

Cost-effectiveness of surgery compared to organ preservation

Beck ACC, van Harten WH, van den Brekel MWM, Navran A, Retel VP. Cost-Effectiveness of Surgery Versus Organ Preservation in Advanced Laryngeal Cancer. *Laryngoscope*. 2020 Aug 10. [Epub ahead of print].

Laryngeal cancer accounts for about one third of head- and neck cancers and can have a detrimental impact on the patient's life. Choosing the right treatment for advanced laryngeal cancer is a challenging trade-off between survival outcomes and treatment-effect on patient quality of life (QoL). This study aimed to analyze the cost-effectiveness of surgery (laryngectomy with or without radiotherapy) versus organ preservation (radiotherapy, chemo- and/or bioradiation) using a Markov model, based on input data

from various key international articles. Quality-adjusted life years (QALY) combines QoL and survival into one effectiveness outcome. The incremental cost-effectiveness ratio (ICER) was used as a primary outcome, and is calculated by dividing the difference in total lifetime costs by the QALY difference. The study showed that based on current literature, total QALYs and lifetime costs were both higher for TL compared to OP. The TL approach was therefore more effective and more costly than OP, with an ICER of approximately €42,000/QALY.

Management of tracheostomy and laryngectomy in the context of COVID-19

Vergara J, Starmer HM, Wallace S, Bolton L, Seedat J, de Souza CM, et al. Swallowing and Communication Management of Tracheostomy and Laryngectomy in the Context of COVID-19: A Review. *JAMA Otolaryngol Head Neck Surg*. 2020 Oct 15. [Epub ahead of print].

A major challenge of managing tracheostomy and laryngectomy during the COVID-19 pandemic lies in minimizing the risk of viral transmission between the patient and the healthcare professional (HCP). This review focused on extracting key recommendations from publications and practice guidelines on tracheostomy and laryngectomy management in the context of COVID-19. In regards to tracheostomy, the key recommendations for HCPs were to take precautions during potential aerosol-generation procedures such as cuff manipulation, tracheal suctioning and patient communication. The use of heat- and moisture exchangers (HMEs) and in particular HMEs with an electrostatic filter (HMEFs) was highlighted, and to perform suction procedures using closed systems with viral filters. For laryngectomy, the key recommendations concerned management of respiration, pulmonary aspiration and voice rehabilitation. The importance of HMEFs was again emphasized. Hands-free communication

was recommended if possible, in addition to engaging in frequent hand hygiene. To prevent pulmonary aspiration the use of voice prosthesis plugs for leakage was recommended, if needed. The pandemic in general prompts the delay of non-urgent procedures and finding alternative ways to support rehabilitation without face-to-face contact.

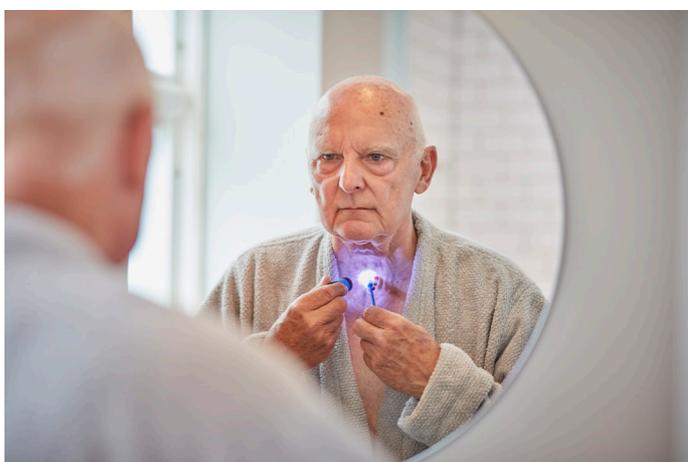


Voice prosthesis management – a one-year snapshot

Parrilla C, Longobardi Y, Paludetti G, Marena ME, D'Alatri L, Bussu F, et al. A one-year time frame for voice prosthesis management. What should the physician expect? Is it an overrated job? *Acta Otorhinolaryngol Ital.* 2020;40(4):270-6.

