

TEP IN THE ER: WHAT DO I DO?

AFTER-HOURS TRACHEOESOPHAGEAL PROSTHESIS MANAGEMENT FOR THE OTOLARYNGOLOGIST

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Introduction

Total laryngectomy patients who have undergone tracheoesophageal puncture with voice prosthesis may present with a variety of TEP problems after clinic hours. Some of those complications include premature leakage, periprosthetic leakage, granulation tissue, dislodgement, or TEP embedding². Goals of emergency TEP management focus on minimizing risk of aspiration pneumonia, foreign body aspiration, and wound complications at the puncture site.

We present guidance for the management of acute TEP problems for otolaryngologists who may consulted for after-hours and/or emergency TEP management.

Leakage Through

Leakage through the TEP is the most commonly seen complication and often indicates end of device life due to a worn-out valve. Central leakage can often be resolved by:

1. Cleaning the prosthesis or using a plug insert
2. Thickening liquids
3. Placing a laryngectomy tube in the stoma
4. Temporary placement of a nasogastric feeding tube



Method for TEP cleaning

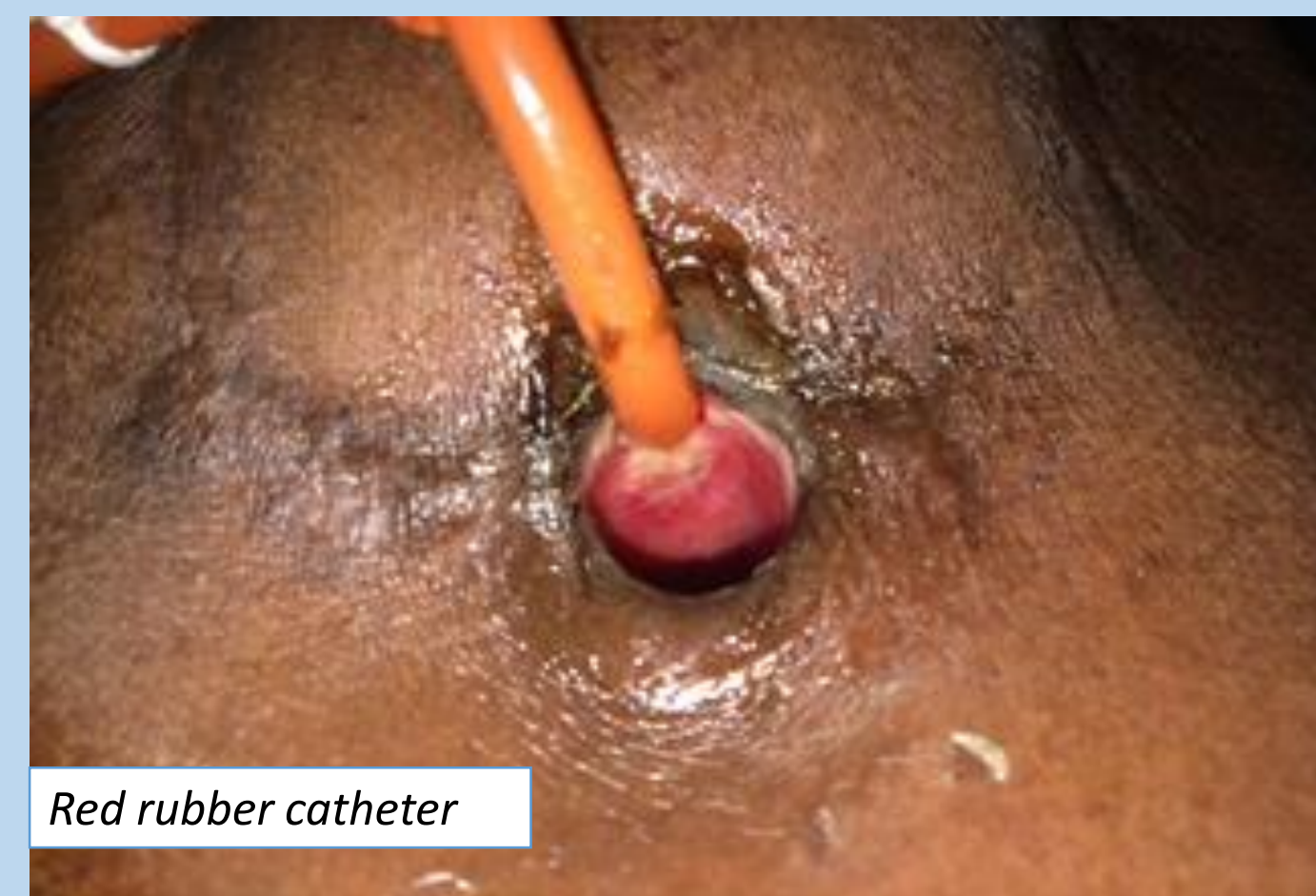
Leakage Around

Periprosthetic leakage is often related to inaccurate TEP length or reduced health of the surrounding tissue. Periprosthetic leakage can be addressed by:

1. Thickening liquids
2. Placing a laryngectomy tube during oral intake
3. Temporary placement of a nasogastric feeding tube.



