Passy-Muir Special Event Webinar

Swallowing Series

Swallowing Management of the Tracheostomized Adult Patient

Case Presentations

Case Presentation

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Dysphagia Related to Head and Neck Cancer

- Tumors in the head and neck and / or the treatment can result in dysphagia
- Severity depends on structures involved and extent of treatment
- Not typically a linear progression re: improvement or decline

Dysphagia Related to Head and Neck Cancer

- Treatments
  - Radiation
    - Xerostomia
    - Lymphedema
    - Fibrosis
    - Mucositis
    - Nutritional compromise
    - Trismus
    - Dysphagia

Dysphagia Related to Head and Neck Cancer

- Treatments
  - Surgery
    - Anatomical changes
    - Sensory and motor impairments
    - Cranial nerve injury

Patient History

- 62 y/o male presented to OSH with severe dyspnea and stridor
- Required emergent trach and mechanical ventilation
- CT followed by laryngoscopy revealed 10mm laryngeal mass at the level of the true vocal folds
- Pathology report revealed **high grade invasive squamous cell carcinoma (SCCA)** of the right false cord, left sublottic and glottic regions

Patient History

- Patient remained hospitalized for 2 weeks
- Weaned from vent, but was not decannulated
- Issued a Passy-Muir ® Valve during hospitalization
- Discharged from OSH and referred to Vanderbilt to begin chemoradiation treatment for T3NoMo SCCA.
- Peg placed during chemoradiation

Referral to Speech Pathology

- Patient was referred for an MBS following completion of chemoradiation.
- At time of MBS
  - #8 Shiley trach
  - **100% peg tube dependent**
  - Not using Passy-Muir® Valve
  - Communicating via finger occlusion

Assessments

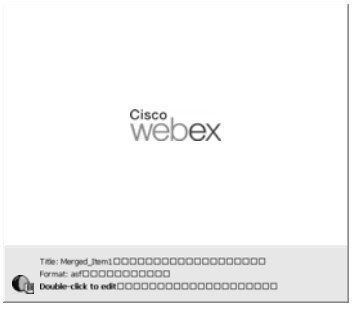
- Brief communication assessment was included during the MBS as follows:
  - Patient is able to easily tolerate finger occlusion of trach.
  - Voice is audible; slightly hoarse.
  - No increase in WOB. No effortful exhalations.
  - Patent airway- candidacy for speaking valve use.

Recommendations for Passy-Muir Valve

- Use Passy-Muir® Valve at home only during the day.
- Remove if any difficulty breathing.
- Completed patient education
  - Patient and wife verbalized understanding.

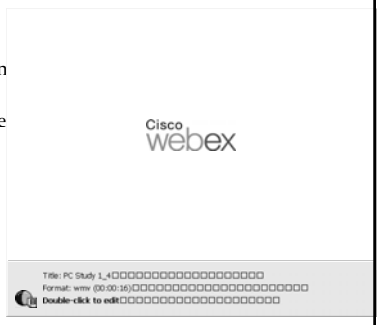
1st MBS

- Thickened edematous tissues
- Reduced base of tongue retraction
- Reduced epiglottic inversion
- Moderate aspiration during the swallow due to reduced airway protection



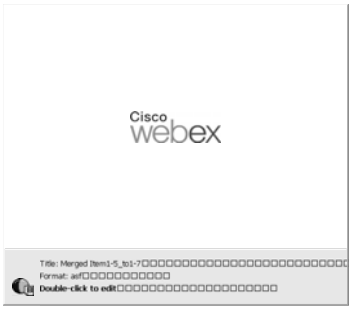
1st MBS

- Trace laryngeal vestibule penetration / aspiration
- Cued patient to finge occlude trach and cough
- This allowed patient to expectorate penetrated / aspirated material



