**ABSTRACT**

Objectives: To describe a rare case of adult laryngeal rhabdomyoma and explain its surgical management via an endoscopic approach with the CO₂ laser fiber.

Study Design: Case Report

Methods: Case report and literature review with photographic illustration of surgical technique utilizing CO₂ laser fiber for successful endoscopic management of adult laryngeal rhabdomyoma.

Results: Patient is a 60-year-old male who was referred to our department with worsening hoarseness over the last 20 years. Initial panendoscopy and biopsy demonstrated laryngeal rhabdomyoma that was occupying the right hemilarynx with right arytenoid immobility. The patient underwent successful endoscopic vertical partial laryngectomy with the Omniguide® CO₂ laser fiber. The patient did not need a tracheostomy and was tolerating a regular diet on post-operative day 2 and had an adequate voice. Surveillance MRI's have shown no recurrence of disease.

Conclusions: Adult laryngeal rhabdomyoma is a rare entity that is typically managed by an open laryngeal procedure for large tumors. These can now be successfully managed with excellent results using the latest transoral endoscopic techniques in conjunction with the CO₂ laser fiber.

**INTRODUCTION**

Rhabdomyoma is a rare, benign tumor of striated muscle. The traditional approach to cure is with an open laryngeal procedure to completely extirpate the tumor. Here we present a case of rhabdomyoma of the larynx that was successfully treated by endoscopic partial laryngectomy with fiber-based CO₂ laser.

**ENDOSCOPIC PARTIAL LARYNGECTOMY WITH THE CO₂ LASER FIBER**

For the exposure, the Steiner Supraglottoscope and masses. Successful excision using the microscope-mounted CO₂ laser fiber was first directed anteriorly to bivalve the epiglottis and take down the right aryepiglottic fold. Dissection with the laser fiber continued along the midline inferiorly to the level of the petiole. Once the epiglottis was removed, the anterior extent of this tumor was better visualized. The dissection continued posteriorly along the arytenoid in order to release the tumor anteriorly. Dissection was carried out along the arytenoid and tumor was separated from the vocal process. Laterally this tumor was noted to be extending into the pyriform sinus and the upper esophagus. The attachment to the pharyngoepiglottic folds was divided. In order to improve exposure in the presence of this large tumor, the tumor was split in half medially and released in two portions.

**DISCUSSION**

Transoral laser resection is an established therapeutic modality for supraglottic tumors and masses. Successful excision using the microscope-mounted CO₂ laser was first reported in 1978, and has been shown to decrease aspiration pneumonias, need for tracheotomies, and formation of fistulas. The length of hospital stay and time needed for swallowing rehabilitation are also reduced.

**ADVANTAGES OF FIBER-BASED CO₂ LASER**

- Ease of hand rotation under the microscope (microscope-mounted CO₂ lasers are limited to line-of-sight, preventing dissection around objects)
- Greater freedom of motion, increased surgical line-of-sight, preventing dissection around objects)
- Tremor due to holding the fiber in hand and movement of the hand and the laser could be used similar to a scalpel in open surgery. This allowed for successful endoscopic removal of the mass without need for an open partial laryngectomy.

**DISADVANTAGES OF FIBER-BASED CO₂ LASER**

- Limits of surgeon experience.

In this case, the fiber-based CO₂ laser proved more effective than the microscope-mounted CO₂ laser since it allowed greater freedom of movement of the hand and the laser could be used similar to a scalpel in open surgery. This allowed for successful endoscopic removal of the mass without need for an open partial laryngectomy.

**CONCLUSIONS**

- Adult laryngeal rhabdomyoma is a rare entity that is typically managed by an open laryngeal procedure for large tumors.
- These can now be successfully managed with excellent results using the latest transoral endoscopic techniques and the utilization of the CO₂ laser fiber.

**REFERENCES**