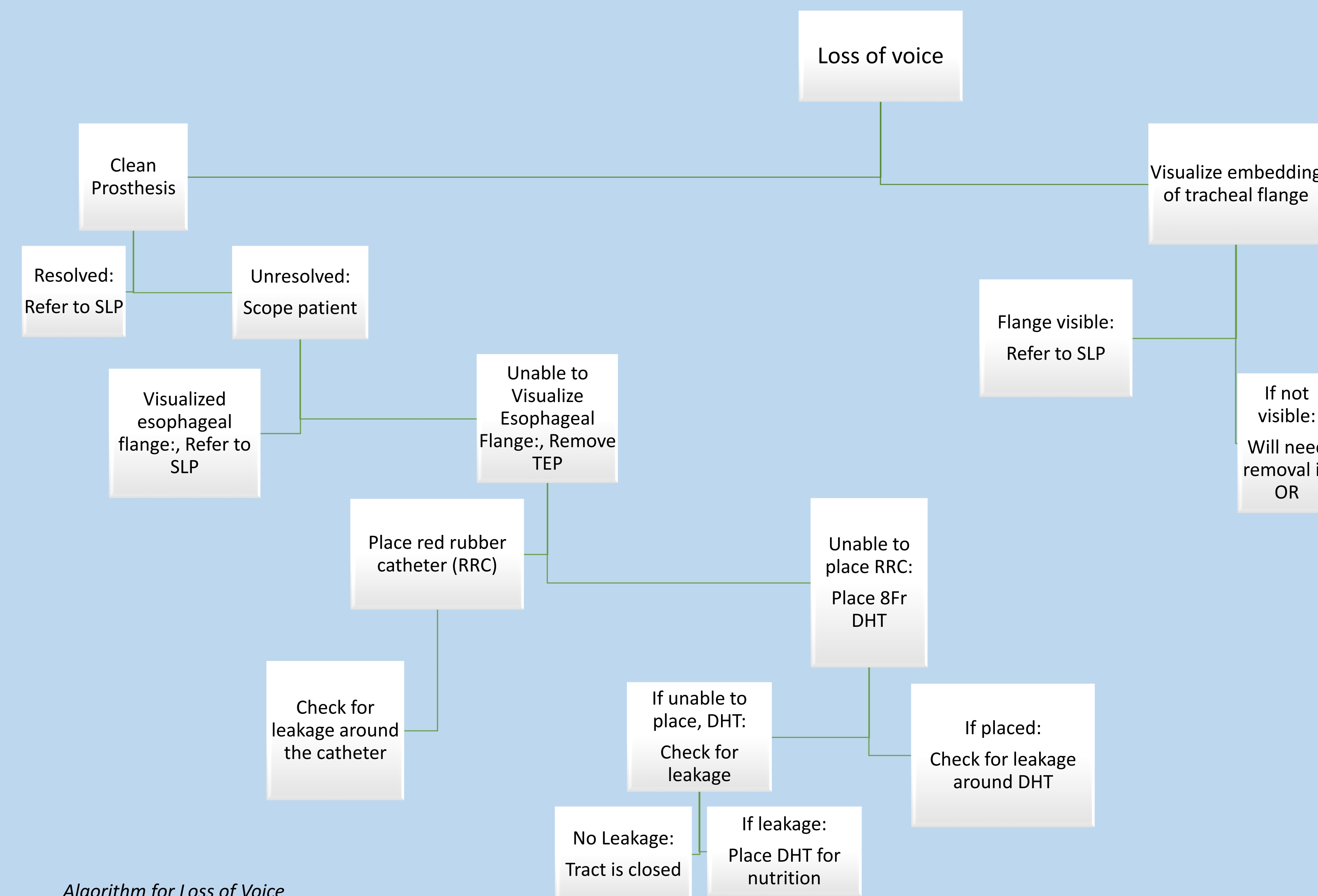
Leakage around a nasogastric tube



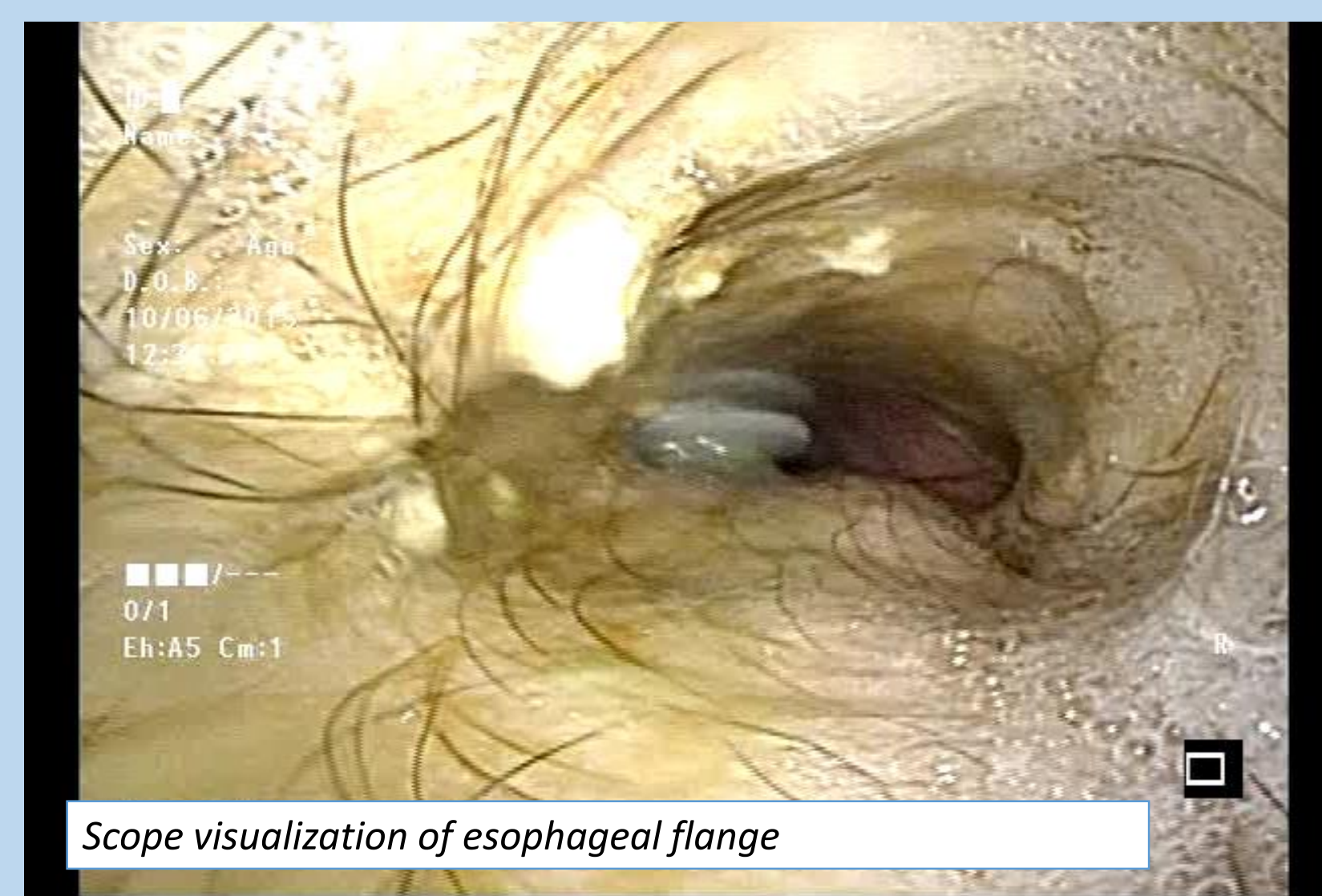
Red rubber catheter

Sudden Loss of Voicing

Loss of voice may indicate that either the TEP valve is clogged or that the puncture tract may be closing on the esophageal side, likely due to embedding or tissue growth over the prosthesis. Tissue overgrowth can lead to complete loss of the TE tract requiring re-puncture and requires timely intervention.



Algorithm for Loss of Voice



Scope visualization of esophageal flange



Embedding TEP

Loss of Prosthesis, Still in Tract

When a patient presents with the TEP extruding from the TE tract, it can lead to stoma obstruction and difficulty breathing, especially in patients with small stomas.



Extruding TEP: ER removal indicated due to airway obstruction, place red rubber catheter



Extruding TEP: ER removal not needed, refer to SLP. Removal in OR likely indicated

Loss of Prosthesis, Not in Tract

When a patient presents without a TEP in place, it is possible that the prosthesis was dislodged, swallowed, or aspirated. Identification of the location of the prosthesis is imperative.

1. Ask patient about TEP dislodgement (i.e., when, where, if they have the TEP)
2. Chest x-ray or CT chest to rule out foreign body aspiration
If identified in the airway or lungs, a bronchoscopy and prosthesis removal are indicated
3. Place red rubber catheter in TE-tract
4. Refer to SLP



Open TE-tract

In conclusion, degree of TEP complications vary. Lack of informed management strategies can lead to serious complications for the patient, thus safe breathing and swallowing need to be prioritized. Prompt referral and collaboration with the patient's SLP should take place at the earliest opportunity following initial stabilization.

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1. American Cancer Society, <https://www.cancer.org/cancer/laryngeal-and-hypopharyngeal-cancer/about/key-statistics.html>
2. Smith, A.S., Thimmappa, V, Jones J, Shires, C, Sebelik, M (2017). Use of Ultrasound for Sizing Tracheoesophageal Puncture Prosthesis. *Otolaryngology-Head and Neck Surgery*, 157 (6), 1075-1078.
3. Gitomer, S.A., Hutcheson, K.A., Chistianson, B.L., Samuelson, M.B., Barringer, D.A., Robers, D.B., Zafereo, M.E. (2016). Influence of timing, radiation, and reconstruction on complications and speech outcomes with tracheoesophageal puncture. *Head & Neck*, 38, 1765-1771