Dysphagia in the Geriatric Patient and
End of Life Issues

Meredith and I have no disclosures to declare.

Geriatric Dysphagia
Laura McBride, MEd, CCC-SLP, BCS-S
Medical Speech Pathology
Best Practices
February 26-27, 2016
The Aging Swallow

Our challenge is in separating changes of “normal aging” from the other diseases prevalent in the elderly such as stroke, mini stroke, PD, effects of medications, arthritic changes to the C-spine, vascular changes, hypertension, diabetes, restrictive lung diseases and the list goes on....

Logemann: changes occurring in the healthy Elder Ages ranging from 60-80+

- **Timing** of the swallow reflects decreased reaction times related to aging: OTT slightly but significantly longer - .5-.6 seconds; same with PTT; inconsistently slower pharyngeal wall contraction
- **Safety and efficiency**: More frequent penetration; no increase in the frequency of aspiration; residue slightly greater 2-3%

**Aging Men vs Aging Women:**
Older men more likely to silently aspirate due to fewer sensory receptors for coughing, men lose more range of motion

**Placing elder patients at risk of dysphagia as a result of illness and subsequent generalized weakness Logemann, JA, 2004**

Research bears this out...

- Loss of integrity of the sensory end organs resulting in decreased sensitivity in oral, pharyngeal and laryngeal structures Aviv et al., 1994
- Increased number of chewing strokes needed for adequate mastication (lets talk about dental status here) Peyron, et al., 2004
- Alteration in saliva (less ptyalin, more mucin) making saliva thicker and stickier (medications contribute)
- Reduction in taste and sense of smell impacting appetite Murphy, et al., 2002; Schiffman, et al., 1997
• Prolonged pharyngeal transit time increasing risk of airway compromise Robbins et al, 1992
• Arthritic changes to c-spine (osteoaphytes) reducing epiglottic inversion
• Increased incidence of Cricopharyngeal bar increasing the risk for UES obstruction (choking)
• Decreased duration of UES opening
• Increased apneic period during swallowing Robbins et al, 1992
• Increased incidence of inhalation after the swallow
• Reduced vegetative swallowing

• Reduction in esophageal peristalsis contributing to incomplete emptying of food into stomach contributing to early satiety Zobraliske et al., 1964
• Decreased muscle mass resulting in decreased tongue mass Sura et al., 2012
• Reduced posterior pharyngeal wall mass increasing pharyngeal space, Sura et al., 2012 reducing constriction and decreasing efficiency of bolus transition, increasing effort needed for bolus clearance
• Increased incidence of supraglottic penetration with larger liquid boluses but no appreciable increase in aspiration Daggett et al., 2006
• Decreased functional reserve

---

**Functional Reserve??**

The remaining capacity of an organ or body part to fulfill its physiological activity especially in the context of disease, aging or impairment.

• Hyoid and laryngeal maximum vertical movement is significantly reduced in the elder
• Reduced flexibility: cricopharyngeal opening duration across volumes is decreased; opening diameter is decreased
• Decreased sensory receptors

Logemann, JA (2004)
Murray discusses normal changes in bodily homeostasis which occur with aging but accelerate in frail individuals.

- “…subtle synergy of altered nutrition, unbalanced bodily homeostasis, and muscle loss”… “unable to bounce back from expected stressors”
- The rule of 30/70 Bortz, 2002

Murray concludes that it is important for clinicians to realize the importance of compromised functional reserve and identify those at risk of poor nutrition and frailty.

Keep in mind, elderly patients typically deny eating or swallowing problems but on further questioning will acknowledge that they:

- Take greater care when eating by taking small bites
- Chew more thoroughly or avoid foods which are difficult to chew
- Swallow repetitively
- “Wash” food down
- Avoid eating out for fear of excess coughing, choking

Changes and adaptations occurred so gradually, they do not perceive them as potential problems when they decompensate due to illness.

