Rhode Island STROKE SYMPOSIUM

Navigating Post-Stroke Dysphagia

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DISCLOSURE

- I have no relevant financial relationships to disclose.

Learning Objectives:

1. Describe the motor and sensory patterns of a normal vs abnormal swallow.

2. Identify the importance of the SLP assessment and the rationale for instrumental testing.

3. Understand treatment availability and options for dysphagia post stroke.

Dysphagia

What is it?

-Difficulty moving food or liquids from the mouth to the stomach.

3 phases: oral, pharyngeal and esophageal.

SLPs are concerned with the oral and pharyngeal phases, both of which can be impacted by stroke.

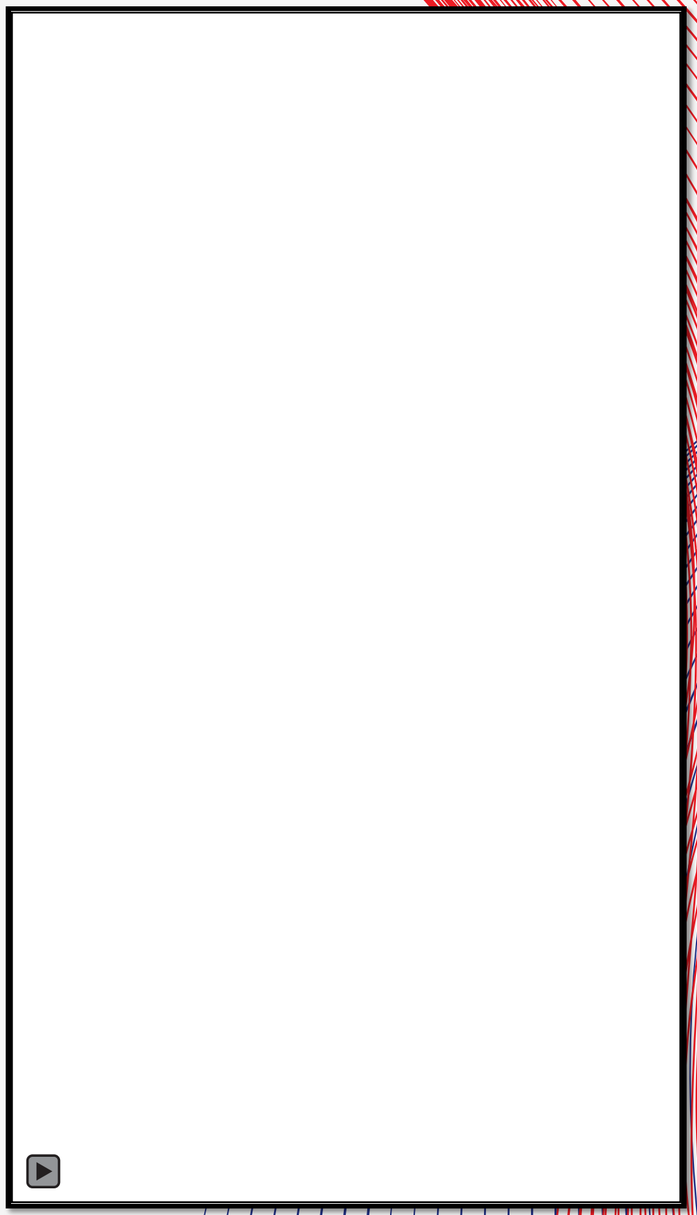
Esophageal dysphagia falls under GI scope of practice, though all 3 phases can impact each other.

Normal Oropharyngeal Swallow:

- Food and liquids pass from the mouth to the pharynx to the esophagus.

- <u>Oral Phase</u>
  - Acceptance of food/liquids
  - Lip Closure to prevent anterior spill
  - Mastication/manipulation
  - Posterior bolus control
  - Transit

- <u>Pharyngeal Phase</u>
  - Timing of swallow initiation
  - Velar elevation
  - BOT retraction
  - Laryngeal elevation
  - Hyoid excursion
  - Vocal fold closure
  - Epiglottic deflection
  - Pharyngeal constriction
  - Aryepiglottic fold movement to base of epiglottis
  - UES relaxation

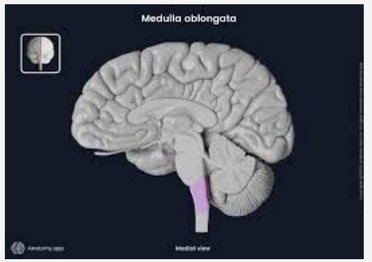


Swallowing Impairments Post Stroke

- Does location matter?
  - Yes and No
  - Typically R side lesions (52%) cause more deficits in swallowing than L (35%).