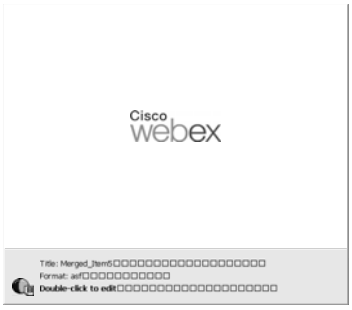
1st MBS

- Attempted additional compensatory strategies
  - Chin tuck
  - Varying consistencies and amounts
  - Trach occlusion
  - Effortful swallow
  - Cough / reswallow



1st MBS

- Vallecular residue
- Pyriform sinus residue
- Silent aspiration of pyriform sinus residue



Recommendations

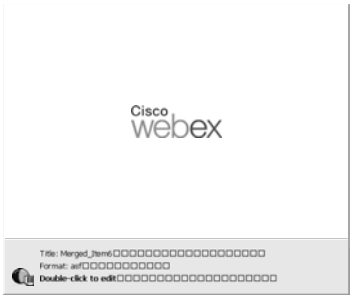
- Continue tube feeding for primary means of nutrition
- Maintain good oral hygiene in order to reduce the risk of illness in the event of aspiration
- Begin oral trials of **liquids and purees** via tsp only
- Passy-Muir® Valve on with all oral intake
- Compensatory Strategies
  - Double swallows with purees
  - Cough / reswallow with liquids
- Daily swallow exercises
  - Effortful
  - Masako
  - Mendelsohn
- Repeat MBS in 3 - 4 weeks

2nd MBS

- Patient returned 3 ½ weeks later and reported the following:
  - Using valve all day without difficulty
  - Not doing swallowing exercises
  - Drinking water. Stated "I drink water all day long". Not following recommendation to take liquids via tsp
  - No other oral trials had been attempted

2nd MBS

- Passy-Muir on during this study
- Increased lymphedema
- Transient penetration / aspiration
- Penetration to level of vocal folds with cough response
- No aspiration

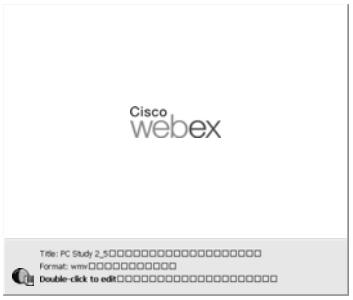


2nd MBS

- Mild vallecular residue due to reduced base of tongue retraction and reduced epiglottic inversion
- Improved sensation of residue; independently used compensatory strategies to clear residue
- No aspiration

2nd MBS

- Semi-solid followed by liquid
- Persistent mild residue
- Continues to have good clearance of residue
- No aspiration



Recommendations

- Advance to **mechanical soft diet with thin liquids**
- Maintain good oral hygiene in order to reduce the risk of illness in the event of aspiration
- Passy-Muir ® Valve on with all oral intake
- Compensatory Strategies
  - Small bites and sips
  - Alternate liquids and solids
  - Slow rate
  - Crush meds in purees when medically feasible
  - Swallow 2 times per bolus
- Begin weaning from peg tube with assistance from outpatient dietician
- Consider lymphedema therapy

Summary

- Improvement in swallow function is likely multifactorial:
  - Expected improvements due to gradual decline in radiation side effects over time
  - Resuming some oral intake may have improved pharyngeal muscle function
  - Use of Passy-Muir ® Valve restoring more normal physiology

Passy-Muir® Valve

- Restored subglottic pressure
- Restored cough function for better airway protection
- Improved sensation to pharyngeal residue
- Improved overall swallow function

Questions and Conclusion

- Thank you for attending the webinar.
- ***Please complete your course evaluation for CEU credit.***

For additional questions, email:

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- Carmin Bartow carmin.bartow@vanderbilt.edu

