Dysphagia Management of the Medically Complex Patient

DLBCL Primary Thyroid Involvement

Disclosures

Serve on the Tennessee Department of Health Board of Communication Sciences and Disorders and receive a quarterly stipend.
What is DLBCL?

- Diffuse Large B-Cell Lymphoma (DLBCL)
  - Blood Cancer
  - Most common form of Non-Hodgkin Lymphoma
  - 2 main forms:
    - A type
    - B type

- First symptoms:
  - Rapid swelling of the neck, arm pit, or groin caused by enlarged lymph nodes
  - Occasionally painful
  - Night sweats, unexplained fever and weight loss
  - Primarily occurs in adults; average age of diagnosis is 60-65 years of age
  - Slightly more common in men than in women

Lymphoma Research Foundation, lymphoma.org
Leukaemia Foundation, leukaemia.org.au

Treatment for DLBCL

- Considered "high grade" and rapidly advancing. Treatment must begin quickly.
- Chemotherapy first – R-CHOP
  - Rituxan – an antibody combined with several chemotherapy drugs (CHOP)
  - Radiation may be added as well as stem cell transplants or additional chemo drugs
  - Thyroidectomy or resection

Primary Thyroid Lymphoma and Dysphagia

- What do we know?
  - Primary thyroid lymphoma is uncommon
    - accounts for 1-8% of thyroid tumors and 1-3% of all lymphomas.
  - The most common clinical presentation is a neck mass with compressive/obstructive (40-50%) symptoms such as dyspnea, dysphagia and pain.
  - This type of DLBCL is more prominent in women than men but age of onset is still in the 60s.

Fatima et al. (2014), Ruggiero et al. (2005), Sippel et al. (2002)
Thyroidectomy Considerations

- Larynx
  - Recurrent laryngeal nerve
    - Runs past the thyroid gland below the larynx
  - Superior laryngeal nerve
    - Enters the larynx between the cricoid and thyroid, close to the thyroid gland

Surgical Complications:
- Stretching – eventual recovery
- Inadvertent cut
- Sacrifice for cure

endocrinesurgery.net.au

Thyroidectomy

- Sippel et al (2002) tell us that, while treatment approaches are generally chemotherapy and radiation, a significant number of thyroid lymphoma patients experience obstruction due to mass growth that affects breathing and swallowing and surgical intervention is required.
Case Study – R.N.

- 69y/o male seen in the ED 9/21/15 with
  - Right neck swelling
  - Occasional difficulty swallowing
  - 10 lb unintentional weight loss
  - Voice changes
  - Onset approximately 4 months prior
  - ‘Extensive’ workup at OSH with no diagnosis (no records available for review)
  - PMH: HTN, OSA, GERD, arthritis, R THA, R TKA, BPH

Case Study – R.N.

- CT of neck 9/21/15:
  - Large homogenous soft tissue mass measuring 10.6 x 7.3 x 7.1 cm in the right anterior cervical region, extending superiorly from the level of the cricoid cartilage inferiorly into the superior mediastinum, with its inferior most margin projecting 2.5 cm below the inferior margin of the right clavicular head
  - Mass effect on the midline structures, with 1.0 cm leftward deviation of the trachea and esophagus, though the trachea remains patent throughout the duration of its course
  - Right carotid artery is almost entirely encased by the mass from its origin to the level of the carotid bifurcation

Case Study – R.N.

- What happened next:
  - ED referred pt to ENT as outpatient
  - ENT (10/05/15) notes ‘fixation of the right hemi larynx’ and strong suspicion for ‘aggressive thyroid cancer invading the recurrent laryngeal nerve’
  - FNA: abnormal lymphoid infiltrate
Operative intervention 10/08/15:
1. Incisional biopsy of right thyroid malignant lesion.
2. Debulking of thyroid malignant lesion anterior to trachea.
3. Right sternocleidomastoid muscle pedicled rotation flap for purposes of creating a tracheostoma.
4. Advancement of left sternocleidomastoid muscle for purposes of creating a tracheostoma.
5. Creation of funnelized tracheostoma with skin bound to trachea.

