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Robotic surgery effective for removing hard-to-reach throat cancer

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Robotic surgery has become a mainstream tool for removing an ever-increasing variety of head and neck tumors. Now, a team of head and neck surgeons from Mayo Clinic has found robotic surgery can treat cancer in the narrow, hard-to-reach area beyond the tongue at the top of the voice box. Some patients were able to avoid further treatment with chemotherapy or radiation, and most could resume normal eating and speaking.

"We've known it's useful for tongue base and tonsil cancers, but we wanted to assess its effectiveness in the larynx," says Kerry Olsen, M.D., Mayo Clinic otolaryngologist and senior author of the study that was presented April 29 at the Combined Otolaryngological Spring Meetings in Chicago.

The investigation of transoral robotic surgery (TORS) followed nine patients for up to three years following removal of supraglottic squamous cell carcinoma, which affects the area of the larynx above the vocal cords. Most of the patients had advanced-stage disease. The results showed TORS effectively removed cancer, with "clean," disease-free margins, and was easier to perform than the approach of transoral laser microsurgery via a laryngoscope. The patients also underwent the surgical removal of their adjacent neck nodes at the same operation.

"We were pleased with the cancer outcomes," Dr. Olsen says. "We also found patients had minimal trouble after surgery, in most cases resuming normal eating, swallowing and speaking."

With TORS, the robotic arms that enter the mouth include a thin camera, an arm with a cautery or laser, and an arm with a gripping tool to retract and grasp tissue. The surgeon sits at a console, controlling the instruments and viewing the three-dimensional surgical field on a screen. "The camera improves visibility," Dr. Olsen says. "We also gain the ability to maneuver and see around corners and into tight spaces, and we believe we'll now be able to take out more throat tumors than with traditional approaches of the past."

The new application of TORS comes at the right time, Dr. Olsen notes. Cancers of the tongue and throat are on the rise. Not all patients will be candidates for robotic surgery; its use will depend on the architecture of a patient's throat and neck, along with the type and extent of the tumor. "What we know from this study is that for larynx cancer, we have another effective surgical tool available to us," he says. "We can further tailor the cancer treatment for each patient and provide individualized care."

Provided by Mayo Clinic