Case Presentation 2
Cheryl Tansley MS, CCC-SLP
Rachel Ieronimo MS, CCC-SLP

Gaylord Hospital, Wallingford, CT

Medical History

- 41 year old male
- Diagnosis : May 7, 2009 significant for anoxic brain injury with tetraplegia, chronic respiratory failure, s/p tracheostomy, unstageable sacral wound, s/p cardiac arrest, history of ETOH abuse
- Prolonged intubation with subsequent tracheostomy placement and PEG tube

Communication/Cognitive Assessment

- Oral Motor: Decreased strength/ROM
- Language: Higher level comprehension deficits
- Speech: Ataxic dysarthria
- Voice:
  - Grossly aphonic secondary to prolonged intubation
  - Unable to produce voice with Passy-Muir® Valve application

Communication/Cognition Goals

- Monitor ability to tolerate Passy-Muir ® Valve
- Investigate AAC options for communication
- Auditory comprehension at the 3-unit level for yes/no questions
- Ongoing assessment of verbal expression
- Ongoing assessment of reading comprehension
- Orientation x 4 with cues
- Ongoing assessment of cognition

Initial Bedside Swallow Evaluation

- Severely decreased oral motor strength and ROM
- Poor positioning
- Unable to manage secretions
- Patient continued to be unable to tolerate Passy-Muir® Valve secondary to:
  - edema from prolonged intubation
  - Poor secretion control

Swallowing Goals

- **Continued NPO status recommended secondary to aforementioned factors**
- Patient will participate in ongoing bedside and/or instrumental assessments
- Introduce oral motor and pharyngeal strengthening as tolerated
  - Oral bolus prep exercises
  - lingual ROM exercises

First Discharge

- Emergent discharge on 7/27/09 due to rectal bleeding, tachycardia, respiratory distress
- Readmitted to hospital 8/5/09
- Orders received 8/5/09 for Speech/Language/Cognition and Swallowing

Communication/Cognitive Assessment

- Voice: Able to tolerate Passy-Muir® Valve trials for 30-minutes with adequate voicing and no signs of respiratory compromise
- Language: Auditory comprehension WFL
- Cognition: Orientation and attention WFL
- Speech: Motor speech severely impaired

Communication/Cognition Goals

- Tolerate Passy-Muir® Valve for >30 minutes
- Increase oral motor strength through ROM exercises
- Assess reading comprehension and written expression
- Assess higher-level cognitive skills as able

Bedside Swallow Evaluation

- Decreased oral motor strength and ROM
- ½ tsp trials of puree were presented with Passy-Muir® Valve on
- Modified Evan's Blue Dye Test conducted as a screening tool
  - Positive for copious blue tinged secretions from trach noted greater than 30 minutes following bedside assessment

Swallowing Goals

- Patient will participate in ongoing oral trials with SLP only
- Patient will participate in MBS Study when appropriate
- Introduce oral motor and pharyngeal strengthening as tolerated with maximum cues

Second Discharge

- Emergent discharge on 8/27/09 due to changes in respiratory status
- Readmitted to hospital 9/4/09
- Orders received 9/4/09 for speech/language/cognition and swallowing

Communication/Cognitive Assessment

- Voice: Able to tolerate Passy-Muir® Valve for > 30 minutes
- Oral Motor: Mild-moderate oral motor weakness
- Speech:
  - Decreased speech intelligibility
  - Reduced vocal volume secondary to poor breath support

Communication/Swallowing Goals

- Complete oral motor exercises
  - lingual strengthening and ROM exercises including "tongue pushes"
  - lingual base retraction exercises, Masako Maneuver, effortful swallow, education and training of use of compensatory strategies
- Introduction to speech intelligibility strategies
- Introduction to diaphragmatic breathing techniques

Bedside Swallow Evaluation

- No s/s of aspiration were noted at bedside with trials of puree with Passy-Muir® Valve on
- MBS recommended to:
  - assess safety of swallow
  - determine efficacy of treatment strategies.

