



When the Esophagus Meets the Aryepiglottic Fold: Airway Considerations for Laser-Assisted Excision of Massive Esophageal Mass

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Background

- Esophageal tumors can manifest in a wide variety of presentations, including the rare extension to supraglottic structures.
- Excision of these tumors can be especially challenging, given risks of difficult airway management, shared airway with surgical team, and potential for airway fires.
- A thorough evaluation of the airway through patient interview, diagnostic tests, and physical exam as well as multidisciplinary coordination are critical in navigating these complex cases.

Case Presentation

A 77-year-old male with history of diabetes and esophageal liposarcoma status post endoscopic resection 5 years prior presented with recurrence of dysphagia and was scheduled for outpatient esophagogastroduodenoscopy (EGD).

CT Chest and Neck with IV contrast

- Heterogenous fat-containing lesion within the proximal to mid esophagus measuring ~13.7 cm in the craniocaudal dimension with maximal cross-sectional area measuring ~4.8 cm x 3.8 cm, likely representing recurrent esophageal liposarcoma (**Figure 1A-C**)
- Fat-containing heterogenous lesion centered in the right paraglottic fat compatible with liposarcoma measuring 2.0 cm x 1.9 cm x 2.3 cm resulting in mass effect or possible infiltration on right aryepiglottic fold as well as effacement of right piriform sinus and right supraglottic larynx (**Figure 1D**)

