SPEECH-LANGUAGE PATHOLOGY’S ROLE

MAGGIE BOYD, MS, CCC/SLP

IVOR LEWIS
Esophagogastrectomy
Maggie Boyd, MS, CCC-SLP is a dysphagia clinical specialist at UAB hospital. She has 14 years clinical experience as a Speech-Language Pathologist working with patient neonates to geriatrics. After obtaining her Masters of Science degree from the University of Montevallo in 1995, Maggie began her career working with long-term care patients. She worked with this population for five years, and then began working at UAB in the rehab/acute-care setting, where she is currently employed. In both environments, Maggie has obtained extensive experience in both endoscopic and fluoroscopic evaluations of dysphagia. At UAB, Maggie primarily focuses on neuro-related swallowing disorders. She introduced the use of flexible endoscopy at UAB for diagnosing swallowing problems based on Susan Langmore’s FEES protocol. Additionally, Maggie has spoken at the Speech & Hearing Association of AL (SHAA) about the use of endoscopy as a therapy tool for treating dysphagia. During the past five years, she has trained speech-language pathologists in the acute-care, rehab, and sub-acute care settings at UAB to use endoscopy. She enjoys dysphagia assessment and has committed herself to staying abreast of cutting-edge swallowing rehabilitation knowledge and sharing it with her colleagues.
Case Study

- 53 year old white male
- History of dysphagia and 40 lb weight loss over a few months
- Diagnosed with esophageal cancer and s/p placement of feeding tube
- Treatment with radiation and chemotherapy initially stage as T3N0M0 lesions
- Received an IVOR LEWIS esophagogastrectomy on 7/27/09
Who & What is Ivor Lewis?
Biography

- **Ivor Lewis (1895–1982)**
  - Welsh Pioneer of the Right-Sided Approach to the esophagus
  - He was primarily recognized as a distinguished thoracic surgeon, was also a broadly based general surgeon who will always be remembered by gastrointestinal surgeons because of the surgical approach he pioneered to treating carcinoma of the esophagus.
Esophagogastrectomy

- **Esophagogastrectomy is the surgical removal of part of the esophagus.** The lower part of the esophagus and upper part of the stomach (fundus) are removed and the remaining parts are then connected to re-establish the digestive tract.
The surgical procedure takes approximately 3-5 hours.

The Ivor Lewis procedure is used for those who have tumors in the middle or lower third of the esophagus.

The transhiatal procedure is used for those who have tumors in the upper/high esophagus. Of the two types of approaches, the Ivor Lewis is the most common.
The first stage is through an incision in the abdomen to “free up” and remove part of the stomach. This section of stomach will be formed into a replacement esophagus.

The second stage is done through an incision in the chest to remove the diseased part of the esophagus, insert the newly formed esophagus, and re-attach the esophagus to the remainder of the stomach.

A right thoracotomy is performed to allow excellent access to the apex of the chest, so that a high anastomosis can be performed.
Transthoracic Approach
Procedure

Completed Anastomosis

Lots of medical complications may arise
Today, we will only BRIEFLY cover complications that may cause oropharyngeal and/or esophageal dysphagia
Complications

- Tracheobronchial injury
- *Anastomotic leak*
- Dysphagia
- Stricture
- Dumping syndrome
  - the undigested contents of your stomach are transported or "dumped" into your small intestine too rapidly
- Delayed gastric emptying
- Gastroesophageal reflux
Disruption of the Anastomosis Site

- Main complication related to esophageal resection
  - The leakage of nonsterile esophageal contents into the surrounding tissues
  - Particularly susceptible to disruption because:
    - Esophageal wall has no serosal layer (outer-most layer of the tube)
    - Arterial blood flow is variable and segmental
    - Preoperative irradiation
    - Residual tumor at the anastomosis site
    - Poor nutrition status
    - Distal blockage (gastric outlet obstruction)
Post-Op Involvement of Speech-Language Pathology

- **Post-op day (POD) #1-3**
  - Patient is *strictly* NPO
  - Strict aspiration precautions
    - Head of bed no less than 30 degrees @ all times
  - Nasogastric tube for low intermittent suction
  - Jejunal tube feedings begin on POD #1
  - Emphasize out of bed exercise per physical therapy
  - Nutritionist and/or dietician consult
Post-Op Involvement of Speech-Language Pathology

- **POD #3**
  - Nasogastric tube is removed

- **POD #4**
  - Speech-language pathology consulted for comprehensive oropharyngeal dysphagia evaluation
  - Clinical bedside dysphagia evaluation completed initially
  - Instrumental evaluation of swallowing (Flexible endoscopy) is *ALWAYS* performed to rule-out silent or non-sensate penetration &/or aspiration
Post-Op Involvement of Speech-Language Pathology

- When conducting endoscopic swallow study, only water is used secondary to potential risk of anastomosis leak.
- Our expertise in oropharyngeal dysphagia has been documented as being crucial to the success in these patients.
- It has been noted that many of these patients suffer from pharyngeal dysphagia post-op esophagogastrectomy.
Post-Op Involvement of Speech-Language Pathology

**Risks for pharyngeal dysphagia include:**
- Recurrent laryngeal nerve injury
- True-vocal cord injury
- Type of lumen used for intubation
  - Single or double
- Generalized malaise
- Premorbid health
Case Study Results: Post Op Day # 4

