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Accuracy of an intra-oral digital versus a conventional implant impression approach: A 3-dimensional comparative analysis

Scanning abutments allow clinicians to use digital intra-oral scanners to produce casts in order to fabricate implant-supported prostheses. The purpose of this study was to assess the accuracy of a digital impression approach and to compare it to a conventional impression technique. A simulated patient was fabricated with implants placed in posterior edentulous segments. Digital implant impressions were taken using an intra-oral scanner with scanbodies and conventional implant impressions were taken using an open-tray technique. 3-dimensional analysis and comparison of implant location on resultant working casts was performed using a laser scanner. A statistically significant difference between the two groups was found, with average 3-dimensional error of implant positioning of 116 μm and 56 μm for the digital group and conventional groups, respectively ($p=0.01$). Within the limitations of this study, the digital impression technique was less accurate than the conventional impression technique and did not produce working casts with clinically acceptable accuracy.

Biography

Hasan Alkumru was the Vice Dean and Head of Prosthodontics at Marmara University in Istanbul-Turkey prior coming to Canada. He was the Head of Department of Prosthodontics and Director of Graduate Prosthodontics Program and Director of Implant Prosthodontics Unit at The University of Toronto, Faculty of Dentistry in between 2011-2014. He has over 25 years of experience focused on clinical research and teaching to both undergraduate and postgraduate students internationally. He helped to develop a clinical program in the Department of Dentistry in Mount Sinai Hospital Toronto in 2010-11 to include advanced oral rehabilitation cases.

He was transferred to University of Western Ontario and moved to London ON in September 2014. He is re-establishing Removable Prosthodontics Course and he is the director of second year undergraduate prosthodontics course. He has published more than 60 articles in internationally known journals related to dental ceramics and implant supported prosthesis and an international lecturer. He is also giving Continuing Education Lectures throughout Ontario approved by Royal College of Dentists of Canada. He is a registered Specialist in Prosthodontics in Canada and fellow of Royal College of Dentists of Canada.

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