Considerations for intervention

- Enhancing sensory input of foods
- Maximizing nutrition per quantity of intake
- Education regarding importance of dental and oral health Ashford and Skelley, 2008
- There is evidence that increasing lingual pressure and UES opening by exercise is helpful Robbins, 1995; Shaker, 2002; Kahrilas, PI, 1991
- Strength training + Task specific swallowing practice Burkhead, et al, 2005
- Teach precautionary measures: early airway closure, repetitive swallow, alleviating head postures
Swallowing Deficits of Dementia

- Progressive and includes Alzheimer’s, vascular, Lewy body, frontotemporal, alcoholic, metabolic and/or nutritional dementia
- Swallowing disorder is impacted by a deterioration in cognitive abilities, memory, judgment, abstract reasoning, personality and language as well as onset of apraxia

Physiological changes

- Decreased lateral tongue movement
- Delayed initiation of pharyngeal swallow
- Reduced lingual retraction
- Reduced laryngeal elevation
- Bilateral pharyngeal hypomotility
- Xerostomia – effect of medication or aging or dental status/dentures
- Overall slow swallowing duration Priefer BA, 1997

Feeding issues

- Food agnosia/gustatory agnosia
- Feeding apraxia or object agnosia
- Decreased sense of olfaction and gustation
- Decreased appetite
- Impaired cognitive process of eating: attention, initiation, planning, conceptualization, visualization
- Loss of language skills for stating needs
- Overfilling of mouth
- Eating non-edible objects and pilfering any food or non-food items within reach
- Forget they have eaten
Dementia results in an overall slowing of the swallowing process leading to:

- Longer mealtimes
- Increased risk for aspiration due to slowed pharyngeal response and airway exposure
- Increased dependence on others – one of the risk factors for aspiration pneumonia in this population (Langmore, 2002)
- Deteriorates as the disease progresses

Treatment considerations

Should include the basic principles of

- Quality of life
- Dignity
- Comfort

Environmental modifications

- Increased mealtime supervision & cueing
- Diet modification – sensory enhancement
- Increased frequency of nutritious snacks and drinks

*Families should be the focus of care planning and treatment of dysphagia in this population*

(Sullivan, PA 2008)

Dementia or Delirium?

- Dementia is a slowly progressing disease process and usually permanent
- Delirium comes on quickly, lasts hours to days or weeks, is variable but can make memory and thinking worse and is similar to that of dementia or seem like a worsening of dementia
- Delirium is a common outcome in elders who become sick and have dementia or are advanced in age, have undergone hip or heart surgery, have infection, sepsis or heart failure
- For more about delirium: [www.delirium.org](http://www.delirium.org)
Food for thought...

During a bedside assessment, of a sick elderly female are findings normal changes related to age or delirium? Or both?

- Mrs. M: age 80 and in generally good health for her age fell, no fractures or bumps on the head but very sore from the fall
- Stayed in bed, took pain medications, little to eat or drink for 3 days
- Husband brought her to the ED with altered mental status

What do you think?

Risk factors for dysphagia post op

Age Matters

Ferraris, et al., 2001 found older patients with co-morbidities of diabetes, pre-op heart failure and renal insufficiency to have an increased risk for post op dysphagia

Atkins et al, 2004 from a risk factor analysis to identify prognostic variables which might be used to develop a strategy for optimizing outcomes after Esophagectomy found age and pneumonia were independently associated with mortality. Pneumonia was associated with a 20% incidence of death. Concluding... acceptable pharyngeal function and airway protection should be verified prior to resuming oral intake

Hogue, et al., 1995 suggested that OD is associated with higher rates of pneumonia, tracheostomy, increased length of stay and that individual predictors for OD are advanced age, duration of intubation and intraoperative use of TEE

Hospital Associated Disability aka HAD

- “The aging or silver tsunami” has resulted in a greater number of older adults with multiple chronic conditions
- Hospitalization is an especially significant event in the health care journey of and older adult often resulting in discharge with a new disability not present prior to the illness
- Increased risk for complications during hospitalization: delirium, falls, pressure ulcers, urinary and bowel dysfunction and malnutrition prolonging length of stay
- HAD is measured by changes in a patients dependence in the completion of ADL’s

Malone, et al., 2015
1/3rd of hospitalized older adults decline from baseline function; 20% developed new disability in the year after discharge and only 1/3rd returned to former baseline function Boyd, et al., 2008

Elders = 13% of the US population but accounted for 36% of hospital admissions and 44% hospital charges Russo, et al., 2003


Implications.....

