Clinical Evaluation of Mini Dental Implants for Mandibular Denture Retention

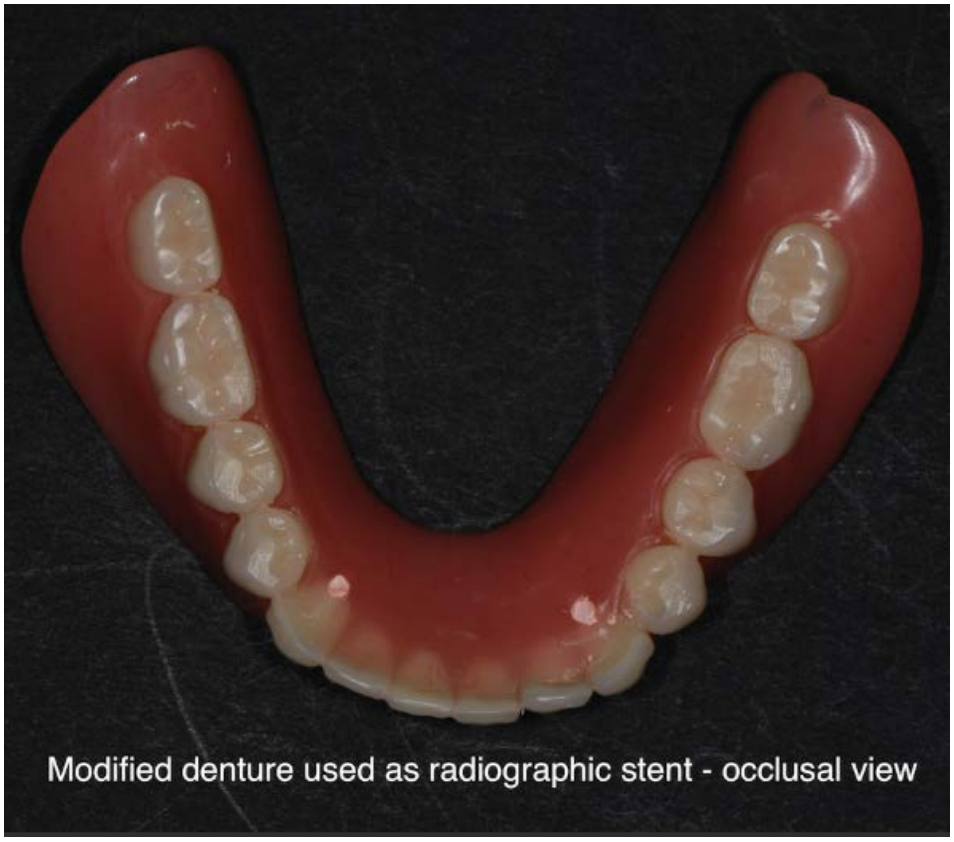
Abstract

***Purpose*:** The purpose of this study was to evaluate the clinical and participants-centred outcomes with the use of 2 mini dental implants for the retention of the complete mandibular denture.

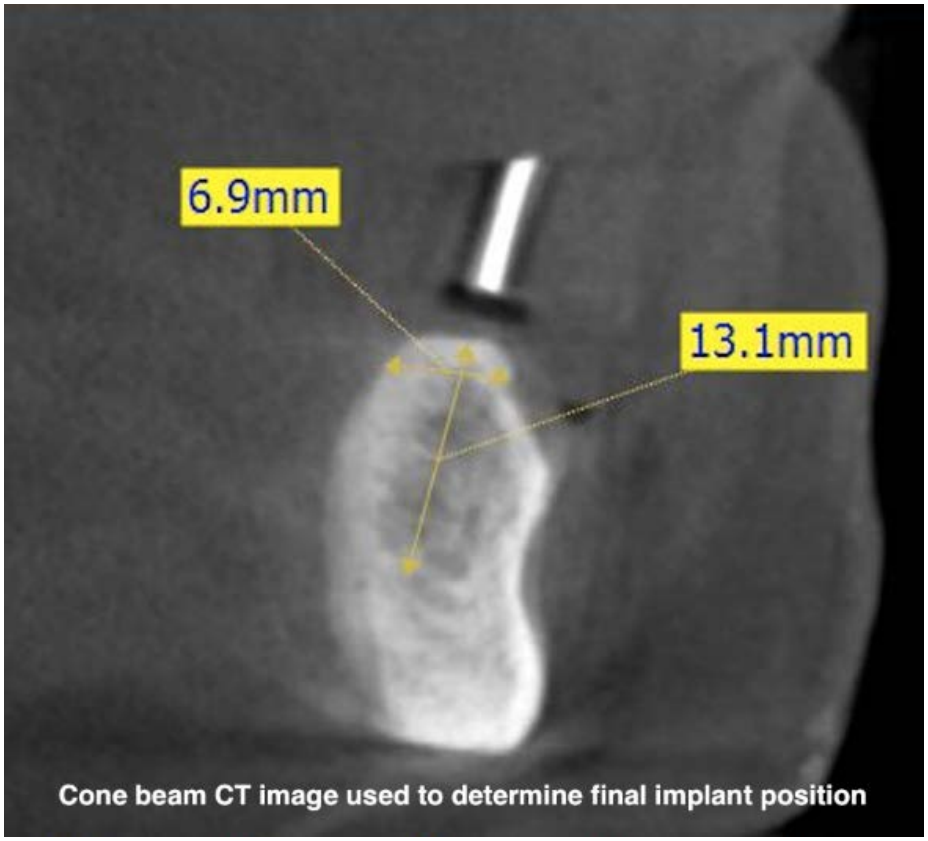
Material and Methods: 2 mini dental implants (2.1mm diameter and 10mm length) were placed in the mandible of 31 participants using a flapless surgical procedure. Dentures were connected to the implants after 2 months. Outcomes evaluations were done at the 3, 12, and 24 months intervals.