1st MBS Study

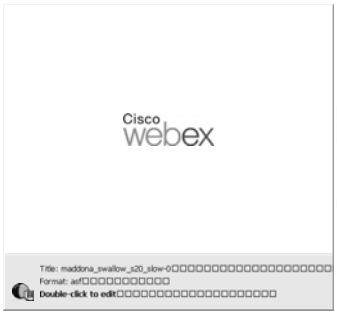
- 9/15/09 Mild to moderate oropharyngeal dysphagia
- ***Oral phase***
  - Limited oral opening
  - Increased mastication times with solids
  - Decreased anterior-posterior propulsion
  - Decreased tongue base retraction with piecemeal spillage of bolus into pharynx
  - Mild lingual residue of solids in oral cavity post swallow
- ***Pharyngeal phase***
  - Mildly delayed swallow initiation across consistencies
  - Premature spillage to level of the valleculae with liquids and to the level of the pyriform sinuses with mixed consistencies

1st MBS Study

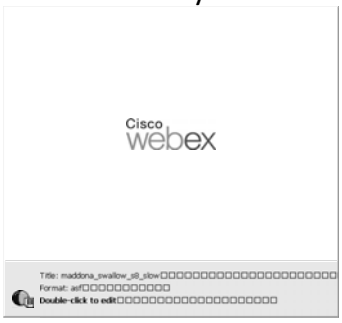
- Tolerated puree and solids without penetration
- Penetration was noted with nectar thick and thin liquids with chin in neutral position
  - A chin tuck technique was effective in eliminating penetration with both consistencies
- Mild residue noted in valleculae and pyriform sinuses
  - Multiple swallows decreased amount of post-deglutition pooling
- Esophageal-to-pharyngeal backflow observed
- Small posterior Zenker's Diverticulum at C5-6 verified by radiologist

1st MBS Study

1st MBS Study



1st MBS Study



- Majority of procedure was completed with Passy-Muir® Valve in place
- Final trial completed valve off
  - Penetration into laryngeal vestibule noted despite use of chin tuck posturing

Recommendations

- Diet: semi-solid food consistencies and nectar thick liquids
- Passy-Muir® Valve on during all oral intake
- Compensatory Strategies
  - chin tuck
  - reduced rate of intake
  - controlled bolus sizes
  - alternate liquids and solids
  - multiple swallows
- Aspiration precautions
  - upright positioning to 90 degrees and 45-60 minutes after meals

Swallowing Goals

- Patient will complete pharyngeal strengthening exercises with min cues and 80% accuracy
- Patient will tolerate current diet and upgrades as indicated 2/2 sessions
- Patient will comply with aspiration precautions/compensatory strategies with minimal cues 100%
- Patient will participate in repeat MBS study to assess readiness for diet upgrades

2nd MBS Study

- 11/30/09 Patient decannulated prior to follow-up MBS (stoma closed)
- ***Oral stage***
  - Grossly WFL
- ***Pharyngeal stage***
  - Mild delay in swallow trigger
  - Delayed epiglottic inversion
  - Transient penetration with chin tuck posturing with thin liquids
  - Penetration of cup sips of thin liquid
  - Increased post-deglutition residue throughout pharynx with solid boluses
    - Reduced with alternating liquids and solids

Recommendations

- Diet: Regular consistency diet with thin liquids.
- Swallow strategies include:
  - 90 degrees during all meals and 45-60 minutes afterwards
  - reduced rate of intake and control bolus sizes alternating liquids and solids
  - chin tuck strategy with all swallows

Conclusion

- When treating tracheostomized patient, it is important to encourage Passy-Muir® Valve use with dysphagic patients in order to:
  - facilitate independent secretion management
  - create airflow through upper airways to enhance smell, taste, and overall sensation
  - improve subglottic pressure to enhance bolus transfer and cough efficiency

In their own words…

"It was an integral part of my recovery process"
- John S.

"It made me feel human again"
- Linda F.

"It has made all the difference in my life…finally being able to communicate after months was amazing"
- Brenda J.