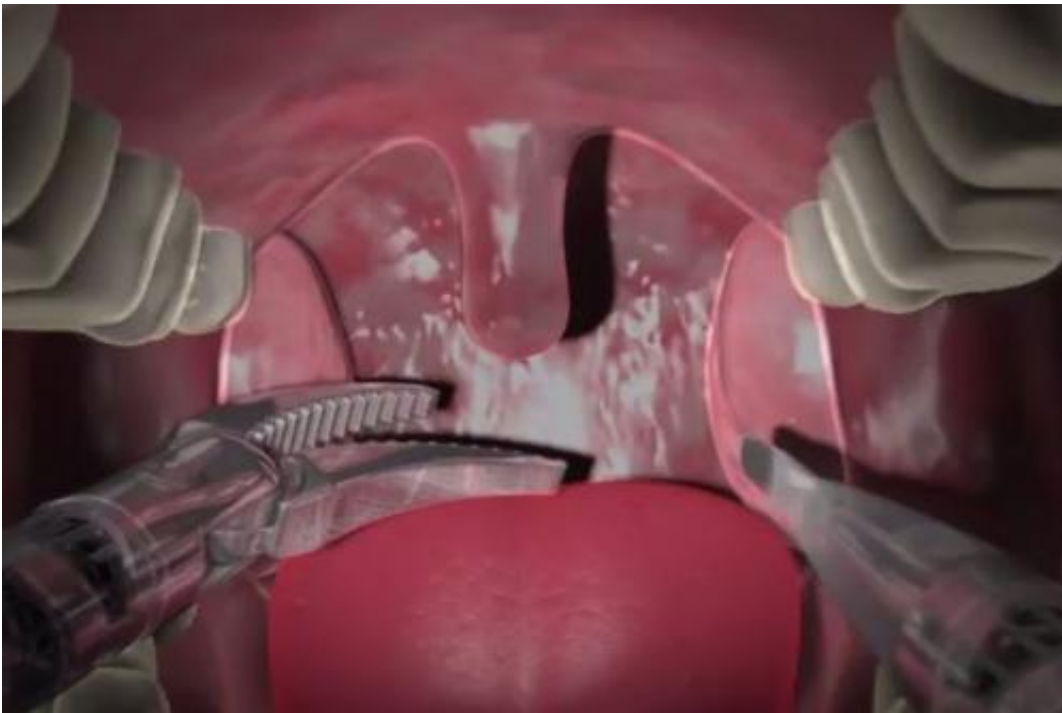


# Researcher develops robotic surgery technique to treat previously inoperable head and neck cancer

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Computer animation of how advances in robotic surgery allow surgeons to remove cancer tumors in the head and neck in a minimally invasive way. Credit: UCLA Jonsson Comprehensive Cancer Center

In a groundbreaking new study, UCLA researchers have advanced a robotic surgical technique to successfully access a previously unreachable area of the head and neck.

This pioneering method can now be used safely and efficiently in [patients](#) to remove tumors that many times were previously considered inoperable, or that necessitated the use of highly-invasive surgical techniques in combination with chemotherapy or [radiation therapy](#).

Developed by Dr. Abie Mendelsohn, UCLA Jonsson Comprehensive Cancer Center member and director of head and neck [robotic surgery](#) at UCLA, this new approach provides the surgical community with a leading-edge technology roadmap to treat patients who had little or no hope of living cancer-free lives.

"This is a revolutionary new approach that uses highly advanced technology to reach the deepest areas of the head and neck," said Mendelsohn, lead author of the study. "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."

The parapharyngeal space is 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 techniques 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.

Approved by the U.S. Food and Drug Administration in 2009, Trans Oral Robotic Surgery (or TORS) utilizes the Da Vinci robotic surgical system, the state-of-the-art technology that was developed at UCLA by

the specialized surgical program for the head and neck. TORS uses a minimally invasive procedure in which a surgical robot, under the full control of a specially trained physician, operates with a three-dimensional, high-definition video camera and robotic arms.

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

Over the course of the robotic program's development, Mendelsohn refined, adapted and advanced the TORS techniques to allow [surgical instruments](#) and the 3-D imaging tools to at last reach and operate safely within the parapharyngeal space and other recessed areas of the head and neck.

Currently, Mendelsohn's new procedure largely benefits patients with tumors 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," said Mendelsohn. "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."

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

David Alpern: one patient's story

In 2012, David Alpern received devastating news. He was diagnosed with throat cancer, and the treatment options given to him by his doctors sounded worse than the disease.

"They described a procedure where your face is split in half and it's basically reconstructive surgery. I was completely freaked out," said Alpern, a husband and father of two.

After careful examination and imaging at UCLA, Mendelsohn determined that Alpern was a perfect candidate for TORS. Alpern was up and about just days after the procedure. Like the more than 100 similar TORS surgeries performed with Mendelsohn at the controls, Alpern's tumor was removed and he's now cancer free.

"I try not to get too cocky or excited that I beat cancer, but I think I did," Alpern said. "There are no side effects at this point. My hopes are just to watch my kids grow up and enjoy my family and my life."

Provided by University of California, Los Angeles

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