Introducing The First Intubation Robot

McSleepy developer uses "KIS" to increase precision and safety of intubation

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First there was McSleepy™. Now it’s time to introduce the first intubation robot operated by remote control. This robotic system named The Kepler Intubation System (KIS), and developed by Dr. Thomas M. Hemmerling, McGill University Health Centre (MUHC) specialist and McGill University Professor of Anesthesia and his team, may facilitate the intubation procedure and reduce some complications associated with airway management. The world’s first robotic intubation in a patient was performed at the Montreal General Hospital earlier this month by Dr. Hemmerling.

“The KIS allows us to operate a robotically mounted video-laryngoscope using a joystick from a remote workstation,” says Dr. Hemmerling who is also a neuroscience researcher at the Research Institute of the MUHC. “This robotic system enables the anaesthesiologist to insert an endotracheal tube safely into the patient’s trachea with precision.”

The insertion of an endotracheal tube allows artificial ventilation, which is used in almost all cases of general anesthesia. Correct insertion of this tube into patients’ airways is a complex manoeuvre that requires considerable experience and practice to master. “Difficulties arise because of patient characteristics but there is no doubt that there are also differences in individual airway management skills that can

influence the performance of safe airway management," says Dr. Hemmerling. "These influences may be greatly reduced when the KIS is used."

After successfully performing extensive tests in the airways of medical simulation mannequins, which closely resemble intubation conditions in humans, clinical testing in patients has now begun.

"High tech equipment has revolutionized the way surgery is done, allowing the surgeon to perform with higher precision and with almost no physical effort - I believe that the KIS can do for anesthesia what these systems have done for surgery", says Dr. Armen Aprikian, Director of MUHC's Department of Urology who performed surgery on the first patient treated using the KIS.

"We think that The Kepler Intubation System can assist the anesthesiologist's arms and hands to perform manual tasks with less force, higher precision and safety. One day, it might actually be the standard practice of airway management," concludes Dr. Hemmerling, whose laboratory developed the world's first anesthesia robot, nicknamed McSleepy, in 2008, which provides automated anesthesia delivery

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