- Several areas of the brain work together to complete the complex task of swallowing including:
  - Primary motor cortex, Primary sensory cortex, cingulate cortex, Insula, Prefrontal cortex, Basal Ganglia, Thalamus, Cerebellum, Cranial Nerves
  - A lesion in any one or more of these areas does not necessarily mean that there will be resultant dysphagia.
  - But a lesion in any one or more of these areas could mean resultant swallowing deficits.
  - Every brain is different in its organization and plasticity.

- Lesions in the brain stem typically produce more profound pharyngeal deficits due to the location of the central pattern generator (CPG) for swallowing, breathing and coughing in the medulla.
  - Timing patterns for breathing and swallowing.
  - Initiation of a pharyngeal swallow.
  - Weak or absent cough reflex.



SLP role in the hours/days following stroke:

Prevalence:

- Recent study concluded:
  - Approx. 50% of people with stroke have dysphagia upon admission to hospital.
  - Only 18% after 72 hours
  - 12% at discharge from hospital

The majority resolves spontaneously during the days following the stroke.

- These pts will need management in the acute hospital setting until dysphagia resolves.

Stroke Swallow Screen (quick overview):

- Completed by trained RN
- If fails, made NPO and SLP consult placed
- If passes, put on regular diet and only consult SLP if having difficulty with regular diet

Considerations:

- Alertness: Can they stay awake enough to participate in swallow evaluation?
- Secretions: If they cannot manage their own secretions, they are not appropriate for SLP evaluation yet.

SLP role in the hours/days following stroke:

SLP assessment outcomes:

- NPO: not appropriate for po intake or overt s/s aspiration with all trials at the bedside
  - There is a time and place for feeding tubes, but they do not prevent aspiration.

- Modified Diet (thickened liquids, altered solids): Hopefully temporary!
  - Quality of life
  - Risk of UTI, dehydration
  - Lung tissue inflammation due to thickening agents

- Instrumental Exam
  - MBS
  - FEES

- Managing without difficulty- back to baseline diet

Instrumental Exam

Probably the most important part of a patient's swallowing recovery.

<u>Rationale for Instrumental Exam</u>:

- Identify muscles and structures that are impaired = necessary for rehab.
- Cannot see silent aspiration at the bedside.
- Some people cough when eating/drinking but are not aspirating.
- Assess for effectiveness of compensatory strategies.

<u>Modified Barium Swallow Study</u>:

- AKA Video fluoroscopic Swallow Study (VFSS).
- Various textures of food and liquids are mixed with Barium.

<u>Fiberoptic Endoscopic Evaluation of Swallowing (FEES)</u>

- A flexible camera passed through the nare to view the BOT, pharynx and larynx before/during/after the swallow.
- Typically for people that are unable to complete an MBS.

Strategies & Postures

Rather than changing the diet textures, the SLP may implement strategies and/or posture changes to improve po efficiency and reduce the risk for aspiration.

Oral Motor Strategies

- Place food/chew on the opposite side
- Lingual sweep to clear pocketed material

Pharyngeal Strategies (ie Chin tuck, head turn)

- NOT one size fits all!
- Should only be utilized when shown to improve swallow safety on an MBS.
- Chin tuck is only effective about 50% of the time & can actually CAUSE aspiration.

Now we know what a patient can safely manage, is this the end of the road? NO!

Reassessment throughout hospital stay.

- PO readiness
- Spontaneous Recovery
- Implementation and use of strategies

Assessment at next level of care regardless of severity.

- Every patient deserves at least a trial of rehabilitation for their swallow.
- 2 exceptions: obtunded, severely cognitively impaired

Not all rehab is created equal.

