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### **One-Piece Mini-Implants Retaining Mandibular Overdentures: 10-Year Clinical and Radiological Outcomes**

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**Objectives Objectives:** To report the 10-year implant survival/success and peri-implant outcomes of one-piece mini dental implants (MDIs) retaining mandibular implant overdentures (IODs), including marginal bone-level alterations ( $\Delta$ MBLs), clinical peri-implant parameters, and technical and biological complications.

**Methods Material and Methods:** Twenty participants with horizontally atrophied mandibles received new, complete dentures at baseline; subsequently, four MDIs (diameter 1.8 mm) in the interforaminal region were placed. The dentures were converted into implant overdentures (IODs) retained by O-ring attachments immediately after the implant placement. The 10-year follow-up comprised radiological assessment of  $\Delta$ MBLs, peri-implant parameters, as well as biological and technical complications. A parametric regression analysis was used to compare  $\Delta$ MBLs during 0-5 years after implant placement to 5-10 years. Random-effects linear regression analyses were performed analyzing the effect of gender, implant position, and age on  $\Delta$ MBLs.

**Results Results:** Fourteen participants with a total number of 56 implants attended the 10-year follow-up examination. The implant survival rate was 100%. The overall mean  $\Delta$ MBL after 10 years was  $-1.12 \pm 0.80$  mm (Table 1). Forty-nine implants were classified as successful and 7 implants with a satisfactory survival due to a  $\Delta$ MBL 2 - 4 mm. A significant influence of the time after implant placement on  $\Delta$ MBL ( $p < 0.001$ ) was demonstrated, with stable MBLs after 5 years (mean  $\Delta$ MBL<sub>5-10 years</sub>:  $0.06 \pm 0.64$  mm). The prosthetic survival rate was 93%.  $\Delta$ MBLs were not influenced by implant position and gender. However,  $\Delta$ MBLs were significantly smaller in subjects older than 65 years (mean difference: 0.6mm;  $p = 0.031$ ).

**Conclusions Conclusions:** One-piece MDIs with O-ring attachments, retaining mandibular IODs, offer a reliable and successful treatment option for mandibles with horizontal bone loss after 10 years, with high implant- and prosthetic survival rates. Advanced age may have a beneficial effect on the peri-implant bone stability.