Chasing the Swallow:

Best Practices for EI Pediatric Dysphagia

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Arizona Speech Hearing Association

Overview

- About that EI SLP
- Typical Reflex Development
- IPP and Referrals
- Functional Treatments
- Case Studies (Sink or Swim)
- Questions?

Disclosures

Non-Financial Disclosure:

Michelle L. W. Dawson, MS CCC-SLP is Immediate Past President (2019-2020) of SCSHA (SC Speech Language Hearing Association) as well as Treasurer (2018-2020) of CSAP (Council of State Association Presidents).

Financial Disclosure:

Michelle L.W. Dawson, MS CCC-SLP is Member-Manager and Speech Language Pathologist for HeartWood Speech Therapy, LLC, in Columbia, SC. I receive royalties for similar presentations from PESI, Inc and SpeechTherapyPD.com, LLC, however I did not receive compensation from them for this course. I receive royalties for similar presentations from First Bite: Fed, Fun, Functional PodCourses, however I did not receive compensation from them for this course. I received royalties from ARSHA today.

Biography

Michelle completed her MS in Communicative Sciences and Disorders from James Madison University in Harrisonburg, VA . She has worked in a variety of settings including the public schools, in-patient and out-patient rehabilitative hospitals, as well as spent many years in early intervention. She specializes in treating medically fragile and complex pediatric patients with oropharyngeal dysphagia and feeding disorders through her private practice HeartWood Speech Therapy, LLC.

About that EI SLP?

ASHA Guidelines

- **Position Statement: Roles and Responsibilities of Speech-Language Pathologists in Early Intervention**
- *Our Roles should be implemented in accordance with these guidelines:*
  1. Services are family centered and culturally/linguistically responsive
  2. Services are developmentally supportive and promote children's participation in their natural environments
  3. Services are comprehensive, coordinated, and team based
  4. Services are based on the highest quality of evidence that is available

Typical Reflex Development

Reflex Development…

Why is it important to understand Typical Reflex Development?

…

Because most of our medically fragile populations

miss full PO access during these

critical moments

Brains of The Operation

- We assume the Brain

…our Cerebral Cortex…

is the source of our swallowing/eating capabilities…

NOPE

"Many of the current models of feeding assign a primary role to brainstem central pattern generators (CPGs) for regulating coordination among oral muscles for early sucking and chewing"

(Wilson, E.M., et all, 2012)

CPGs

- CPGs act like a "Bouncer"

- Only certain information goes up to the Cerebral Cortex…this info shapes the size of our bites/sips

"The CPG receives inputs from higher centers of the brain, especially from the inferior-lateral region of the sensorimotor cortex and from sensory receptors"

(Lund, J.P. & Kolta, A., 2006)

About those CPGs…

- "…basic, identifiably distinct motor patterns are in place for sucking, chewing, and babble early on but that these coordinative infrastructures are comparatively poorly organized"

- "The coordinative infrastructure for suckling is not a prerequisite for the emergence of later feeding behaviors, rather, these related but distinct, motor patterns emerge in parallel"

(Steeve, R.W., et al, 2008)

When can PO trials begin?

- Week 34 is common

- Prior to this it is difficult to

regulate suck/swallow/breath

- Preemies may lack the buccal suckling pads

~layer of fat in cheeks

~assist with building intraoral pressure

(Bahr, 2010)
http://dysphagiacafe.com/2015/09/03/newborn-and-early-mouth-throat-development-feeding-swallowing/
(Law-Morstatt, L., et al, 2003).
(McCarthy, J., 2006)

Rooting Reflex

- Brush cheek or lips and turn towards source
- Assist with finding nipple to latch
- CN V, VII, XI, XII

(Trigeminal, Facial, Spinal Accessory, Hypoglossal)

- Dissipates around 3-6 months

(Arvedson, J.C & Brodsky, L, 2002
Bahr, 2010
McCarthy, J., 2006
Walker, H.K., 1990)

Suckling Reflex

- Front-Back Wavelike Motion around finger/nipple by the tongue
- Allows infants access to NNS and NS
- Easily seen around NUK pacifiers
- Dissipates around 6-12 months

(Bahr, 2010)

Tongue Protrusion

- Built in Safety Mechanism?
- If present something to front of tongue, it pushes it out…AKA Tongue Thrusting
- CN XII (Hypoglossal)
- Dissipates around 4-6 months
- Red Flag…Alarm Clock for PO trials

(Arvedson, J.C. & Brodsky, L., 2002)
(McCarthy, J., 2006)

Swallowing Reflex

- Bolus (Breast Milk or Formula) enter oral cavity
- Triggers when reaches posterior faucial pillar
- ***Thankfully***…we keep this reflex

(Bahr, 2010)
McCarthy, J., 2006)

Transverse Tongue Reflex

- Place finger, nipple, spoon on side of tongue
- CN XII (Hypoglossal)
- Tongue lateralizes to reach the object/bolus
- Training wheels for lingual sweep
- Dissipates 9-24 months

(Arvedson, J.C. & Brodsky, L., 2002
Bahr, 2010,
McCarthy, 2006)

Gag Reflex

- Posterior ¾ of Infant's Tongue
- CN IX and X (Glossopharyngeal, Vagus)
- Babies learn how to control it around 4-6 months
- Moves to posterior 1/4 portion of tongue as we age

