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Robotics in Implantology – Boon Or Bane

[1]Thabu Rani.C[1], Dr. Dhanalakshmi P[2] MDS, Dr. Bindu vaithilingam [3]MDS, & Dr Ashn S [4]MDS

[1]CRI Vinayaka Mission Sankarachariyar Dental College, Salem
[2]Assistant Professor, De Professor partment of Prosthodontics and Crown & Bridge, Vinayaka Mission's Sankarachariyar Dental College, Vinayaka Mission's Research Foundation (Deemed to be University), Ariyanoor, Tamil Nadu, India 636 308
[3]Professor, Department of Prosthodontics and Crown & Bridge, Vinayaka Mission's Sankarachariyar Dental College, Vinayaka Mission's Research Foundation (Deemed to be University), Ariyanoor, Tamil Nadu, India 636 308
[4]Assistant Professor, Department of Prosthodontics and Crown & Bridge, Vinayaka Mission's Sankarachariyar Dental College, Vinayaka Mission's Research Foundation (Deemed to be University), Ariyanoor, Tamil Nadu, India 636 308

Correspondence:
Thabu Rani C, CRI, Vinayaka Mission Sankarachariyar Dental College, Salem

Email Id: serviceheb@gmail.com

Abstract:

Robotic surgery is already a reality not just science fiction Currently, preoperative medical imaging and the doctor's clinical experience are the two main sources of support for dental implant surgery. Nonetheless, there are a few issues with dental implant surgery, including confined spaces, obstructions to vision, incorrect placement. Consequently, a robot for dental implants system (DIRS) with optical navigation guidance is created wherein an x-shaped tool and an irregular pentagonal tracer are constructed for needle tip positioning strategy and spatial registration, respectively. The coordinate framework through system calibration, spatial registration, and needle tip positioning method, each DIRS unit is brought together. Prior to surgery, the navigation software uses the computed tomography (CT) pictures to calculate the surgical course.In the process, the auxiliary positioning method and the automatic positioning method can be employed to obtain precise location and help medical professionals finish the procedure.

Key word: Robotic guided implantology, Fully autonomous robotic implantology, Robotic workflow, Yomi system

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