Transoral Laser Microsurgery vs Radiotherapy for Aryepiglottic Fold Squamous Cell Carcinoma: A National Database Study

Nrusheel Kattar, MD[1]; Srivatsa Surya Vasudevan MD, MS[1] ; Noah Spillers[2] ; Victor Albornoz Alvarez, MD[1]; Lindsay Olinde, MD [1,2] ; Karuna Dewan, MD [1,2]

[1] Department of Otolaryngology- Head and Neck Surgery, LSU Health Sciences Center, Shreveport, LA, USA

[2] LSU Health Shreveport School of Medicine, Shreveport, LA, USA

Introduction

- **Aryepiglottic fold squamous cell carcinoma (SCC)** has traditionally displayed an **aggressive** growth pattern, often presenting at **late stages**
- **Non-surgical treatment** is frequently preferred due to **poor functional outcomes** associated with **extensive laryngopharyngeal resections**
- With the **increased recent use of transoral laser microsurgery (TLM)** for targeted surgical resection of early-stage SCC, we sought to analyze survival data for patients with **T1/T2 aryepiglottic fold SCC** undergoing **primary surgery with TLM** compared to **definitive radiation**

Methods and Materials

- Patients from the **National Cancer Database (NCDB)** with **cT1/cT2 aryepiglottic fold SCC** undergoing definitive treatment from **2004 to 2018** were analyzed
- Differences in demographic data between groups were analyzed using the **two-sample T-test** and the **Mann-Whitney U-test**
- The primary outcome was **overall survival** for **primary surgery (+/- adjuvant treatment, PS)** versus **primary radiation (+/- chemotherapy, RT +/- C)**

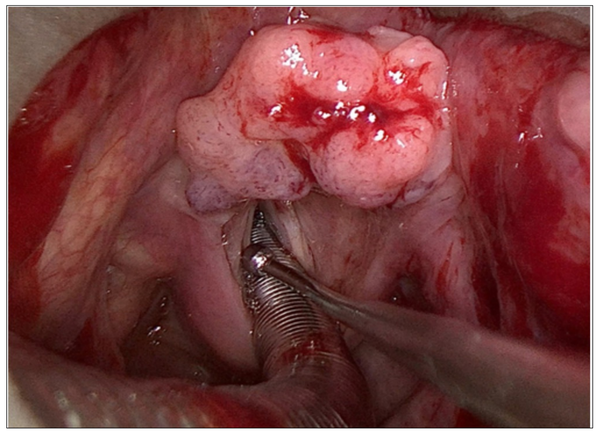

Figure 3: Endoscopic View of TLM for AE Fold SCC

Results

- In total, **16,921** patients fit the inclusion criteria with **a median age of 63 (IQR 56-70)** and a **65.2% male** population
- **Median survival** time for patients undergoing **PS with TLM** was **82.6 months (IQR 32.1-164.5)** versus **52.7 months for RT +/- C** (95% CI 44.9-50.7, p<0.001)
- **Mantel-Haenszel survival analysis** revealed a **lower risk of death** with **PS with TLM** compared to **RT +/- C** when controlling for age, sex, medical comorbidities, and tumor stage (**RR 0.67, 95% CI 0.60-0.74**)
- **Multivariable Cox proportional hazards survival analysis** also demonstrated that **PS was associated with a lower chance of death (HR 0.77, 95% CI 0.66-0.92)** compared to RT +/- C, though **positive margins in the TLM group** did not significantly increase risk of death (HR 1.02, 95% CI 0.99-1.05)

Highlights

- While historically underutilized, **primary surgery with TLM** for **early-stage aryepiglottic fold SCC** presents a **promising alternative** to traditional **RT +/- C regimens**
- However, **a prospective analysis of swallowing and speech outcomes** is necessary to determine if the functional outcomes of TLM reflect the survival benefits

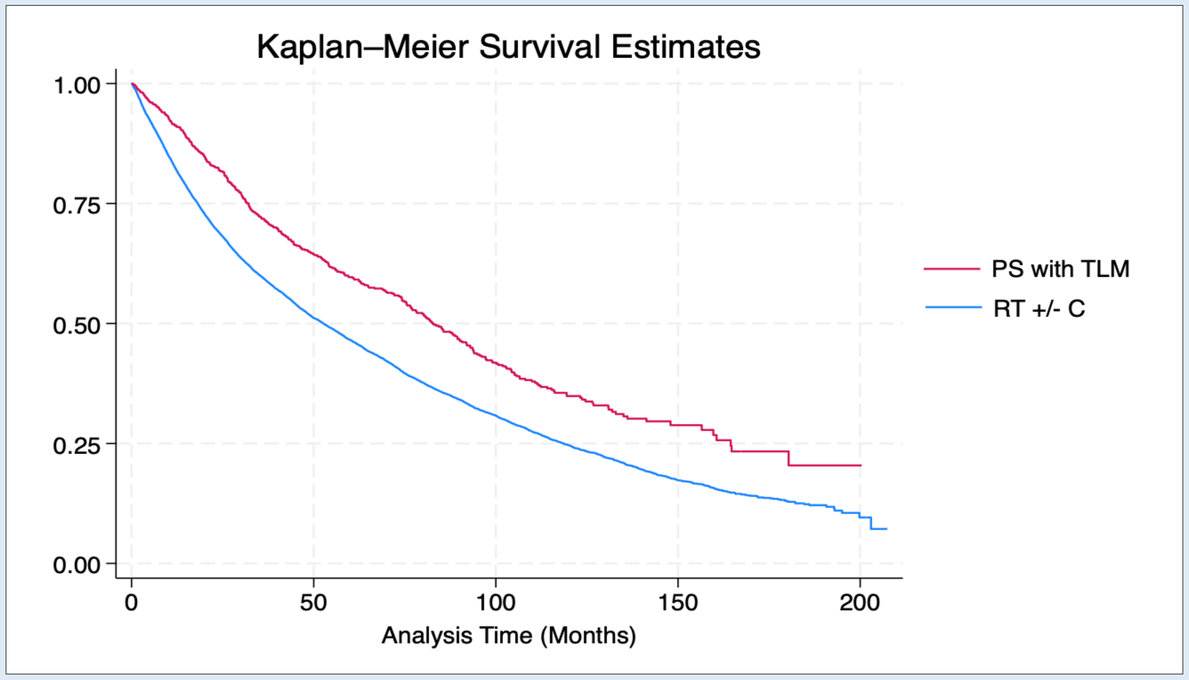

Figure 1: Overall Survival Estimates for Transoral Laser Microsurgery vs Radiotherapy for Aryepiglottic Fold Squamous Cell Carcinoma

Contact

Nrusheel Kattar, MD
PGY-4
Otolaryngology – Head and neck Surgery
LSU Health Shreveport
Nrusheel.kattar@lsuhs.edu

AAO-HNSF 2025 Annual Meeting & OTO EXPO℠ OCTOBER 11-14 INDIANAPOLIS, INDIANA

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