Many patients with advanced form of larynx cancer not receiving recommended treatment

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Despite findings of previous studies and published guidelines, nearly two-thirds of patients with T4a larynx ("voice box") cancer are not receiving a total laryngectomy (surgical removal of the larynx), the recommended form of treatment, and as a result, have significantly worse survival rates versus those treated with a total laryngectomy, a new study published in the *International Journal of Radiation Oncology, Biology and Physics* by experts at Penn Medicine found. Patients who underwent a laryngectomy, on average, lived nearly two years longer than those on chemotherapy and radiation therapy.

"Larynx preservation via chemoradiation is an excellent, organ-preserving option to total laryngectomy for many patients with less advanced larynx cancers," said Alexander Lin, MD, an assistant professor and chief of Head and Neck Service in the department of Radiation Oncology at the Perelman School of Medicine at the University of Pennsylvania, the study's senior author. "But it's inferior for patients with the most locally-advanced larynx cancers. These patients should be treated with a total laryngectomy—and our study shows that most of them are not."

In stage T4a larynx cancer the tumor grows through the thyroid cartilage and/or into tissues beyond the larynx, such as the thyroid gland, trachea, esophagus, tongue muscles, or neck muscles.

The all-Penn study identified 969 patients from 2003 to 2006 who received curative-intent treatment for T4a larynx cancer from the
National Cancer Database. A total of 616 patients (64 percent) received larynx preservation chemoradiation, and 353 (36 percent) received total laryngectomy. Median overall survival for total laryngectomy patients was 61 months versus 39 months for patients receiving chemoradiation.

The survival of patients with stage T4a larynx cancer who are untreated is typically less than one year. The symptoms associated with untreated disease include severe pain and inability to eat, drink, and swallow. Death can frequently occur due to asphyxiation of the airway from the untreated tumor.

The study's first authors include Surbhi Grover, MD, MPH, an assistant professor of Radiation Oncology and Samuel Swisher-McClure, MD, an assistant professor of Radiation Oncology.

"We were surprised to find that nearly two-thirds of patients with stage T4a larynx cancer are not being treated with a total laryngectomy," Grover said. "But we were not surprised to find that overall survival was significantly better with total laryngectomy compared to larynx preservation, given the results of previous studies, which served as the basis for the best-practice guidelines now in place."

It is unclear why the well-established guidelines for treatment of T4a larynx cancer were not followed in the cases examined by the Penn team.

Possible reasons include providers misunderstanding or misapplying the guidelines, or patients being informed that total laryngectomy is the preferred treatment, but refusing it against medical advice and opting for chemoradiation due to concerns about quality of life and loss of normal voice function after total laryngectomy.

"Patients and providers need to be aware of and educated on the proper
indications for both larynx preservation and total laryngectomy, so that the best medical treatment options can be discussed and offered for each patient," Lin said. "There may be select cases where patients with this serious form of cancer can be successfully treated with chemoradiation, but those cases will be far fewer in number than the figure we uncovered in our study."

He continued: "We also need to educate patients on the various methods of voice rehabilitation after total laryngectomy, in order to de-stigmatize the procedure, and the possible effects on quality of life that such surgery may have."

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