And then...
- Major complications
  - Large, open neck wound
  - Poor healing
  - Pneumonia
  - DVT
  - Chemotherapy interruptions
  - ED visits/Hospital admissions x6
  - CIP/CIM
SLP Involvement

- Initial consult 10/9/15
  - Clinical Bedside Swallow, Passy Muir Speaking Valve Assessment
- VFSS 10/13/15, 10/19/15, 10/29/15, 12/09/15, 1/25/16
- FEES 11/06/15, 11/19/15

VFSS #1 (10/13/15)

VFSS #2 (10/19/15)
Goal remains: ‘eat soft stuff by my birthday’ in May
More medical challenges
Repeat VFSS scheduled for 3/01/16
I have no financial or nonfinancial relationships relevant to the content of this presentation.
### Why do our ICU patients have dysphagia?

- Intubation trauma
- Neuromuscular weakness
- Altered sensorium
- Reduced laryngeal sensation
- Dyssynchronous breathing and swallowing
- Reflux

Macht et al. (2013)

### Why do our ICU patients have dysphagia?

- Could xerostomia (extending to pharyngeal/ laryngeal dryness) be a contributing factor?

### Dysphagia Risk Factors for Critically Ill Patients

- Preexisting dysphagia
- Cancer, surgery, or radiation to head, neck or esophagus
- Delirium, sedation, dementia
- Stroke or neuromuscular disease
- Longer duration of mechanical ventilation (>48 hours)
- Tracheostomy
- Severe GERD
- Paralytics
- **Critical illness polyneuropathy**

Macht et al. (2013)
**CIP / CIM**

- **Critical illness polyneuropathy** (CIP) and **critical illness myopathy** (CIM) are overlapping syndromes of diffuse, symmetric, flaccid muscle weakness occurring in critically ill patients and involving all extremities and the respiratory muscles.

**Muscle weakness**

- In a study investigating the effects of chronic bed rest in healthy individuals, Bloomfield (1997) reports that muscle mass decreases dramatically accompanied by as much as a 40% decrease in strength.
- These neuromuscular adaptations are even more pronounced in those with co-morbid disease and the aged (Urso, Clarkson, & Price, 2006).
- Until recently there were no reports specifically addressing pharyngeal weakness, but in 2010 Mirakhani et al. found that extremity muscle weakness was an independent predictor of dysphagia and aspiration after extubation.

**Prevalence of dysphagia in patients with Critical Illness Polyneuropathy**

- Matthias et al. (2015) used FEES to examine 22 patients with CIP to determine prevalence of dysphagia in this population.
  - Findings:
    - 92% exhibited dysphagia initially
    - 77% exhibited laryngeal hypesthesia (reduced sensation) initially
What do we do with these dysphagic patients?

Keep them NPO?

- No Food or Drink
- NPO
- Decreased swallow frequency
- Deconditioning
- Exacerbation of dysfunction

Case Study - JD

- 67 y/o male admitted to MICU
  - s/p fall secondary to possible seizures
  - Respiratory failure – o2 sats at 60%
  - Sepsis
  - Pna
  - Acute encephalopathy (possible over-medicated at home)
    - AKI
  - PMH: HTN, DM, CAD, COPD, and remote h/o throat cancer treated with radiation therapy
JD

- B/s swallow eval order received on day 2
  - Oropharyngeal dysphagia
  - Overt s/s of aspiration
  - Recommend FEES
- FEES completed day 3
  - AMS
  - Poor LOA
  - Occasionally requiring face mask O2

FEES images

- Quick review

FEES # 1
**Results / Findings:**
- Immobile right TVF
- Severe dysphagia with silent aspiration across all consistencies attempted. Tissues appear edematous and fibrotic which is c/w late effects of radiation therapy. Suspect that patient has chronic dysphagia due to h/o radiation therapy which is exacerbated due to patient’s debilitated condition, respiratory complications and AMS.
- Acute on chronic dysphagia
- Too medically compromised to risk aspiration

**Recommendations:**
- Alternate feeding method
- NPO except ice chips (after good oral care)
- Too lethargic and confused to attempt strategies / exercises

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**JD Medical Course**

- Decline in respiratory and mental status
  - Required venti-mask due to inability to maintain O2 sats
  - No one administering ice chips (very risky)
  - SLP continued to check on patient, but several “failed attempts” due to medical status, mental status
- After 1 week, MS slightly improved. MD requested repeat FEES to determine if patient needed a peg tube.