<u>Need quality AND quantity:</u>

- Better outcomes
- Reduce hospital readmissions

IRF	SNF	Homecare	Outpatient
5-7x per week 1 hour per day	3-5x per week Minutes vary	2-3x per week 30-60 minutes	As needed and as scheduling allows

- SLP scope of practice includes: Swallowing, Language, Cognition, Speech, Voice
- Trained in all areas, but many have advanced training in rehabilitation of one or two areas.
- Important to find a speech pathologist that has a background and skill set in dysphagia.

Oral Phase Rehabilitation

Strategies

- Place food/chew on opposite side
- Lingual sweep/reswallow

Strengthening

- Research shows that there is insufficient evidence regarding the efficacy of traditional oral sensory-motor exercises.
  - Too variable in delivery
  - No parameters for assessing improvement
  - Not enough studies and participants in the literature
- There are oral motor rehab programs that are successful but must be followed accurately to be effective.
  - For example, TPSAT: Tongue Pressure Strength and Accuracy Training
    - Lingual resistance 2-3x per week, 45 minute sessions
    - Uses IOPI (Iowa Oral Performance Instrument)
    - Shows improvement in lingual strength

Pharyngeal Phase Rehab

Must have an instrumental exam prior to initiation of effective pharyngeal phase rehabilitation.

MDTP

- McNeill Dysphagia Therapy Program
- Utilizes a hierarchy of textures and volumes
  - Food hierarchy always starts with the safest textures and gradually moves through textures and volumes until the patient is safely tolerating desired diet.
- Goal is to challenge the swallowing system and retrain a normal swallow.
- Can start with ice chips, even dry swallows if necessary, so NPO patients are able to participate.
- Results indicate improvement in swallow timeliness, movement of pharyngeal structures, strength of muscles involved in swallowing and overall efficiency of the swallow.
- Requires home practice (may need supervision), cognitive skills to follow directions, full 1-hour sessions multiple times per week.

Other methods of pharyngeal rehab: NMES, Shaker, Effortful swallow

Case Example

- Male, 40s, lateral medullary stroke

- MBS showed silent aspiration, significant delay in swallow initiation, reduced laryngeal elevation, reduced hyoid excursion, reduced epiglottic deflection
- Told he would never swallow again, PEG placed, came to IRF at RIH
- Was expectorating his own saliva as he was unable to swallow it.

- Completed intensive program of MDTP in conjunction with NMES
  - 5x per week
  - 1 hour per day
  - Plus daily homework

- Discharged on regular diet, thin liquids and plans for PEG removal.

- Takeaway: Don’t discount dysphagia rehab without at least trying.

PLUG FOR ORAL CARE!!

Aspiration Pneumonia does not occur from aspiration alone. There are people that are considered "functional aspirators."

Pillars of aspiration pneumonia:
Oral health
Presence of aspiration
Immune System Status

Good oral care is the most effective way to prevent aspiration pneumonia.

Aspiration pneumonia is most often caused by bacteria from the oropharynx, NOT food/liquids.

- Oral Care:
  - Should be completed AT LEAST twice per day
  - Should include cleaning the teeth, gums, inner cheeks, tongue
  - Includes dentures
  - Should include a toothbrush… foam swabs and toothettes are not successful in removing plaques and biofilm that harbor pathogenic micro-organisms

Pneumonia "Risk" Predictor

JRA

	Oral Health Status		Laryngeal Valve Integrity*		Immune System Status#		Predicted Outcome*#
1	Good	+	No Aspiration	+	Normal	=	No Pneumonia
2	Poor	+	No Aspiration	+	Normal	=	No Pneumonia
3	Poor	+	Aspiration	+	Normal	=	No Pneumonia
4	Good	+	Aspiration	+	Normal	=	No Pneumonia
5	Good	+	No Aspiration	+	Reduced	=	No Pneumonia
6	Poor	+	No Aspiration	+	Reduced	=	No Pneumonia
7	Good	+	Aspiration	+	Reduced	=	Low Risk of Pneumonia
8	Poor	+	Aspiration	+	Reduced	=	High Risk of Pneumonia

*Nakajoh et al., 2000

#Tobin & Grenik, 1984; Shockley, 1995; Terpenning et al., 2001

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