Results: 2-year implant survival / cumulative survival rates were 93.8% and 90.1% and the 2-year implant success / cumulative success rate were 93.8% and 86.5% respectively. Median VAS scores for function / comfort increased from 2.00 / 2.50 (control) to 10.00 / 9.00 (3-month), 9.50 / 9.50 (12-month) and 10.00 / 10.00 (24-month) respectively ($p<0.05$). Plaque Index, Gingival Index and Vertical Marginal Bone Loss increased ($p<0.05$) across the observation periods but not for Probing Depth and Horizontal Marginal Bone. An average of 4-5 incidences per participant occurred with regards to complications to their dentures.

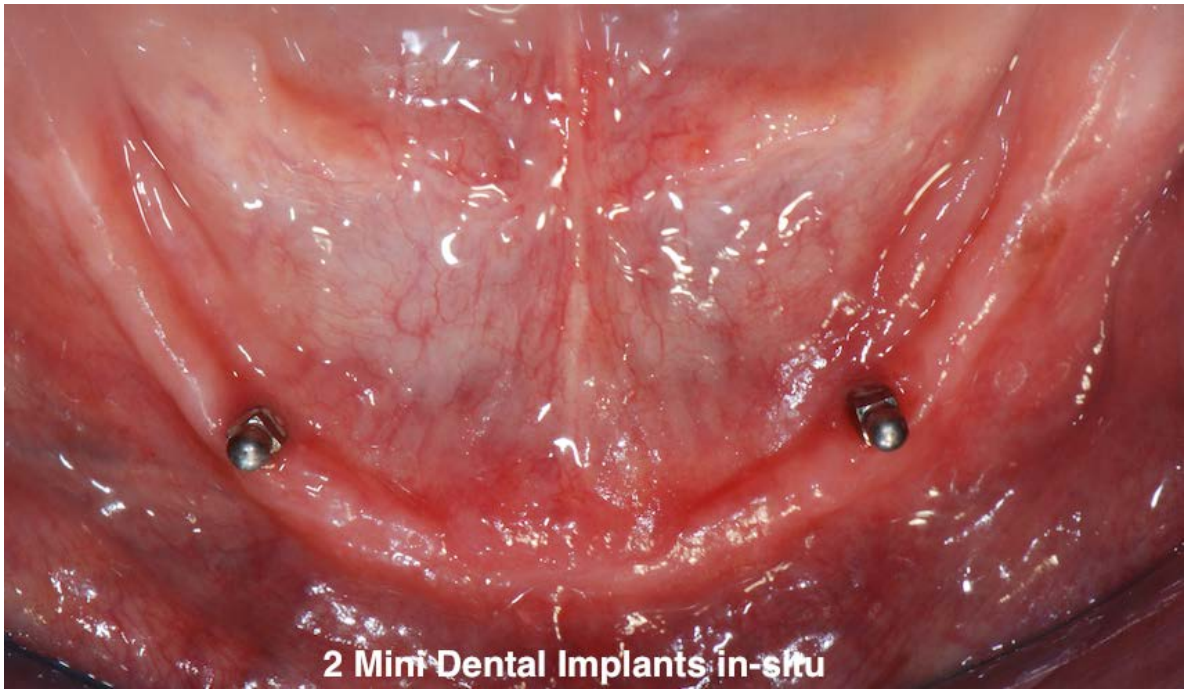
Conclusions: The results from this study indicated that placement of 2 mini dental implants can markedly improve the participants-centred outcomes of satisfaction with their complete lower dentures with good clinical outcomes.



Modified denture used as radiographic stent - occlusal view



Cone beam CT image used to determine final implant position



2 Mini Dental Implants in-situ

Lower denture relined with metal housings for connection to implants