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**JD - FEES # 2 (7 days after 1st FEES)**

- Respiratory status
  - Requiring venti-mask (50% Flo2) – removed briefly b/t bites / sips but sats would drop to low 80s without mask in place. High 80s with mask.
- Oral mech
  - Weak, breathy voice
  - Dried, bloody, thick secretions adhered to palate, tongue and lips. Stringent oral care provided to remove large amount of dried secretions prior to introduction of po
Pharyngeal / laryngeal exam
• Thick tan secretions present throughout pharynx
• Tissues are edematous and fibrotic
• Immobile right TVF

Results:
• Similar findings to prior FEES

Recommendations:
• Continue TF (Peg vs. dohoff?)
• NPO except ice chips (1 at a time after good oral care)
• Pharyngeal swallow exercise if able to participate (Effortful, Mendelsohn, Masako, Supraglottic)

Gradual improvement over next week
• Improved mental status
• Improved respiratory status
  • Weaned from venti-mask to nasal cannula
• Improved oral hygiene
• Participated in swallow therapy
  • Rehabilitative (exercises)
• Eating ice chips (more liberally than recommended)
JD – FEES # 3 (8 days later)

- Alert. Baseline MS
- Oral mech: significantly improved oral hygiene
- Pharyngeal / laryngeal exam
  - Moist, pink mucosa
  - Immobile right TVF
  - Small amount of thin, clear secretions pooled in vallecula and pyriforms

JD – FEES # 3

- Results: Moderate pharyngeal dysphagia. Silent aspiration of thin liquids. Pharyngeal residue. Likely nearing baseline swallow function
- Recommendations:
  - Begin Purees and thick liquids. Continue TF as needed
  - Compensatory techniques: Alternate thick liquids and purees, 2 swallows, small bites and sips, frequent cough / reswallow during snacks / meals
  - Continue swallow exercises (to get back to baseline)
  - Maintaining good oral hygiene
  - Continue swallow tx at SNF
  - Repeat FEES or VFSS in 2 weeks

What do we do with these dysphagic patients?

- Oral hygiene
  - Reduce oral bacteria
  - Reduce risk of pna if aspiration occurs
  - Prevent xerostomia
  - Allow sips and chips (Consider Frazier Water Protocol information)
  - Increases swallow frequency
    - Prevents further pharyngeal atrophy
    - Good for oral care / oral hygiene
    - Minimizes xerostomia

- Alert. Baseline MS
- Oral mech: significantly improved oral hygiene
- Pharyngeal / laryngeal exam
  - Moist, pink mucosa
  - Immobile right TVF
  - Small amount of thin, clear secretions pooled in vallecula and pyriforms
What do we do with these dysphagic patients?

- Reassess frequently
- Avoid “strict NPO” if possible
- Exercise
  - Use it or lose it

Exercise in the ICU

- The literature suggests that a hands-off approach in the ICU may cause more harm than good and that early intervention can minimize or potentially reverse the impact of the debilitating processes of CIM, CIP, and muscle disuse atrophy.
- Other rehabilitation disciplines have established that intervention in the ICU is most successful when begun early with range of motion and light exercise to preserve strength and mobility, which can then be followed by strength training regimens (Burkhead, 2011)

The rest of the story...

- Matthias et al. (2015) used FEES to examine 22 patients with CIM to determine prevalence of dysphagia in this population.
  - Findings:
    - 93% exhibited dysphagia initially
    - 77% exhibited laryngeal hypesthesia (reduced sensation) initially
    - All patients began therapy – PT, OT, SLP (average 300 minutes per day)
    - FEES at week 2: substantial swallow improvements in majority of patients
    - Swallow function recovered completely in 95% within 4 weeks
Disclosures

- I have no financial or nonfinancial relationships relevant to the content of this presentation.

