Chapter 12
Alaryngeal Speech Rehabilitation – training oral communication after removal of the larynx (due to trauma or disease)

Laryngeal cancer

- Typically affects adults between the ages of 50-70 years

- Risk factors include:
  - ✓ Smoking + Alcohol Consumption
  - ✓ Smoking alone
  - ✓ Environmental Factors

- Most common form is squamous cell carcinoma

Tumor classification

- Size/location determined by laryngeal exam including LVS, MRI, or CT scans

- Tumors may occur above, below, or at the level of the glottis

- Supraglottic tumors
• Glottic tumors

• Subglottic lesions

**Cancer characteristics**
  • Carcinoma-in-situ

• Metastasis

**Classification System of Cancers ‘TMN system’**
  • T= location of the tumor

• M= metastasis

• N= whether or not lymph nodes are involved
Treatment for laryngeal cancer

A. Surgical:

1. **Cordectomy:** removal of diseased vocal fold

2. **Partial laryngectomy:** removal of half or less of the thyroid, arytenoids cartilages, tissues, and vocal fold

3. **Supraglottic laryngectomy:** for higher lesions (removal of portions of epiglottis, hyoid, thyroid, false vocal folds)

4. **Total laryngectomy:** removal of entire laryngeal framework and tissues
   - Patient will not use the same mechanisms for breathing/vocalizations
   - Trachea will be brought forward and sutured to an opening called a tracheostoma or stoma
B. Nonsurgical:
1. Radiation therapy (is 85-95% effective in treating smaller T1/T2 lesions)
   - Using high-energy rays or high dose x-rays to kill cancer cells and shrink tumors
   - New techniques involve giving drugs that make cancer cells more susceptible to radiation (radiosensitization) and giving radiation therapy in smaller doses every day
   - Temporary side effects:

2. Chemotherapy
   - Using drugs to kill cancer cells
   - Systemic treatment given in cycles, meaning that the drugs flow through the bloodstream to nearly every part of the body to kill cancerous cells but also healthy cells

C. Combination Approach:
   - Frequently begin least invasive treatment with smaller lesions such as radiation and partial surgeries
Role of the SLP on the Laryngectomy Rehabilitation Team

Main role is to establish an alternative form of oral communication taking into careful consideration the following:

- Patient’s medical status
- Communicative needs
- Patient’s preferences

1. Preoperative consultation (with spouse/caregiver)
   - Explain anatomy of pre/post operative larynx
   - Review what patient knows, correct misunderstandings,
   - Introduce patient to immediate post-op option of electrolarynx
   - Have patient meet another laryngectomized person and allow time for them to ask questions
2. Postoperative consultation
   • Answer questions/observe how the patient is coping
   • Provide them with electrolarynx for immediate oral communication
   • Provide written information to reduce the burden of remembering details

3. Teaching/Providing Alaryngeal Speech Options

1. Artificial Larynx

a. Pneumatic device:
   • A handheld device with a small cup that fits over the stoma to seal it off, thus directing air through a tube placed in the mouth
   • Exhalation from the lungs is routed through the tube with a reed to provide sound that is shaped by the articulators
   • (+)
   • (-)
b. Electrolarynx:
- Hand held device (against cheek, neck) that provides a sound source or buzz (in place of vocal folds)
- Person uses oral articulators as they normally would to “shape” the buzz or source
- (+)
- (-)

2. Esophageal Speech
- P-E or Pharyngeal-esophageal sphincter (also called UES) becomes the sound source
- Patient takes a limited amount of air into esophagus and then it is expelled from esophagus (not lungs) through the PE segment, which will vibrate producing a sound source that can then be shaped by the oral articulators
- (+)
- (-)
3. Tracheoesophageal Speech

- A fistula or small hole is created in the common tissue wall separating the trachea and esophagus.
  
- P-E segment is still the new sound source, however prosthesis keeps the fistula open.
  
- The prosthesis is a one-way valve that allows air entering the stoma to pass from trachea into the esophagus.
  
- Patient takes in air through stoma and it enters lungs.
  
- Upon exhalation patient must occlude stoma (or use pressure valve) so that air from lungs enters prosthesis and is then released into the esophagus to pass through PE segment (sound source) then through oral cavity to be shaped by articulators.

- (+)

- (-)