



ORAL PRESENTATION

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# CO<sub>2</sub> laser transoral laser microsurgery of head and neck cancer: lessons learned over ten years

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From 2nd Scientific Meeting of the Head and Neck Optical Diagnostics Society  
San Francisco, CA, USA. 23-24 January 2010

## Background

CO<sub>2</sub> transoral laser microsurgery (TLM) is an emerging technique for the management of laryngeal cancer and other head and neck malignancies. This technique has become more widely used by head and neck surgeons progressively replacing traditional open surgical procedures because it is better at preserving organ function with lower overall morbidity. The CO<sub>2</sub> laser is coupled to a micromanipulator and microscope, which provides enhanced tumor visualization and the ability to perform precise tissue cuts, obtain excellent hemostasis, and avoid damaging the surrounding tissues and structures that are transected during open surgical procedures.

## Objectives

To summarize our experience using the CO<sub>2</sub> laser for the transoral resection of head and neck cancer, and discuss strategies and solutions for situations encountered during laser resections.

## Material and methods

The basic principles and approach of performing TLM using CO<sub>2</sub> laser for different otolaryngologic malignancies will be discussed. The benefits of using CO<sub>2</sub> TLM over traditional surgery, common complications, and different settings used depending on the location of the tumor and as well as the several lessons learned over the years will also be discussed.

## Conclusion

CO<sub>2</sub> laser is the best-suited laser for TLM in treatment of head and neck cancer. Over the years the improved instrumentation, demonstration of oncologic effectiveness, clinical experience using TLM and decreased

morbidity has led to an increased utilization of TLM by head and neck surgeons. Successful surgery requires adequate visualization, precise cutting, controlled depth of tissue penetration, and ability to obtain tissue hemostasis. The full spectrum of laser power settings, spot sizes and energy pulse delivery modes is utilized to resect mucosa, fat, muscle, connective tissue and cartilage while avoiding inadvertent damage to nerves and large vessels, and obtaining adequate hemostasis.

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Published: 29 October 2010

doi:10.1186/1758-3284-2-S1-O37

**Cite this article as:** Armstrong and Rubinstein: CO<sub>2</sub> laser transoral laser microsurgery of head and neck cancer: lessons learned over ten years. *Head & Neck Oncology* 2010 **2**(Suppl 1):O37.

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