

MGH researchers report successful new laser treatment for vocal-cord cancer

May 6 2008

An innovative laser treatment for early vocal-cord cancer, developed at Massachusetts General Hospital (MGH), successfully restores patients' voices without radiotherapy or traditional surgery, which can permanently damage vocal quality. This new option for patients, which has now been used in more than 25 patients, was reported on May 1 at the annual meeting of the American Broncho-Esophagological Association, and the data will soon be published as a supplement to the *Annals of Otology, Rhinology, & Laryngology*.

“We had previously adapted lasers that target blood vessels to treat precancerous vocal-cord dysplasia and a variety of benign vascular lesions. We have now applied that experience to treat vocal-cord cancer, which is diagnosed in several thousand American patients each year,” says Steven Zeitels, MD, director of the MGH Voice Center.

Zeitels' team began applying pulsed lasers to the treatment of early vocal-cord cancer more than five years ago. After successfully treating the first eight patients with the pulsed-dye laser, Zeitels' group switched to the more precise pulsed Potassium-Titanyl-Phosphate (KTP) laser, which is even less likely to damage delicate vocal-cord tissue. The use of specific wavelengths of laser light to target blood vessels was originally applied to the removal of vascular skin lesions like port-wine stains by Rox Anderson, MD, now director of the MGH Wellman Center of Photomedicine. In a close collaboration with Anderson, Zeitels previously developed application of these angiolytic lasers to benign and precancerous vocal-cord lesions.

As Zeitels reported at the ABEA meeting, the first 22 patients receiving pulsed laser treatment for vocal-cord cancer are cancer-free up to 5 years after treatment, without removal of vocal-cord tissue or loss of voice quality. Some have required second or third laser treatments to remove residual disease, but another benefit of the therapy is that it does not rule out future therapeutic options. Zeitels notes that this treatment has become a standard management approach at MGH and should soon spread to other institutions in the US and abroad. He estimates that 90 percent of patients with early vocal-cord cancer would be candidates for pulsed-KTP laser treatment.

“Currently the optimal angiolytic laser for vocal-cord problems, the pulsed-KTP laser is a critical innovation in the instrumentation arsenal of the laryngeal surgeon,” says Zeitels. “It has greatly enhanced the precision by which we can perform many procedures for chronic laryngeal diseases, both in the operating room, accompanied by the surgical microscope, and in the office.” Zeitels is the Eugene B. Casey Professor of Laryngeal Surgery at Harvard Medical School (HMS).

The MGH Voice Center team has created a number of groundbreaking procedures and was the first in the world to treat vocal cords and other structures in the larynx with controlled pulses of the green KTP laser light. Zeitels has been recognized for his 2006 use of pulsed-KTP laser to treat Steven Tyler of the rock band Aerosmith for vocal-cord hemorrhage. With his unique perspective on voice restoration and preservation resulting from years of treating elite singers, Zeitels was called on to work with Julie Andrews after she lost her singing voice due to a failed surgical procedure. He subsequently has collaborated with Miss Andrews to increase awareness of voice problems and spearhead a research project investigating new voice restoration surgical procedures.

Source: Massachusetts General Hospital

Citation: MGH researchers report successful new laser treatment for vocal-cord cancer (2008, May 6) retrieved 24 April 2024 from <https://medicalxpress.com/news/2008-05-mgh-successful-laser-treatment-vocal-cord.html>

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