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[\[PDF \(375K\)\]](#) [\[References\]](#)**Marginal Fit and Microgaps of Implant-abutment Interface with Internal Anti-rotation Configuration**[Takuma TSUGE](#)<sup>1)</sup>, [Yoshiyuki HAGIWARA](#)<sup>2)3)4)</sup> and [Hideo MATSUMURA](#)<sup>2)3)</sup>

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**Abstract:**

To date, there is no evidence that internal anti-rotation configurations are better than external ones. As part of a study to clarify the features and advantages of internal anti-rotation configurations, the objective of the present investigation was to compare and evaluate the marginal fit and size of microgap at the implant-abutment interface for several external and internal anti-rotation configurations. To this end, three internal connection and two external hex connection implant-abutment assemblies were examined in this study. The implant-abutment interface (I-A interface) was evaluated using three geometrical factors: vertical and horizontal discrepancies and size of microgap. Marginal fit and microgap size were measured by a scanning laser microscope. The I-A interface was also observed using a scanning electron microscope. Mean vertical discrepancy ranged from 22.6 to 62.2  $\mu\text{m}$ , while horizontal discrepancy ranged from  $-27.1$  to 16.0  $\mu\text{m}$ . The microgap values of all I-A interfaces assessed in this study ranged from 2.3 to 5.6  $\mu\text{m}$ . In conclusion, SEM images of I-A interface suggested no relationship between the geometrical factors and the type of anti-rotation configuration.

**Key words:**[Implant-abutment interface](#), [Marginal fit](#), [Microgap](#)

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