

Changes of implant stability measured at surgical stage using resonance frequency analyzer

ABSTRACT n° 5710

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Résumé [2243 Characters]

Background (500 characters max.)

Implant stability is very important factor for implant success. The change of implant stability after surgery can be measured with Osstell Mentor which has high clinical reliability. ISQ can be expressed at first and second surgery using Osstell Mentor. The result can be used to evaluate the healing process of surgically operated dental implant

Aim/Hypothesis (300 characters max.)

The change of implant stability after surgery can be measured with Osstell Mentor which has high clinical reliability. ISQ can be expressed by Osstell Mentor. The result can be used to evaluate the healing process of surgically operated dental implant

Materials and Methods (1000 characters max.)

A total of fifty-five dental implants were inserted in the jaw bones of twenty-eight patients of Dankook University dental hospital using two-stage surgical procedure and implant stability was measured using resonance frequency analyzer, Osstell™ Mentor at first and second stage surgery. The data was collected and classified according to gender, implant length, implant diameter, and implanted site, maxilla and mandible. Mann-Whitney test, Wilcoxon-sighed rank test, Wilcoxon rank sum test, Kruskal-Wallis test and Nemenyi test were used to analyze the collected data. Statistical analyses were made between gender, implant length, implant diameter, and implanted site.

Results (1000 characters max.)

The primary implant stability was compared with secondary implant stability at first and second stage surgery using resonance frequency analyzer, Osstell Mentor, with which ISQ was recorded. Statistically significant difference was observed between primary and secondary implant stability ($P < 0.05$). There were no significant differences of ISQ with the gender nor implant length. However, significant difference was observed between the ISQ of mandibular and maxillary implant, and among implant diameters ($P < 0.05$). The results of Nemenyi test revealed that significant difference were observed between 3.5 mm and 5.0 mm diameter of implants in both first and second stage surgery ($P < 0.05$).

Conclusions and Clinical implications (500 characters max.)

In both stage surgery, higher ISQ values could be achieved in the mandible when compared with the maxilla. This result could be attributed to the different bone density between the mandible and the maxilla. Also wide diameter implant could be recommended to increase implant stability.