

Voice-saver: Light therapy for early-stage laryngeal cancer

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Light, or photodynamic, therapy can help preserve the voice and vocal cord function for patients with early stage laryngeal (voice box) cancer, according to a study from Henry Ford Hospital in Detroit.

"Photodynamic therapy is an effective treatment for early laryngeal squamous cell carcinomas, offering patients a less invasive option with fewer side effects than other therapies, while preserving the voice," says study co-author Vanessa G. Schweitzer, FACS, M.D., a senior staff physician in the Department of Otolaryngology-Head & Neck Surgery at Henry Ford.

The study will be presented Jan. 29 at the Triological Society's Combined Section Meeting in Scottsdale, Ariz.

Each year in the United States, more than 10,000 people are diagnosed with laryngeal cancer. Those who smoke and drink alcohol are at a greater risk, according to the National Cancer Institute. Laryngeal cancer is most commonly treated with radiation therapy alone or in combination with surgery or chemotherapy.

But photodynamic therapy offers some patients another option.

"It is a good alternative to radiation and surgery for early staged lesions. It can preserve function and allow us to reserve use of radiation therapy and surgery – both known to have more functional impairment on vocal cord function – should the cancer recur following photodynamic

therapy," says study lead author Melissa L. Somers, M.D., with the Department of Otolaryngology-Head and Neck Surgery at Henry Ford.

Having already performed more than 200 procedures – more than any other hospital in Michigan – Henry Ford physicians are center stage in the application and research for this procedure.

Photodynamic therapy works by destroying deadly cancer cells without harming surrounding healthy tissue. It uses a powerful laser and a nontoxic, light-activated drug called PHOTOFRIN. The laser activates the drug, causing a reaction in the [cancer](#) cells and destroying them.

Since photodynamic therapy does not damage the underlying tissue, it not only allows for multiple treatments but also for it to be given prior to or following other therapies, and when radiation therapy fails.

However, there is not a consensus in research literature as to which treatment – surgery, [radiation therapy](#) or photodynamic therapy – produces the best outcome for voice preservation.

The current Henry Ford study focuses on 10 patients with early stage squamous cell tumors of the larynx treated with photodynamic therapy. The study assessed how well the vocal cords moved following photodynamic therapy.

Both before and after photodynamic therapy, patients underwent videostroboscopy exams, a state-of-the-art technique that provides a magnified, slow-motion view of the vocal cords in use. The technique uses a small, angled telescope inserted through the mouth or nose to measure vocal cord vibrations while patients repeat words or sounds.

Results were analyzed by a speech language pathologist and laryngologist specializing in voice disorders for vocal cord movement and vibration.

During the first five weeks following treatment, researchers noted a significant worsening in the non-vibrating portion of the affected vocal cords, which is expected, says Dr. Somers.

Ten weeks following treatment, there was a noticeable improvement.

"In our study, patients undergoing PDT demonstrated initial significant impairment in the vocal cord vibratory parameters of mucosal wave, non-vibrating vocal cord and amplitude of vibration as well as appearance of vocal cord edge for both the tumor and non-tumor side," says Dr. Somers. "Most notably, over the course of a few weeks and months, there were consistent trends toward normal [vocal cord](#) vibration."

Patients do experience minor side effects from treatment such as photosensitivity, making them more sensitive to light and susceptible to severe sunburns. This lasts for about four weeks following the procedure. Patients also may experience temporary hoarseness.

Dr. Somers hopes future studies are aimed at a prospective comparison of photodynamic therapy to surgery and radiation and subsequent voice production results.

Provided by Henry Ford Health System

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