Microrobotics In Endodontics

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Commentary:
The Robotic technology has brought successful revolution in the field of medicine. Though, there is minimal exploration of the same in the field of dentistry, still it is considered to have a promising future. This involves dental training robots, realistic human like robots, Endo microrobot, dental nanorobots, surgical robots, sensor equipped implant setup robots, etc⁵. Endodontic therapy, is arduous and liable to iatrogenic errors like perforation, canal ledging, transportation, stripping, excessive instrumentation, inadequate canal preparation⁶. This led to a new probe of inception for eliminating the errors in hand operated endodontic therapy, by the project named Advanced Endodontic Technology. The success of the therapy mainly depends on expertise of the operator, which is acquired over the time with training and practice³. To overcome these problems, a robotic system was devised with visual guidance, positioned over the teeth, micro-sensors connected to the computer numerical control and 3-D root canal image processor to perform automatic treatment procedures (probing, access opening, cleaning, shaping and obturation). This technique improves the treatment quality, accuracy and efficiency⁴. Thus, the modern science and technology, brings about a new frontier in the field of endodontics.

References

Keywords: Actuator; Computer Numerical Control; Controller; Endodontic Microrobots; Micro-sensors
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