- It is clear that “typical” changes do occur as we age and may represent dysphagia risks in the elderly which can exacerbate during acute illness or post op
- It is clear that our population is aging and living longer
- As clinicians working with the elderly, understanding these changes and separating them from pathology will help us develop tools to minimize swallowing difficulties related primarily to aging across all settings

It takes a village...not just for children!
An Interdisciplinary approach is essential

- Acute Care for the Elderly (ACE)
  Goals
  - Reduce HAD
  - Improve quality of care
  - Reduce healthcare costs
- Studies: showed decreased LOS, reduced cost, decreased repeat admissions
- Eat Walk Engage: interdisciplinary model
  Focused on
  - Early mobilization
  - Feeding assistance
  - Cognitive stimulation
- Length of inpatient stay for elders decreased by 3 days Allison, et al., 2015
2009 & 2012 Meta-analyses of earlier ACE unit studies confirmed:
• Cost savings via decreased LOS
• Reduced re-admissions
• Decreased adverse events
• Decreased HAD

Our role with the aging population....
do what we have always done but with the understanding of the unique differences inherent to the geriatric population
As a member of an interdisciplinary team:
• Evaluate
• Train: exercises and/or compensatory strategies
• Educate
• Advocate
• Discharge planning

“One of the Essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in the caring for the patient”

Spoken by Francis Weld Peabody, MD during a lecture to Harvard Medical Students, 1927

Thank you!
Dysphagia & End of Life Issues

Meredith A. Oakey, M.S., CCC-SLP
Vanderbilt University Medical Center
Saturday, February 27, 2016

Changes in Mortality

Percentage change in death rates by age: United States, 1935–2010

Causes of Death- 2013

1. Diseases of the Heart
2. Malignant Neoplasms
3. Chronic Lower Respiratory Diseases
4. Unintentional Injuries
5. Cardiovascular Diseases
6. Alzheimer’s Disease
7. Diabetes Mellitus
8. Influenza and Pneumonia
9. Nephritis, nephrotic syndrome, and nephrosis
10. Intentional Self Harm
11. Septicemia
12. Chronic Liver Disease and Cirrhosis
13. Essential Hypertension and Hypertensive renal disease
14. Parkinson’s Disease
15. Pneumonitis due to solids and liquids (18,579 in yr. 2015; 0.7% of all deaths)
Palliative Care

Palliative Care Defined:

The goal of palliative care is to help the patient with a serious illness feel better. It prevents or treats symptoms and side effects of disease and treatments. Palliative care also treats emotional, social, practical, and spiritual problems that illness brings up. When the patient feels better in these areas, he or she has an improved quality of life.

Palliative care can be given at the same time as treatments meant to cure or treat the disease. You may get palliative care when the illness is diagnosed, throughout treatment, during follow-up, and at the end of life.

NIH, Medline Plus

Hospice Care

Hospice offers

- medical care toward a different goal: maintaining or improving quality of life for someone whose illness, disease or condition is unlikely to be cured.
- Each patient's individualized care plan is updated as needed to address the physical, emotional and spiritual pain that often accompanies terminal illness.
- Hospice care also offers practical support for the caregiver(s) during the illness and grief support after the death.
- Hospice is something more that is available to the patient and the entire family when curative measures have been exhausted and life prognosis is six months or less.

Hospice Foundation of America

Hospice vs. Palliative Care

The Role of the SLP:

As defined by:
- ASHA
- Medicare

ASHA: Scope of Practice

“counseling individuals, families, coworkers, educators, and other persons in the community regarding acceptance, adaptation, and decision making about communication and swallowing”

“collaborating with other professionals (e.g., identifying neonates and infants at risk for hearing loss, participating in palliative care teams, planning lessons with educators, serving on student assistance teams)”

“making service delivery decisions (e.g., admission/eligibility, frequency, duration, location, discharge/dismissal) across the lifespan”
ASHA: Code of Ethics

Principle of Ethics I:

"Individuals shall not guarantee the results of any treatment or procedure, directly or by implication; however, they may make a reasonable statement of prognosis."

