

The present study found a more apically situated MBM in cases with a thick biotype. This is in contrast with the study by Evans and Chen,² showing more midfacial recession in cases with a thin biotype. It should be noted, however, that this study only included immediate implant cases. Furthermore, as stated in a recent systematic review,⁵ evidence to support increased risk for midfacial recession in patients with a thin biotype is limited. To what extent biotype is of significance needs further investigation.

Conclusions

The factors analyzed in this study account for only a small portion of the variance of the MBM position. The more an implant was placed to the buccal, the more the MBM was positioned apically. A comparable phenomenon was observed in cases with a thick biotype and in cases in which pre-implant bone augmentation was performed, whereas platform switching did not affect the level of the MBM.

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The authors reported no conflicts of interest related to this study.

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Literature Abstract

Accuracy of ceramic restorations made using an in-office optical scanning technique: An in vitro study

This study investigated the marginal and internal pre-cementation gap width of ceramic crowns made using an in-office digital impression technique and subsequent computer-aided design/computer-assisted manufacturing (CAD/CAM) fabrication. Two chairside digital impression systems, the Lava Chairside Oral Scanner (3M Espe) and Cadent iTero (now Align Technology), were used to make digital impressions of a typodont molar prepared with a 1.5 mm chamfer margin. Nine Lava (Lava Oral) and nine iTero (iTero Oral) all-ceramic crowns were produced from these digital impressions. In addition, 9 Lava (Lava Die Stone) and 9 iTero (iTero Die Stone) all-ceramic crowns were produced from the scans of stone die models made from addition-cured silicone impressions of the typodont tooth. Hot-pressed leucite-reinforced glass-ceramic crowns (Empress) made using die stone models, wax copings, and press casting were selected for comparison. A replica of the pre-cementation gap width of each crown was made by seating a crown filled with addition-cured light-body silicone impression material onto the typodont tooth. The crown was removed upon polymerization of the light-body impression material; a medium-body silicone impression material of a different color was then used to cover the polymerized light-body impression material. The polymerized impression materials were subsequently sectioned mesiodistally and buccolingually, and the thickness of the light-body impression material, which represented the pre-cementation gap width, was measured using a measuring microscope (x20) at 38 measuring points. The Lava Oral crowns showed a mean overall internal gap width of 162 μ m, which was significantly smaller than the other groups (174 to 183 μ m). The Empress crowns showed a mean marginal gap width of 170 μ m, which was significantly larger than those of the other groups (107 to 128 μ m). Occlusally, the gap width for iTero Oral and Lava Die Stone crowns was significantly larger than that of the Empress crowns. The authors concluded that an in-office digital impression technique can be used to fabricate ceramic crowns with a marginal and internal accuracy comparable to that of a conventional hot-pressed glass ceramic crown.

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