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## New Robotic Surgery for Head and Neck Cancers



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UCLA researchers have reported that they have advanced a surgical technique performed with the help of a robot to access a previously-unreachable area of the head and neck. "This is a revolutionary new approach that uses highly advanced technology to reach the deepest areas of the head and neck," said Dr. Abie Mendelsohn, lead author of the study.

The novel method can now be used safely in patients to remove tumours that were previously thought to be inoperable, or necessitated the use of highly-invasive surgical techniques in combination with chemotherapy or radiation therapy.

The innovation provides the surgical community with a leading-edge technology roadmap to treat patients who had little or no hope of living cancer-free lives. "Patients can now be treated in a manner equivalent to that of a straightforward dental procedure and go back to leading normal, healthy lives in a matter of days with few or even no side effects," said Dr. Mendelsohn, UCLA Jonsson Comprehensive Cancer Center member and director of head and neck robotic surgery at UCLA.

The study was published online ahead of print in the journal *Head & Neck*.

### Transoral Robotic Surgery (TORS)

Approved by the US Food and Drug Administration in 2009, TORS uses the Da Vinci robotic surgical system, the state-of-the-art technology that was developed at UCLA by the specialised surgical programme for the head and neck. TORS employs a minimally invasive procedure in which a surgical robot, under the full control of a specially trained physician, operates with a three-dimensional (3D), high-definition video camera and robotic arms.

These miniature arms, the researchers explained, can navigate through the small, tight and delicate areas of the mouth without the need for external incisions. A retraction system enables the surgeon to see the entire surgical area at once. While working from an operating console just steps away from the patient's bed, every movement of the surgeon's wrists and fingers are transformed into movement of the surgical instruments.

Dr. Mendelsohn has refined, adapted and advanced the TORS techniques to allow surgical instruments and the 3D imaging tools to at last reach and operate safely within the parapharyngeal space, amongst other recessed areas of the head and neck.

### Traditional Surgical Options are Highly Invasive

The parapharyngeal space is a pyramid-shaped area that lies near the base of the human skull and connects several deep compartments of the head and neck. It is lined with many large blood vessels, nerves and complex facial muscles, making access to the space via traditional surgical options often impossible or highly invasive.

Current surgical methods can necessitate external incisions be made to the patient's neck, or the splitting of their jaw bone or areas close to the voice box. Chemotherapy and radiation therapy are also often required, further complicating recovery and potentially putting patients at risk for serious (or even lethal) side effects, the UCLA team noted.

Dr. Mendelsohn's new surgical procedure largely benefits patients with tumours located in the throat near the tonsils and tongue, but it continues to be adapted and expanded in scope and impact.

"We are tremendously excited about the possibilities for the surgical community with this new advancement of TORS," Dr. Mendelsohn said. "Now patients have options they never had before, and we can even develop potential applications for the procedure beyond the surface of the head and neck."

Source: Newswise.com  
Image Credit: UCLA

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