ASHA:

- Dysphagia does not yet have a page in the practice portal.
- http://www.asha.org/dp/clinical/endoflife/
- "SLPs contribute to the overall quality of life of patients nearing end of life. The goal of intervention at this point is not rehabilitative, but facilitative."
- "THE SPEECH PATHOLOGIST AND SWALLOWING STUDIES" Carol Monteleoni MS, CCC-SLP
  - Fast Facts & Concepts #128 Written for the End of Life/Palliative Care Resource Center, an initiative of the Medical College of Wisconsin; now published by the Journal of Palliative Medicine.

Medicare & Reimbursement

"Hospice benefits include speech-language pathology services for purposes of symptom control or to enable the individual to maintain activities of daily living and basic functional skills" (Sec. 230.11 of the Medicare Hospice Manual). There are different levels of care for hospice with differing per diem payment rates.

In addition, Medicare has alerted claims reviewers that they cannot automatically deny a claim based on a diagnosis of dementia. This allows for the provision of reasonable and necessary skilled services to those patients with dementia who can benefit from them."
Recommendations from Assessment

Diet Recommendations:

- What are the patient’s and/or family’s goals?
- ‘What has the patient’s medical team told you about the patient’s prognosis?’
- What if I don’t know what the goals of care are?
- What if the goals of care may be changing quickly?

Two Sets of Recommendations:

- “If the goals of care are life (preservation/curative/rehabilitation)...”
- “If the goals of care are comfort-oriented...”

Tube Feeding

Decision made by entire team:

- Patient & Family
- Physician (Neurologist, Oncologist, etc.)
- Surgeon, Gastroenterologist, Interventional Radiologist
- Physical Medicine & Rehabilitation Physician
- Case Manager
- Speech Pathologist

“Consider short-term alternate means of nutrition.”
“Consider long-term alternate means of nutrition.”
Surgical Candidacy for G-Tube Placement

Components to evaluation by surgeon include:
- Cardiovascular condition
- Pulmonary condition
- Frailty
- Prior abdominal surgeries
- Ascites
- Other exclusionary criteria

PEG Tubes in Advanced Dementia

- No association between placement of PEG and survival time.
- Earlier insertion of a PEG tube after the development of the need for eating assistance is not associated with longer survival.
- No improvement in pressure ulcers.

Why do people with advanced dementia still get PEG tubes?

- Despite decreased QOL, many families cite prolonged survival as primary reason for PEG placement.
- One study of 4997 nursing home residents with severe irreversible cognitive impairment:
  - 577 with feeding tubes
  - More likely if:
    - Stroke
    - Urban location
    - Non-white race

Mortality with PEG Placement

<table>
<thead>
<tr>
<th>Study</th>
<th>Intervention</th>
<th>Type of Patient</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mehra, 1990</td>
<td>Surgical feeding tube</td>
<td>Neoplastic, 16</td>
<td>68% mortality by 1yr</td>
</tr>
<tr>
<td>Cheadle et al., 1997</td>
<td>PEG tube</td>
<td>Mixed population, 54</td>
<td>24% mortality by 6m, 50% mortality by 1yr</td>
</tr>
<tr>
<td>Mehra and Patel, 1994</td>
<td>PEG tube</td>
<td>Mixed population, 40</td>
<td>22% mortality by 1yr, 54% mortality by 1yr</td>
</tr>
<tr>
<td>Trullen and Blank, 1995</td>
<td>PEG tube/revision of surgical</td>
<td>Mixed population, 61</td>
<td>15%-25% mortality by 1yr</td>
</tr>
<tr>
<td>Mehra, 1990</td>
<td>PEG tube/gastrostomy tube</td>
<td>Neoplastic, 38</td>
<td>61% mortality by 1yr</td>
</tr>
<tr>
<td>Furukawa et al., 1998</td>
<td>PEG tube/gastrostomy tube</td>
<td>Mixed population, 13</td>
<td>50% mortality by 6m for both populations</td>
</tr>
<tr>
<td>Bratton et al., 1999</td>
<td>PEG tube/gastrostomy tube</td>
<td>Mixed population, 14</td>
<td>24% mortality by 1yr, 50% mortality by 1yr</td>
</tr>
<tr>
<td>Provencher et al., 1997</td>
<td>PEG tube</td>
<td>Mixed population, 100</td>
<td>3.5% mortality by 1yr, 50% mortality by 1yr</td>
</tr>
<tr>
<td>Bratton et al., 1998</td>
<td>PEG tube</td>
<td>Mixed population, 72</td>
<td>6.1% mortality by 1yr</td>
</tr>
<tr>
<td>Furukawa et al., 1999</td>
<td>PEG tube</td>
<td>Mixed population, 112</td>
<td>13% mortality by 1yr, 61% mortality by 1yr</td>
</tr>
<tr>
<td>O'Day et al., 1999</td>
<td>Gastrostomy tube</td>
<td>Mixed population, 27</td>
<td>21% mortality by 1yr, 50% mortality by 1yr</td>
</tr>
</tbody>
</table>

