dependent was the protocol and to underline the importance of the initial intervention planning.
A 64 year old adult, non-smoker, with a negative anamnesis, completely edentulous for at least six months and prostheses wearer of underwent the surgical procedure. The patient underwent CBCT with radiographic templates prepared using his own prostheses and subsequent planning of the Computer-guided implant surgery. In this manner, we were able to develop precise surgical template for each of the dental arches.
Regarding the surgical intervention, the superior dental arch was assigned to an expert surgeon, implantologist with 34 years of experience, while the inferior dental arch was assigned to a new graduate surgeon.
The patient was treated post-surgery with non-steroid anti-inflammatories for 3 days and antibiotics, without administering corticosteroid medication. The patient referred no pain or general post-operation discomfort at follow-up at 3 and 7 days.
We carried out a low dosage CBCT at 3 months to radiographically evaluate the concordance between the protocol and the effective placement of the implant
Following the necessary measures, and keeping in mind the precision error of the procedure, we found an average displacement of the implant position of 0.2 mm compared to the protocol in both dental arches (SD 0.215 for the upper dental arch and SD 0.192 for the lower dental arch). Values ranged from 0.47mm to 0.02mm. We found no significant differences between the intervention carried out by the expert hand and the intervention carried out by the new graduate.
In conclusion, computer-guided flapless implant surgery can be considered a non-operator dependent procedure, except for the planning phase, during which the presence of an expert operator is always advisable. Moreover, the possibility of carrying-out an intervention without having to open a flapless guarantees fewer complications post-intervention.

Postoperative pain and surgical time comparison using piezoelectric or conventional implant site preparation systems

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Aim: Since its introduction, piezoelectric bone surgery has established an important role in oral surgery and dental implantology. Piezoelectric surgery is efficient at preparing implant site osteotomies due to its selective cut, micro-streaming and cavitational effects, which preserve and maintain the soft tissue. Several advantages have been outlined in patient's symptoms, both in terms of improved intraoperative comfort and postoperative course. The aim of this study was to compare implant insertion procedures using piezoelectric surgery or conventional drilling. Intra- and postoperative pain, implant site preparation time and learning curve were evaluated.
Methods: A total of 13 (7 women/6 men, aged between 45 and 75 years) partially edentulous patients were rehabilitated with 40 titanium implants (n=20). Implant therapy consisted in the inclusion of at least two conical implants between 3.8 and 4.5 mm diameter with a maximum torque of 35 Ncm in randomised bilateral edentulous areas. First sites were prepared with piezodevice (test sites) and the contralateral ones with conventional drilling (control sites). Surgery was always performed by the same operator. Implant site preparation timing was measured from flap elevation until implant inclusion. Patients recorded their subjective intraoperative and postoperative pain daily for 7 days and at 15th day after surgery using a Visual Analog Scale (VAS).
Results: Patients treated with piezoelectric technique presented a lower VAS, minor swelling and less recovery time compared to the conventional technique. No operative complications were reported and the implant survival rate at 1 year was 100% for both the techniques. VAS significant differences were found for the test sites as intraoperative symptoms ($p = 0.009$), after 1 day ($p = 0.010$), 2 days ($p = 0.016$), 3 days ($p = 0.017$), 5 days ($p = 0.015$), 6 days ($p = 0.018$) and 7 days ($p = 0.039$). The average surgical times of implant sites preparation were: 10 ($\pm$ 1.4) minutes for the test sites, and 7.00 ($\pm$ 1.7) minutes for the control sites. In 69.2% of cases (9 of 13 patients) the operator has found advantages in terms of better access to the posterior sites, enhanced intraoperative visibility and insertion axis maintenance using the piezoelectric technique. The learning curve with piezodevice has seen a decrease in timing (rho = -0827, $p = 0.001$) from the first to the last intervention; whereas no significant difference was evaluated with the traditional method.
Conclusion: Compared to traditional methods, piezoelectric technique enables optimal healing because it reduces the postsurgery swelling and discomfort. The average time necessary for the piezoelectric implant site osteotomy was approximately 3 minutes more than conventional technique.

Activation and platelets degranulation in the PRP (Platelet-Rich Plasma): cytofluorimetric