

Introduction

Tracheal resection with primary re-anastomosis is a definitive management for tracheal stenosis¹

Typically reserved for cases unresponsive to conservative endotracheal treatment, such as balloon dilation and laser scar excision

Endotracheal intubation may be difficult in cases of severe tracheal stenosis²

Extracorporeal Membrane Oxygenation (ECMO) provides an opportunity for successful tracheal resection without endotracheal intubation³

Contact
Randy W. Lesh, MD
Otolaryngology – Head & Neck Surgery
Geisinger Health System
100 N. Academy Avenue, Danville PA
rlsh2@geisinger.edu

Case

47-year-old man with history of intubation x3 weeks two years prior presented with progressive dyspnea and hoarseness

Bronchoscopy attempted but aborted due to complex, circumferential 2 cm stenotic segment 2.5 cm inferior to the true vocal folds

Complexity of stenosis precluded endotracheal intubation, therefore ECMO was initiated

Left hemi-thyroidectomy completed, larynx mobilized, and trachea skeletonized

Hopkins rod telescope used to delineate resection

Proximal extent just distal to cricoid cartilage

5-0 ETT over a flexible bronchoscope used to intubate

Stenotic segment resected and primary anastomosis

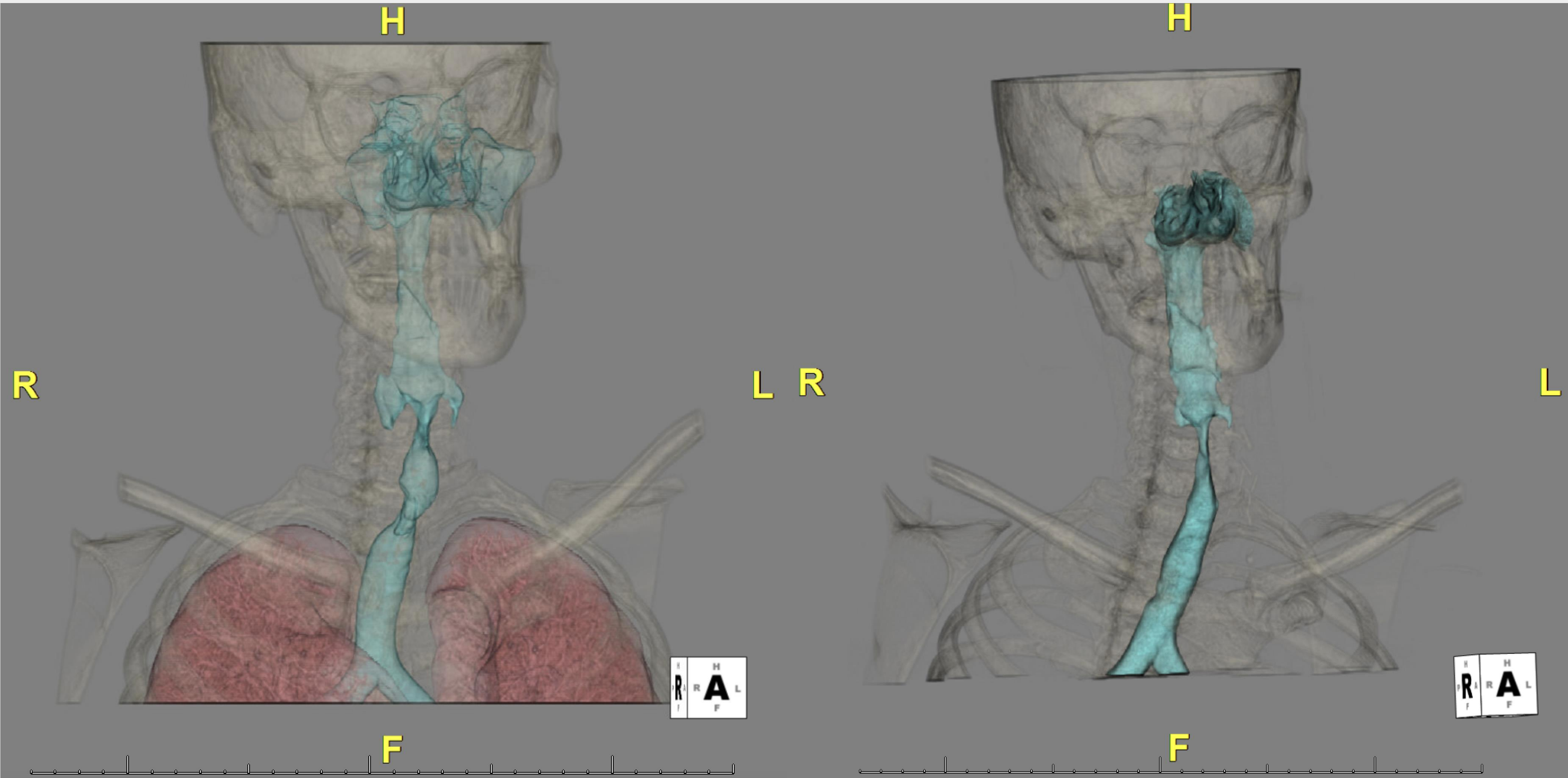
Grillo suture and JP drains placed, and patient extubated post-operatively

Required temporary NG tube

Grillo suture removed POD 8, discharged home POD 9

Significant improvement in dyspnea at one-month

Preoperative and postoperative CT with 3D Reconstruction



Complex circumferential upper tracheal stenosis with 50% narrowing of the transverse diameter

Normal cervical trachea caliber following cervical tracheal resection.

References

Grillo suture and JP drains placed, and patient extubated post-operatively

Required temporary NG tube

Grillo suture removed POD 8, discharged home POD 9

Significant improvement in dyspnea at one-month

1. Siciliani A, Rendina EA, Ibrahim M. State of the art in tracheal surgery: a brief literature review. Multidiscip Respir Med. 2018 Sep 12;13:34. doi: 10.1186/s40248-018-0147-2. PMID: 30214724; PMCID: PMC6134582.
2. Yoshimatsu Y, Morita R, Suginaka M, Furukawa K, Nakamura N, Yamairi K, Maruyama N, Kaji M, Kamimori T, Fujiwara H. Difficult intubation due to unknown congenital tracheal stenosis in the adult: a case report and literature review. J Thorac Dis. 2018 Feb;10(2):E93-E97. doi: 10.21037/jtd.2018.01.36. PMID: 29607194; PMCID: PMC5864667.
3. Banskota S, Khullar O, Fernandez F, Sanchetti M, Force SD, Daneshmand M, Javidfar J. Tracheal resection and primary reconstruction on venovenous extracorporeal membrane oxygenation. Perfusion. 2024 Oct;39(7):1471-1473. doi: 10.1177/02676591231188255. Epub 2023 Jul 10. PMID: 37429566.