



Background

- Laryngeal chondrosarcoma is a rare disease which can involve the cricoid, thyroid, arytenoid cartilages and/or epiglottis
- While laryngeal conservation surgical techniques are gaining traction, the traditional approach involves performing a total laryngectomy
- Laryngeal chondrosarcoma is generally localized to a single component of the cartilaginous framework and is often amenable to partial laryngectomy. If needed for airway maintenance, reconstruction with autologous rib and a free-flap reconstruction allows oncologic resection while preserving voice and swallow
- We report short and long-term outcomes in six cases performed since 2006 across two academic hospital systems

Methods

- IRB approval obtained from the University of California, San Francisco. IRB exemption obtained from Mount Sinai Hospital
- Retrospective chart review
- Patients diagnosed with laryngeal chondrosarcoma who were candidates for partial laryngectomy are reported
- A tracheostomy was performed for airway protection at the time of surgery
- 3 patients underwent hemi-cricoidectomy and 3 underwent total cricoidectomy as the lesion crossed the midline
- 4/6 patients required reconstruction with autologous rib wrapped with soft tissue from a radial forearm or anterolateral thigh donor site

Results

- 6 patients underwent partial laryngectomy between December 2006 and March 2020
- The cohort included 4 males and 2 females with a mean age of diagnosis of 54 years (range: 46-60)
- Average follow up time was approximately 5 years (range: 24-460 weeks)
- No recurrences in the cohort and none have undergone total laryngectomy
- Patients underwent an additional two procedures post-operatively on average, primarily for removal of granulation and scar. One underwent a type IV thyroplasty
- 6/6 are tolerating a PO diet and are decannulated

Conclusions

- Partial laryngectomy with multi-layered framework reconstruction is an alternative to total laryngectomy
- It can provide an oncologically sound approach to laryngeal chondrosarcoma
- In addition, partial laryngectomy is a viable alternative to total laryngectomy with excellent functional outcomes in terms of both airway and swallow

