



Stony Brook
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Reverse Drilling Effect on Stability of Short Implants

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Introduction

The use of short implants in dentistry has been indicated for patients that are not able to undergo complex additional surgeries for medical, anatomic, or financial reasons.

Objective

The purpose of this study was to analyze the primary stability of short implants (ImplantSwiss®) by performing osteotomies in both a clockwise (control) and counterclockwise (test) direction (800 RPM) (Fig. 1).

Methods

Two groups of implants were used, both with lengths of 5mm. Group A (Ø 4.3mm) and Group B (Ø 4.8mm) each consisted of 30 osteotomies in type IV bone block polyurethane stimulants (15 in the control group and 15 in the experimental group). Insertion Torque (IT) and Implant Stability Quotient (ISQ) were recorded for each implant. Statistical analysis using ANOVA was performed comparing experimental and control groups.

Results

IT and ISQ values were extremely similar for both test groups.

(Test IT-A/B: $18.33 \pm 2.44 / 18.67 \pm 2.29$; Control: $17 \pm 3.16 / 18.67 \pm 2.29$).

(Test ISQ-A/B: $61.87 \pm 2.29 / 60.83 \pm 2.61$; Control: $61.2 \pm 1.63 / 61.93 \pm 2.43$).

No statistical significance was found between all groups (p-values: >0.05).

	Control A (Ø 4.3mm)	Control B (Ø 4.8mm)	Test A (Ø 4.3mm)	Test B (Ø 4.8mm)
Insertion Torque	17 ± 3.16	18.67 ± 2.29	18.33 ± 2.44	18.67 ± 2.29
ISQ	61.2 ± 1.63	61.93 ± 2.43	61.87 ± 2.29	60.83 ± 2.61

Table 1. IT and ISQ values of Test and Control Groups



Figure 1. ImplantSwiss® Short Implant (5mm)

Conclusion

Counterclockwise drilling does not seem to have any significant difference in primary stability in short (5mm) implants when compared to conventional drilling in artificial soft bone.