Myasthenia Gravis

- Epidemiology
- Pathophysiology
- Clinical Features
- Treatment Options
- Case Study
What is Myasthenia Gravis?

- Grave Muscular Weakness
- Autoimmune Disorder
- Prevalence: 20/100,000
- Men > Women?
- Average age of onset

Pathophysiology of MG

- Normal neuromuscular contraction occurs when acetylcholine (ACh) is transmitted across the neuromuscular junction, binding with ACh receptors and activating a muscle contraction.
- In Myasthenia Gravis, the body produces antibodies that block, alter or destroy the receptors for acetylcholine at the neuromuscular junction.

Clinical Features

- **Specific muscle weakness** vs generalized fatigue
- Ocular motor disturbance, ptosis or diplopia
- Oropharyngeal muscle weakness
  - Dysphagia
  - Dysarthria
- Limb weakness
- Difficulty breathing
Dysphagia is present in 15% to 40% of patients with Myasthenia Gravis.

Dysphagia is the presenting symptom in 6% of cases.

Prevalence of dysphagia in patients with Myasthenia Gravis

- Reduced labial and lingual strength
- Reduced pharyngeal contraction
- Reduced laryngeal elevation
- High incidence of aspiration; often silent

Dysphagia Characteristics

Treatment regimens are practical rather than curative

- Cholinesterase inhibitors
- Thymectomy
- Corticosteroids
- Immunosuppressant Drugs
- Plasma Exchange
- IVIG (Intravenous Immune Globulin)
Dysphagia Management

- Close and careful monitoring of symptoms
- Improvement/decline in dysphagia is dependent upon pt’s response to treatment
- Frequent instrumental assessment during crisis due to the concern for silent aspiration
- Expect the unexpected!

Case Study - AG

- 39 y/o male admitted with MG exacerbation
  - Complaint of mild dysphagia
  - Shortness of breath
  - Diplopia
- Diagnosed with Myasthenia Gravis in 2014
  - Diplopia presenting symptom
  - Managed by Mestinon until discontinued 2 weeks prior to hospitalization
  - Anxiety in the setting of coping with MG

AG Hospital Course Overview

- 9/11: Admitted to NCU for IVIG
- 9/12: Clinical Swallow Evaluation / IVIG
- 9/13: Progressive weakness IVIG
- 9/14: Progressive decline with subjective report of worsening dysphagia
- 9/15: Request FEES
- 9/16: FEES reveals moderate dysphagia with silent aspiration of thins.
- 9/17: Medically stable: discharge home
**Initial Clinical Swallow Exam 9/12**

- IVIG first treatment
- Complaint of mild difficulty chewing
- Noted mild dysarthria
- Broadly WNL
- Regular solids/thin liquids
- Anxiety

**AG FEES 9/16**

**Re-Admitted for MG Crisis**

- 9/21: Re-admitted to NCU for Crisis - PLEX
- 9/23: FES reveals Mod- Severe Dysphagia with silent aspiration of thins and moderate pharyngeal phase residues of solids.
- 9/24: Intubated
- 9/26: Remains intubated. PLEX day 5
- 9/27: Vent weaning protocol
- 9/28: Extubated
- 9/29: FES reveals Mod- Severe Dysphagia with aspiration of nectar and fruit cocktail
- 9/30 to 10/5: Slow, steady improvement
- 10/6: VFSS reveals improving dysphagia; chin tuck effective in preventing aspiration. Regular solids/thin liquids
- 10/8: Discharge to Inpatient Rehabilitation
Neurology Outpatient Visit:

- Stable
- Consuming regular solids/thin liquids: **No Complaints**!
- Mild residual Dysarthria which is worse at night and during lengthy conversations
- Intensive medication regimen
  - Mestinon Q4-6 hours
  - Prednisone 60mg/day (plan to taper off)
  - Cellcept BID
Speech Pathologist plays a very important role in the management of Myasthenia Gravis
- Close and careful monitoring
- Individual and variable response to treatment
- Silent aspiration is often present
- Essential to perform FEES/VFSS
- Listen to your patient's perception of their weakness

Take Away Points