

## Peer Review File

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### Reviewer A

**Comment 1:** This manuscript showed the surgical management of blind-end Meyer cotton grade IV subglottic stenosis in two patients who required long-term mechanical ventilation support due to respiratory failure due to the COVID-19 virus.

However, the progress of treatment since the placement of the silicone T-tube has not been shown. This condition is very difficult to treat and further treatment and its course and prognosis should be reviewed and reported.

Reports of mere long-term endotracheal intubation complications are stale, and if the condition is caused by the COVID-19 virus, further consideration is needed, including its severity.

**Reply 1:** Thank you for these comments. We have added 6 month follow-up for these individuals. They are doing well. They both have ongoing tracheomalacia so we have decided to continue the use of a silicon T-tube. They have both come for an exchange and the stenosis is healing well around the T tube and patent.

#### **Changes in the text:** *Long-Term Follow-Up*

Both patients have had roughly 6 months of follow-up since the initial procedure. They have tolerated their silicone T-tubes capped at all times with intermittent suctioning when needed. Neither patient currently require any oxygen supplementation and continue to phonate well. While they are not at their baseline in terms of physical activity, they are continuing their rehabilitation process. Both patients have been brought back to the operating room every 6 to 8 weeks for T-tube exchanges and reevaluation of the stenotic segment of their trachea. While the stenotic portions have scarred down to a reasonable diameter, they continue to have signs of tracheomalacia and we have therefore maintained the use of their T-tubes.

### Reviewer B

This article outlines a novel approach to grade 4 subglottic stenosis instituted by the authors to manage patients with laryngotracheal complications following recovery from COVID-19. This is an interesting article and could provide readers with an additional approach for these complicated patients. However, I feel there are areas that should be addressed before publication as outlined below.

Major Concerns:

**Comment 1:** There are numerous grammatical and nomenclature errors throughout the manuscript, some examples below...

- Abstract, lines 49 and 57: "COVID-19 virus" should really say SARS-CoV-2 infection or COVID-19 illness
- Introduction, line 64: "severe COVID-19 SARS" should read "severe COVID-19 infection"
- Introduction, lines 67-69: sentence reads "As our ability...laryngeal trauma" this

sentence is grammatically incorrect

- Introduction, line 70: the grading scale is the “Cotton-Myer”
- Line 102: “A rigid bronchoscopy” should read “bronchoscope”
- Many others throughout...

**Reply 1:** Thank you for these comments. We have gone through the manuscript and have changed these to reflect the requests stated above.

**Comment 2:** Introduction, lines 60-61

This sentence notes that the rate of subglottic stenosis from intubation is as high as 20% based on publications from the 1980s/90s. I do not believe these numbers are accurate as current rates are much lower. Authors should re-review the literature and update this information.

**Reply 2:** Thank you for these comments. We have gone through the literature and have updated figures to include the lowest rates of subglottic stenosis that have been reported post intubation and tracheostomy.

**Changes in the text:** Due to improved equipment and patient management, contemporary rates of subglottic stenosis are much lower with rates as low as 6% and 0.6% in patients who underwent intubation and tracheostomy respectively (4-7).

**Comment 3:** It would be helpful for the authors to describe the approximate vertical dimension of the stenosis for these patients. Based on the description I imagine these were relatively thin stenoses. If these were thicker then I am not sure this approach would have been successful. It would be valuable for the authors to discuss the potential indications and limitations to this approach based on the vertical dimension of the stenosis.

**Reply 3:** We thank you for these comments. We agree with these statements that if the pseudomembrane was thicker, our surgical technique may require assistance from additional intraoperative imaging such as a CT scanner or fluoroscopy in order to help guide the recannulization of the trachea. We measured the pseudomembranes to be 2-3 mm based on preoperative CT scans and have added this information to the manuscript for both cases.

**Changes to text:**

Case 1 “A computed tomography (CT) scan was obtained identifying an area of subglottic stenosis with a 2-3 mm pseudomembrane (**Figure 1A**).”

Case 2 “A CT scan showed a subglottic stenosis which was confirmed to be a grade IV Cotton-Myer subglottic stenosis (2-3 mm pseudomembrane) roughly 5-6 mm distal to the vocal cords and above the tracheostomy site (**Figure 1B**).”

**Comment 4:** Could the authors describe the patient’s outcomes? How long did the t-tubes remain in place? Were the patients able to improve phonation or even wean towards decannulation?

**Reply 4:** Thank you for these comments. We have added 6 month follow-up for these individuals. They are doing well. They both have ongoing tracheomalacia so we have decided to continue the use of a silicon T-tube. They have both come for an exchange

and the stenosis is healing well around the T tube and patent.

Changes in the text: *Long-Term Follow-Up*

Both patients have had roughly 6 months of follow-up since the initial procedure. They have tolerated their silicone T-tubes capped at all times with intermittent suctioning when needed. Neither patient currently require any oxygen supplementation and continue to phonate well. While they are not at their baseline in terms of physical activity, they are continuing their rehabilitation process. Both patients have been brought back to the operating room every 6 to 8 weeks for T-tube exchanges and reevaluation of the stenotic segment of their trachea. While the stenotic portions have scarred down to a reasonable diameter, they continue to have signs of tracheomalacia and we have therefore maintained the use of their T-tubes.