Potential Medical Complications with PEG

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of Tube</th>
<th>Management</th>
<th>Complications, other</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unplanned</td>
<td>Gastrostomy tube</td>
<td>Excision of tube proximal to dysphagia</td>
<td>Aspiration, feeding</td>
<td></td>
</tr>
<tr>
<td>Abnormal</td>
<td>Gastrostomy tube</td>
<td>Gastrostomy tube placement, aspiration, feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Gastrostomy tube</td>
<td>Aspiration, aspiration, feeding</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complications Associated with PEG Tube Feeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound dehiscence</td>
</tr>
<tr>
<td>Skin excoriation</td>
</tr>
<tr>
<td>Tube migration</td>
</tr>
<tr>
<td>Pole at tube site</td>
</tr>
<tr>
<td>Gastric prolapse</td>
</tr>
<tr>
<td>Pleural line</td>
</tr>
<tr>
<td>Necrotizing fasciitis</td>
</tr>
<tr>
<td>Nausea</td>
</tr>
<tr>
<td>Fluid overload</td>
</tr>
<tr>
<td>Metabolic disturbance</td>
</tr>
<tr>
<td>Loss of oral intake</td>
</tr>
<tr>
<td>Loss of dietary intake</td>
</tr>
</tbody>
</table>

(Plonk, 2005)
Who benefits? Who does not?

Who Benefits?

- Persons with Head & Neck Cancer
- Persons suffering from acute stroke with persistent dysphagia 30 days after hospital d/c.
- Persons with neuromuscular dystrophy
  - ALS
- Patients requiring gastric decompression (e.g., malignant bowel obstruction)

Who does not?

- Persons with advanced stage cancer
- Persons with severe neuro-muscular disease
- Persons with advanced dementia
- Persons with severe depression
- Persons with severe anxiety

Goal Writing in Hospice Care

Comfort-oriented goals:
- “To improve comfort and reduce aspiration risk as much as possible within the limits of the patient’s progressive illness, the patient’s family will demonstrate use of compensatory feeding strategies during a clinician supervised snack.”
- “The patient’s family will voice understanding and provide teach back of education provided regarding changes in hunger and thirst at the end of life.”
To improve comfort and quality of life, the patient will demonstrate appropriate application of the following oral moisturizing methods with minimal verbal cues from the clinician:

1. Application of oral moisturizer with oral swab
2. Provision of ice chips, one at a time with 2-3 swallows per ice chip.

**Symptoms of End Stage Diseases**

**Dysphagia**

- **Goals of Treatment**
  - Patient Comfort
  - Reduced, if not eliminated aspiration
- **Treatment Methods**
  - Diet Modification
  - Caregiver Training
  - Others?

**Malnutrition**

- May be due to patient not being awake for enough hours of the day
- May cause lethargy and coma
- Decreased inflammatory response
- Cachexia
Symptoms of End Stage Diseases

Dehydration
- Due to patient not being awake for enough hours of the day
- Loss of thirst at end of life
- Dehydration vs. IV fluids

(Smith, 2011)

Diarhea
- Can result in patient fatigue, caregiver burden, skin breakdown, possibly refusal of food & liquid

Constipation
- Can result in loss of appetite, refusal of food & liquid, agitation, increased nausea

(Smith, 2011)

Common Symptoms of End Stage Diseases

Nausea/Vomiting and Anorexia
- Another source of aspiration
- Can result in refusal of food/liquid

Dyspnea

(Smith, 2011)
Thank you!

Meredith A. Oakey, M.S., CCC-SLP
meredith.a.oakey@vanderbilt.edu