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A comparative evaluation in implant position and angulation accuracy executed through a universal open guide system: An *in vitro* studyPraful Mehra¹ and Hari Parkash²¹I.T.S Dental College, India²All India Institutes of Medical Sciences, India

Guided implant surgeries aided with cone beam computed tomography and stereolithography or 3-D printing has helped enhance precision in implant surgeries making them more prosthetically oriented. Recently many companies are coming up with universal open guide systems. However, it becomes imperative to know the level of accuracy of the universal open guide systems. Thus, a study was undertaken to analyze and compare the deviations in the position and inclination of the virtually planned and actually placed implants using universal open surgical guide. The purpose of this study was to determine and to compare the precision of 3-D image-guided implant rehabilitation *in vitro*. The implant positions and angulations were determined using a vision measuring machine. For the purpose of this study, a total of 24 implants were placed in 8 replaceable bone blocks which simulated the mandibular posterior edentulous bone. In each bone block, 3 implants were placed. These 24 implants were then evaluated for accuracy in linear (mesio-distal and vertical directions) and angular measurements. The baseline measurements were the CBCT derived planning for implant placement. Descriptive statistics was calculated for each variable of the group B (Guided Implant placement) with respect to the control group (CBCT) using '1-Sample T-test' in relation to each parameter studied i.e. vertical distance, linear distance and perpendicularity. It was concluded that the stereolithographic universal open guide used in the study may be considered accurate for placement of implants in horizontal or mesio-distal position and also in terms of perpendicularity but not in vertical position.

Biography

Praful Mehra has completed his Postgraduation in Prosthodontics in 2011 from India. He is Fellow of International Congress of Oral Implantologists, Diplomate of World Congress of Oral Implantologists Japan, Fellow of International College of Dentists and Fellow of Pierre Fauchard Academy. He was involved in teaching for six and half years after his post-graduation and was a PG Guide and Co-Guide for more than 8 researches. He was awarded Best Postgraduate Prosthodontics by ICD Section 6 in 2012. He has publications at both national and international level and maintains a private practice in New Delhi.

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