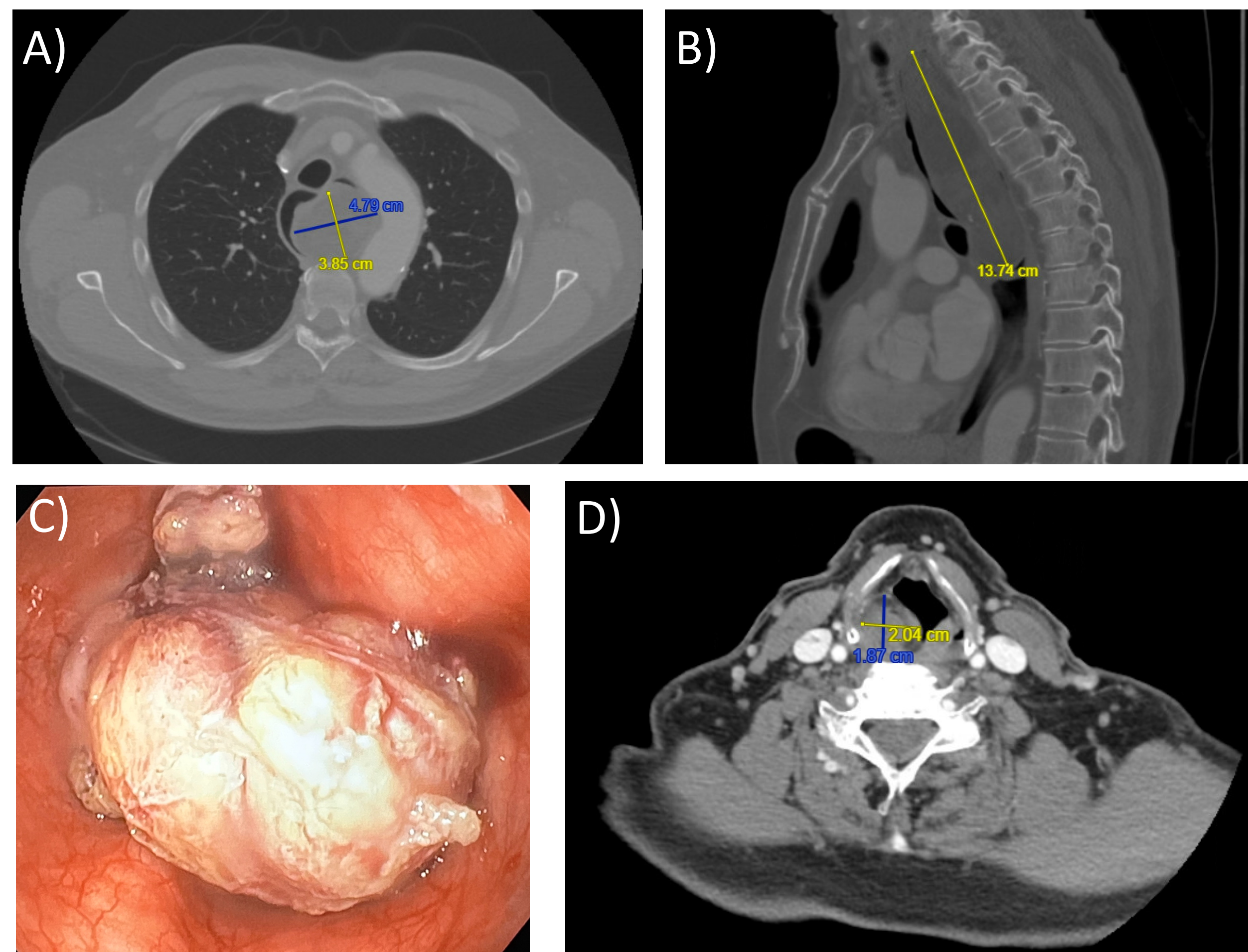


Figure 1A) and 1B): Heterogenous fat-containing lesion measuring 13.7 cm x 4.8 cm x 3.8 cm compatible with liposarcoma on CT chest. **1C):** Esophageal mass visualized on rigid esophagoscopy. **1D):** Heterogenous fat-containing lesion centered in right paraglottic fat measuring 2.0 cm x 1.9 cm x 2.3 cm compatible with liposarcoma on CT neck.

Hospital Course

- EGD:** intubated with 6.5 regular endotracheal tube (ETT) without difficulty. However, gastroenterology team unable to extract mass due to large size. Patient kept intubated for rigid esophagoscopy.
- Rigid esophagoscopy:** complicated by iatrogenic esophageal perforation requiring conversion to video-assisted thoracic surgery (VATS) with ETT exchange and one-lung ventilation.
- ICU:** attempted extubation with anesthesia team assisting at bedside. However, reintubated hours after extubation due to respiratory distress.
- Otolaryngology team** consulted for right supraglottic/hypopharyngeal lesion.

Airway Management

Otolaryngology Consult

- Nasopharyngoscopy exam performed by ENT noting right supraglottic/hypopharyngeal lesion lateral to aryepiglottic fold (**Figure 2A**).
- Otolaryngology team stated that lesion was non-obstructive and unlikely to contribute to failure to extubate given previous successful intubations.
- However, otolaryngology team agreed to proceed with microsuspension direct laryngoscopy and CO₂-laser assisted excision of lesion for better safety and assessment of airway as well as planning for definitive treatment.

Microsuspension Direct Laryngoscopy and CO₂-Laser Assisted Excision of Lesion

- Patient arrived with 7.5 regular ETT and sedated on propofol infusion. On induction, 50 mg propofol bolus and 80 mg rocuronium was administered while propofol infusion rate was increased.
- Using a Cook Airway Exchange Catheter with visualization via a size 3 McGrath video laryngoscope, the 7.5 regular ETT was removed and replaced with a 6.0 metal laser-resistant ETT (**Figure 2B-C**).
- 10 mg dexamethasone administered for airway swelling near right paraglottic mass noted on laryngoscopy.
- FiO₂ reduced to 25% prior to incision given level 3 fire risk and potential complication of airway fire.
- At the end of the case, laser-resistant ETT replaced with 7.0 regular ETT by otolaryngology team.
- Patient kept intubated and transported to ICU for further care.

Remaining Hospital Course

- Patient successfully extubated with anesthesia and otolaryngology teams assisting at bedside 4 days after excision of lesion.
- Patient downgraded from ICU and eventually discharged home.