- NG tube removed early morning
- FEES swallow study performed
  - Results: Given sips of water only
    - Exhibited Severe Pharyngeal Dysphagia with sensate aspiration however nonproductive weak cough reflex
    - Exhibited globally weak swallow
      - Mild swallow reflex delay 2-4 sec
      - Impaired pharyngeal constriction
      - Impaired hyolaryngeal excursion therefore limited epiglottic retroversion
      - Resulting in impaired airway protection with sensate penetration and aspiration
Case Study Results: Post Op Day #4 and #5

- Aggressive dysphagia therapy begins
  - Pharyngeal e-stim using submental placement began BID
  - Shaker ex
  - Pitch elevation ex
  - Resistive breathing ex
  - Expectoration ex (“hock and spit”)
  - Notice, no actual swallowing is encouraged
Case Study Results: Post Op Day #6

- 2\textsuperscript{nd} FEES swallow study done
  - Results: Still at high risk for penetration and/or aspiration with large or consecutive boluses of thin liquids
    - Pooling in pyriform sinuses before swallow reflex resulting in spillage into interarytenoid space therefore causing penetration and aspiration
    - When given teaspoon amounts of water no penetration and/or aspiration noted
- Cleared to go for “Leak Test”
  - RF Esophagram using omnipaque
Leak Test?

- If patient “passes” the flexible endoscopic swallow exam, then they go to radiology for a **Gastrograffin Swallow Test or Omnipaque Swallow Test**
  - “It differs from a Barium Swallow in that the contrast material is water soluble and less irritating to body tissues if there is a leak from the esophagus.” -
  - “Aspiration of Gastrografin is extremely dangerous and often fatal.” -Fan ST; Lau WY; Yip WC; Poon GP; Yeung C; Wong KK. Limitations and dangers of gastrografin swallow after esophageal and upper gastric operations Am J Surg 155:495-497.1988
  - Lots of different points of views on which contrast to use?
Omnipaque

- **Nonionic, low osmolar solution**
  - Solution concentration very benign compared to gastrograffin
  - Tastes better
Brief MBS before Leak Test Case Study: POD #6

- Modified Barium Swallow study done in addition to leak test
  - Results of MBS: Moderate Pharyngeal Dysphagia
    - Sensate aspiration noted with large sips of thin liquid
    - Nonsensate penetration noted large sips of thin liquid during the swallow
    - Decrease penetration with small sips of thin liquids
  - Cleared for teaspoon sips of clear liquid

- Leak test results
Leak Test Results: Case Study POD #6

- 1 oz of Omnipaque 300 water soluble contrast & 4 oz thin barium
- Initial small swallows, no laryngeal penetration or aspiration noted
- Mid-esophagus at the level above the carina shows an anastomotic region without obstruction
- Contrast passed into the proximal duodenum w/out significant delay
- At the conclusion of multiple large swallows, mild coughing
  - Imaging of the oropharynx showed laryngeal penetration w/small amount of aspiration
- Additional swallows of thin barium were performed w/neutral head position and chin tuck maneuver
  - Postural adjustments made minimal difference
  - Limited bolus size eliminated penetration and aspiration episodes (same results as FEES)
Passed leak test on POD #6 but only cleared for tsp sips of clear liquids

3rd FEES done to determine if patient able to consume other textures safely

- Results: Mild-Moderate Pharyngeal Dysphagia
- Given peaches, puree, thin, and honey thick liquid
- Sensate penetration noted with large sips of thin liquids
- Penetration alleviated with chin tuck and small sips via straw
- Started on IVOR LEWIS DIET PROTOCOL
  - Clears for two weeks
After Leak Test?

- If no leak is detected, then the patient is started on clear liquids
- Continue with strict aspiration precautions
- Education provided about precautions of PO intake
  - DO NOT LIE DOWN at least 3 hours post eating and/or drinking
  - Start out drinking only 1-3 oz at a time
Case Study Results:  Post Op - 2 Weeks Later

- Pt tolerated clear liquids without difficulty utilizing limited bolus size (small sips)
- Remember, pt is also receiving J-tube feeds as primary nutrition and hydration source
- FEES Results:
  - Tolerated puree & dental soft textures with thin liquids one sip at a time (no dual consistencies) and neutral chin tuck
  - Continued to penetrate thins with consecutive large sips
  - Normal sensation
  - Neutral chin tuck reportedly eliminated penetration and aspiration episodes
  - Residuals in valleculae post mastication of peaches but cleared with sips of thin liquid with chin tuck
Dietary Regimen

- Dietary consult will be initiated for a “Gastric Bypass” diet
- Instruct patient to eat 6-8 small frequent meals per day
- Avoid very hot or cold beverages/spicy foods
- Have patients sit upright, chew slowly, and eat more than 3 hours before bedtime to assist in reducing reflux
- Drink fluids in between meals rather than with meals assists in controlling dumping syndrome
- Patient may have delayed gastric emptying if he/she had a vagotony
References

- Caffer, Lisa. Care of the Patient with Esophageal Cancer. Perspectives. 2000 Vol.1 no.4, p 5-7