Title: Robotic microsurgery innovations: pioneering precision in delicate surgical procedures.

Author name: A.S. Vickram, Muthu C.M. Mathan, Talha B. Emran

Abstract: Robotic microsurgery is changing the way surgeons repair fragile tissues like nerves and blood arteries, where accuracy is vital. The conventional manner of microsurgery is restricted by the surgeon's ability to handle precise motions,since little tremorsin control may quickly lead to blunders in suturing or reattaching tiny vessels[1] . Robotic technologies address the issues by improving a surgeon's accuracy and reducing human error. Among the important advances in this discipline, the use of increasingly modern robotic platforms now enables them to achieve sub-millimeter precision[2] . These devices employ motion scaling to transform the surgeon's actions into very accurate, much smaller motions. Furthermore, they have greatly decreased hand tremors, allowing for solid and controlled motions even during the most sensitive treatments[3]

Keyword: Robotic Microsurgery, Surgical Robotics, Precision Surgery, Microsurgical Techniques, Nerve Repair, Blood Vessel Repair

DOI: 10.1097/IO9.0000000000000223