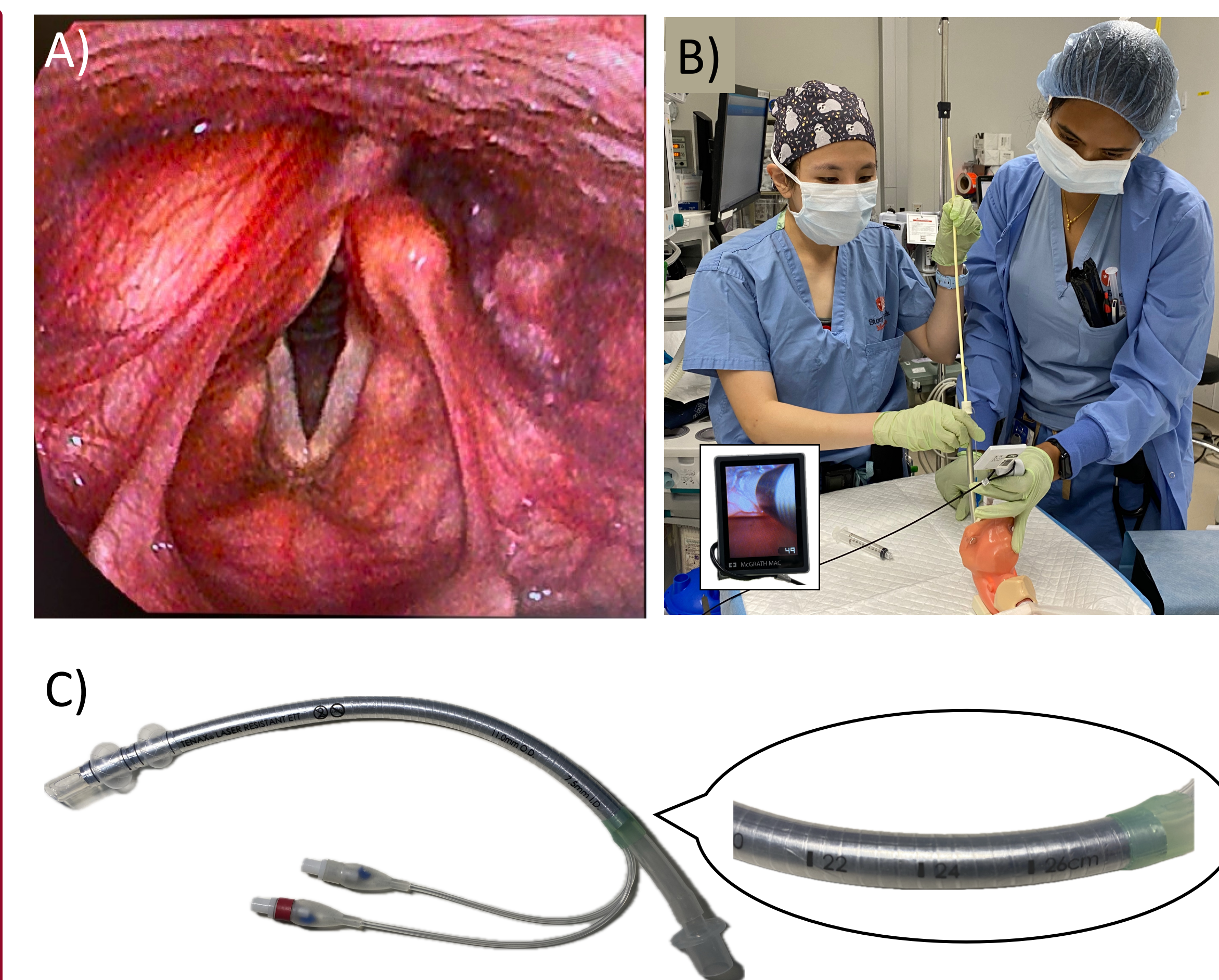


Figure 2A): Right supraglottic/hypopharyngeal lesion lateral to aryepiglottic fold noted on nasopharyngoscopy exam. **2B):** ETT exchange using Cook Airway Exchange Catheter via visualization under McGrath video laryngoscope. **3C):** Metal laser-resistant ETT.

Conclusion

- Given the patient's complex pathology and distorted anatomy, the excision of the paraglottic mass is challenging and requires careful coordination of care between the anesthesiology and otolaryngology teams.
- The combined use of an airway exchange catheter and video laryngoscope was safe and effective in keeping the airway secured while providing enhanced visualization and precise maneuvering of ETT exchange.

References

References available on request, correspondence to Ashley.Wang@stonybrookmedicine.edu