Tracheoesophageal speech has been the gold standard for voice rehabilitation after total laryngectomy for the past 30 years. Reasons for not using voice prostheses may be due to early post-surgical complications, or due to later, long-term issues with the tracheoesophageal puncture and voice prosthesis. The focus of this study was to investigate the burden of later

complications on voice prosthesis management in an otolaryngology clinic. Each access made by a voice prosthesis user to the clinic was registered during a one-year period. In total, 70 laryngectomized patients had 243 interactions with the clinic for issues related to their voice prosthesis. In the majority of the cases the access was made due to leakage through the prosthesis (52%). The second most common reason for access was leakage around the voice prosthesis (25%). A speech therapist succeeded in managing the complications independently in 44 of the 243 cases (18%). With the data gathered, the authors were able to develop a trouble-shooting algorithm with a flowchart in order to help identify and manage the most common complications with accuracy and time-efficiency. The authors conclude that an initial visit by a speech therapist may be useful in order to lessen the burden of voice prosthesis management on the treating physician.



Multidimensional evaluation of voice outcomes following TL

van Sluis KE, van Son R, van der Molen L, AJ MC, Palme CE, Novakovic D, et al. Multidimensional evaluation of voice outcomes following total laryngectomy: a prospective multicenter cohort study. *Eur Arch Otorhinolaryngol.* 2020 Jul 21 [Epub ahead of print].

Voice rehabilitation following TL is imperative and usually managed by means of creating a tracheoesophageal puncture with voice prosthesis placement. The success of tracheoesophageal speech depends on several factors and varies from patient to patient. To evaluate voice outcomes, a multidimensional analysis combining objective and subjective parameters is recommended. In this prospective multicenter cohort study, 43 participants were assessed in terms of voice outcomes before their laryngectomy and at 3 months, 6 months and 12 months post-surgery. Data was collected using perceptual evaluations with Visual Analogue

Scales (VAS), voice recordings with Acoustic Voice Quality Index scores (AVQI) and patient-reported outcome measures consisting of Voice Handicap Index (VHI) and EQ-5D-5L. Results showed a statistically significant worsening of AVQI scores ($p < 0.001$) from pre- to post-surgery. A worsening of all voice-related values were seen, although no statistical significance for other outcome measures was obtained. However, patient-reported outcomes did show a gradual improvement over time in terms of quality-of-life and voicing, indicating an acceptance of the condition and coping long-term.

Expiratory Muscle Strength Training in laryngectomized patients

van Sluis KE, Kornman AF, Groen WG, van den Brekel P, van der Molen L, Hoffman-Ruddy B, et al. Expiratory Muscle Strength Training in patients After Total Laryngectomy; A Feasibility Pilot Study. *Ann Otol Rhinol Laryng.* 2020, 129(12):1186-1194.

The aim of this pilot study was to investigate the feasibility and the effects of expiratory muscle strength training (EMST) on pulmonary and vocal function in laryngectomized patients. Coughing is common after total laryngectomy due to impaired mucociliary clearance. In addition, the altered anatomy eliminates the ability to generate subglottic pressure prior to coughing. A well-known technique to improve cough function is EMST, which has proven successful in increasing expiratory pressure in other patient populations. In this study the technique was practiced using a device (EMST150, Aspire Products), which was modified in order to be connected to the adhesive baseplate in front of the tracheostoma. After

4 weeks of practicing EMST, there was an increase in maximum expiratory pressure (MEP) and vocal range in loudness. However, there was no increase in peak expiratory flow (PEF) and no improvement in regards to self-reported pulmonary function, vocal functioning, fatigue or physical exertion. The authors underline that the study results should be interpreted with caution as the patient group was very small (n=9) and consisted of relatively fit individuals. A more notable clinical effect could potentially be seen in a larger group with worse physical condition. Nevertheless, EMST after total laryngectomy was considered generally safe and feasible and had a high compliance rate.

Clinician training and development within TE voice

Hancock KL, Ward EC, Hill AE. Factors contributing to clinician training and development in the clinical area of laryngectomy and tracheoesophageal voice. *Int J Lang Commun Disord.* 2020; 55(5):690-701.

The role of the speech and language therapist (SLT) in the rehabilitation of laryngectomized patients is multifaceted and can vary from country to country. In Australia, SLT is most often the profession managing the voice prosthesis replacements and troubleshooting in patients using tracheoesophageal speech (TES). In this study, SLTs working with TES patients in Australia were recruited to engage in focus groups to discuss training within TES rehabilitation. In total, 36 participants from various sites were recruited, grouped by level of experience, and divided into 10 different focus groups. An interview guide was used to facilitate the discussions. Six clear themes in regards to how SLTs consider training pathways in TES rehabilitation were identified, such as: learning with and from others; hands-on learning and

formal programs. The authors suggest that the identified factors could improve the competency within TES rehabilitation if fully incorporated into training in the future.