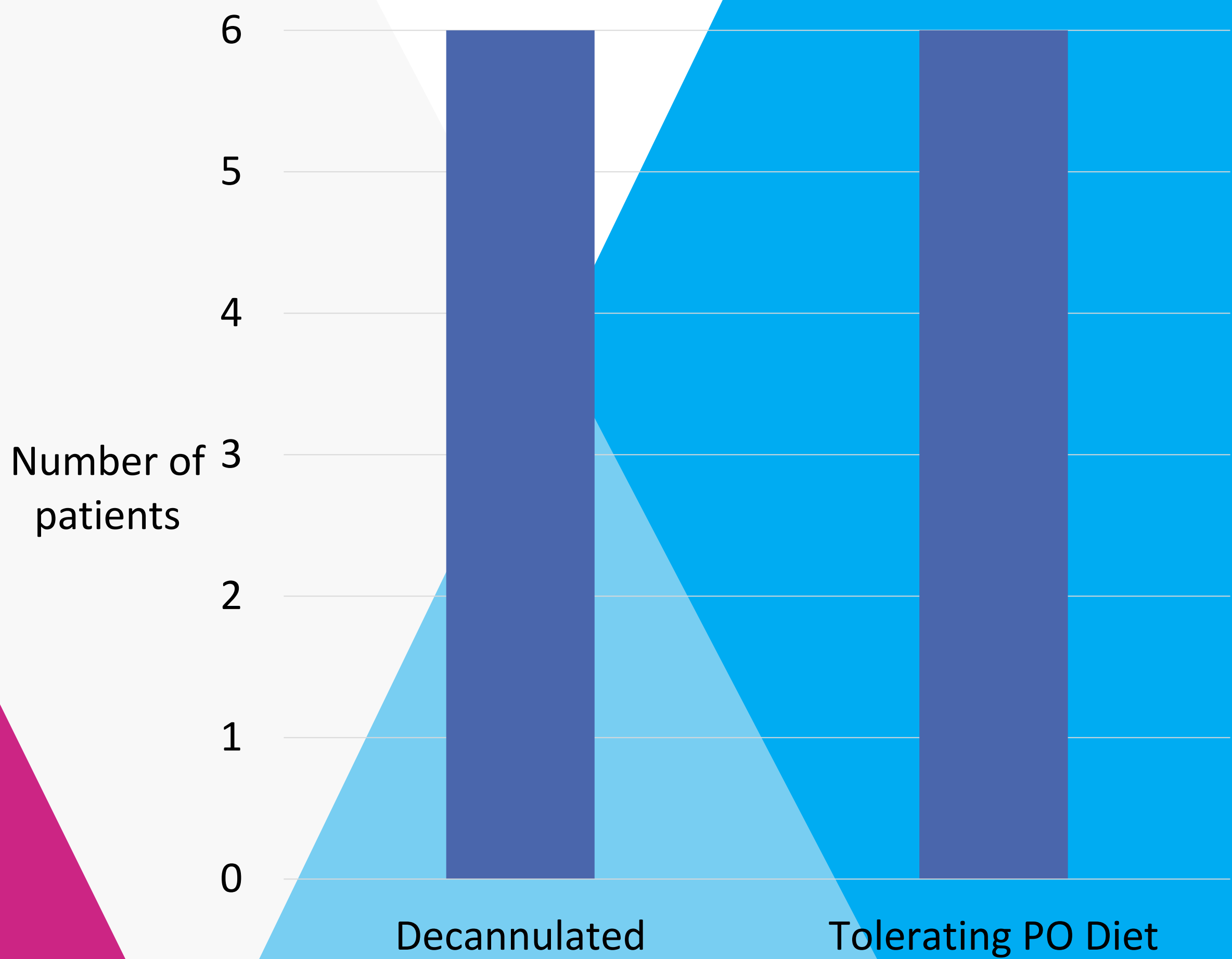


Figure 1: Functional Outcomes after Partial Laryngectomy



Figure 2: Preparation of the ALT fascial flap which wraps the rib graft

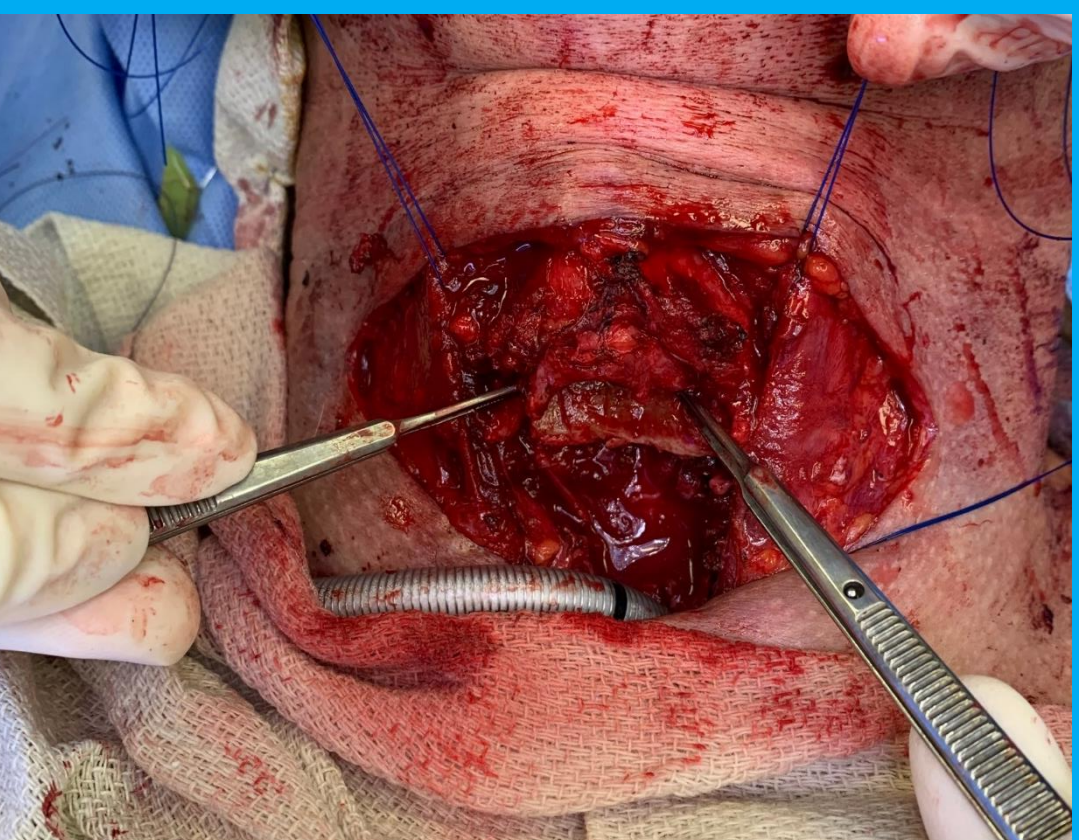


Figure 3: Temporary placement of the rib for planning purposes prior to fascial flap inset

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References

- 1) Banaszewski, J., Gaggi, A., Buerger, H., Wierzbicka, M., Pabiszczak, M., Pastusiak, T., & Szyfter, W. (2016). Functional results after total cricoidectomy with medial femoral condyle free flap reconstruction. *European Archives of Oto-Rhino-Laryngology*, 273(11), 3869–3874. <https://doi.org/10.1007/s00405-016-4017-2>
- 2) Chin, O. Y., Dubal, P. M., Sheikh, A. B., Unsal, A. A., Park, R. C. W., Baredes, S., & Eloy, J. A. (2017). Laryngeal chondrosarcoma: A systematic review of 592 cases. *The Laryngoscope*, 127(2), 430–439. 3) <https://doi.org/10.1002/lary.26068>
- 3) Piazza, C., Del Bon, F., Grazioli, P., Mangili, S., Barbieri, D., Nicolai, P., & Peretti, G. (2014). Organ preservation surgery for low- and intermediate-grade laryngeal chondrosarcomas: Analysis of 16 cases. *The Laryngoscope*, 124(4), 907–912. <https://doi.org/10.1002/lary.24416>
- 4) Piazza, C., Paderno, A., & Nicolai, P. (2017). Conservative surgery for laryngeal chondrosarcoma: A review of the most recently proposed approaches. In *Current Opinion in Otolaryngology and Head and Neck Surgery* (Vol. 25, Issue 2, pp. 93–100). Lippincott Williams and Wilkins. <https://doi.org/10.1097/MOO.0000000000000337>