

## Conclusions

This two-part patient treatment report demonstrated that it is possible to record the clinical information required for digital fabrication of provisional CDs in one appointment. The resulting digital data were used to fabricate an AvaDent-milled conversion denture that was easily modified into an immediately loaded fixed prosthesis at the time of guided surgical implant placement. After implant integration, the same data were used to digitally fabricate an AIRD—a custom tray with incorporated teeth—for use in making the impression for a definitive mandibular prosthesis. In addition, a milled AVJ was used to verify accurate connection of the temporary copings to the implant abutments. The AIRD not only functioned as a custom tray but also made it possible to capture an interocclusal record at the correct occlusal vertical dimension via the presence of prosthetic teeth on its occlusal surface and a denture base for mucosal orientation. The impression obtained in the AIRD and interocclusal record were then used to fabricate a definitive maxillary CD and a mandibular fixed CD with an incorporated titanium bar that attached to the implants.

## Acknowledgments

Dr Charles J. Goodacre is a consultant for Global Dental Science. The authors reported no conflicts of interest related to this study.

## References

1. Lozada J, Garbacea A, Goodacre CJ, Kattadiyil MT. Use of a digitally planned and fabricated mandibular complete denture for easy conversion to an immediately loaded provisional fixed complete denture. Part 1. Planning and surgical phase. *Int J Prosthodont* 2014;27:417–421.
2. Ma J, Rubenstein JE. Complete arch implant impression technique. *J Prosthet Dent* 2012;107:405–410.
3. Lee H, So JS, Hochstedler JL, Ercoli C. The accuracy of implant impressions: A systematic review. *J Prosthet Dent* 2008;100:285–291.
4. Kattadiyil MT, Goodacre CJ, Baba NZ. CAD/CAM complete dentures: A review of two commercial fabrication systems. *J Calif Dent Assoc* 2013;41:407–416.
5. English CE. Critical A–P spread. *Implant Soc* 1990;1:2–3.
6. Drago C, Howell K. Concepts for designing and fabricating metal implant frameworks for hybrid implant prostheses. *J Prosthodont* 2012;21:413–424.

## Literature Abstract

### Powered versus manual toothbrushing for oral health

This review reports the effects of using a powered (ie, electric) toothbrush compared with using a manual toothbrush for maintaining oral health. There are numerous types of powered toothbrushes available. Different powered toothbrushes work in different ways (such as moving from side to side or in a circular motion). Powered toothbrushes also vary drastically in price. It is important to know whether powered toothbrushes are more effective at removing plaque than manual toothbrushes and whether their use reduces the inflammation of the gums (gingivitis) and prevents or slows the progression of periodontitis. Authors from the Cochrane Oral Health Group carried out this review of existing studies and the evidence is current up to January 23, 2014. It includes 56 studies published from 1964 to 2011 in which 5,068 participants were randomized to receive either a powered or manual toothbrush. The majority of the studies included adults, and more than 50% of the studies used a type of powered toothbrush that had a rotation oscillation mode of action (where the brush head rotates in one direction and then the other). The evidence showed benefits in using a powered toothbrush when compared with a manual toothbrush. There was an 11% reduction in plaque for the Quigley Hein index (Turesky) in the short term and 21% reduction long term. For gingivitis, there was a 6% reduction (Löe and Silness Index) at 1 to 3 months of use and an 11% reduction when assessed after 3 months of use. The benefits of these results for long-term dental health are unclear. Few studies reported on side effects; any reported side effects were localized and only temporary. The evidence relating to plaque and gingivitis was considered to be of moderate quality.

**Yaacob M, Worthington HV, Deacon SA, Deery C, Walmsley AD, Robinson PG, Glenny AM.** *Cochrane Database Syst Rev* 2014 Jun 17; 6:CD002281. doi: 10.1002/14651858.CD002281.pub3. **Reprints:** Helen V. Worthington, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. Email: helen.worthington@manchester.ac.uk —Tee-Khin Neo, Singapore

Copyright of International Journal of Prosthodontics is the property of Quintessence Publishing Company Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.