(Arvedson, J.C. & Brodsky, L., 2002
Bahr, 2010)

Phasic Bite Reflex

- Primitive bite reflex dissipates around 9-12/15 months
- CN V (Trigeminal)
- Press on babies gums and little one will bite down
- Around 4-6 or 5-7 months they begin to control this
- Suckle-Bite-Suckle-Bite

(Arvedson J.C & Brodsky, L., 2002 Bahr, D. 2010. http://sandiegooccupationaltherapy.com/wp-content/uploads/2012/01/TypicalDevelFeeding.pdf)

Vertical Chewing

- Up/down chew pattern
- 9-15 months
- Transitional Chewing…tongue will assist with lateralizing to prep for Rotary Chew

http://sandiegooccupationaltherapy.com/wp-content/uploads/2012/01/TypicalDevelFeeding.pdf

Rotary Jaw/Chew

- Emerges between 15-18 months
- Not fully developed until 48 months+
- "Children as old as 35 months of age did not yet demonstrate an adult like estimated number of chewing cycles for the most basic and earliest introduced consistency type-puree"

(Wilson, E. M., et al, 2012)

Referrals

"We can do that in Early Intervention?"

"What?"

"Really?"

ASHA Guidelines

- Principle of Ethics I
  - B. Individuals shall use every resource, including referral and/or interprofessional collaboration when appropriate, to ensure that quality service is provided.
- Principle of Ethics II
  - G. Individuals shall make use of technology and instrumentation consistent with accepted professional guidelines in their areas of practice. When such technology is not available, an appropriate referral may be made.
- Principle of Ethics IV
  - A. Individuals shall work collaboratively, when appropriate, with members of one's own profession and/or members of other professions to deliver the highest quality of care.

How Do I Do This?

- Pick up the phone and call the PCP
- Pick up the phone and call the Special Needs Coordinating Nurse
- Fax SLP evaluation
- Attend an MD apt

What s/s would indicate a referral?

Pulmonologist

- c/o "not sleeping"
- c/o "stirring/restless sleep"
- s/s of bags/discoloration under eyes
- s/s shortness of breath with movement
- s/s of shortness of breath with PO intake
- s/s of inhalation/exhalation stridor
- s/s of discoloration with activities

Otolaryngologist

- c/o "not sleeping"
- c/o snoring when sleeping
- c/o "excessive spitting-up"
- s/s of bags/discoloration under eyes
- s/s of open mouth breathing
- s/s of inhalation/exhalation stridor
- s/s of dysphonia
- s/s intermittent low grade fevers
- s/s of overt aspiration with PO
- s/s of oral tethering

Gastrointestinal

- c/o emesis or excessive "spitting-up"
- c/o "not hungry"
- c/o halitosis
- c/o infrequent bowel movement
- c/o and s/s of changes in bowel consistency after introduction of new food(s) and/or changes in formula(s)
- s/s of pain or discomfort with PO intake, or shortly thereafter
- PMH of GI following, d/c, changes in fxn

Allergist

- Eczema and GERD and URI!!
- "GI tract in 50-60%, skin in 50-60%, and respiratory systems in 20-30%" (Melkonina & DeiMattia, 2016, p. 10)
- c/o and s/s upper airway congestion
- c/o and s/s of changes in bowel consistency after introduction of new food(s) and/or changes in formula(s)
- c/o and s/s of discomfort/pain after introduction of new food(s) and/or changes in formula(s)
- Family PMH of Food Allergies

Registered Dietitians

- WORK TOGETHER and RESPECT THIS PROFESSION
- c/o several different formal changes
- c/o and s/s of FTT or slow weight gain
- Concerns for excessive weight gain

Occupational Therapist

- c/o and s/s of Postural Support for PO Intake
- c/o and s/s Fine Motor Delay
- c/o and s/s Sensory Aversions
- Overlap of Scope of Practice

Physical Therapist

Really? Why?

"Alongside oral motor and nervous system development, swallow maturity in children also depends on success attainment of postural control, muscle strength, and coordination" (Godwin & Rogers, 2016, p. 17).

- Postural Support for PO Intake
- Core Strength for PO intake
- Communicate Concerns for:
  - Mobility impacting GI which impacts hunger cues
  - Positioning for GERD during sleep

OT/PT/SLP

"Equipment Guy"

- Postural Equipment for PO intake
- Work with the team PT/OT

Any other referrals?

- Sometimes…
  - Developmental Pediatrician (Why?)
  - Early Intervention System (Why?)
  - Endocrinologist (Why?)
  - Cardiologist (Why?)
  - Infectious Disease Specialist (Why?)
  - Neurologist (Why?)
  - Genetics (Why?)
  - Audiologist (Why?)
  - Another SLP (Why?)

- Do you have anyone that you* refer to that I have not included?

©Food Age™

- Multifactorial Age that results in their current eating ability…meet them HERE
  - Chronological Age
  - Adjusted Age
  - Time Spent with FT
  - Amount of time spent PO
    - …*tada* =© ***Food Age™***

Final Thought Before Treatment

Functional Feeding Strategies

Tips for your tools

- First thought…are your tools ***SES friendly***?
- Not all our families can afford high ticket items…

so use what is available in their

Natural Environment!

Tips for your tools?

- Why use Natural Environment tools?

Because…

- IDEA Part C says…
- DEC says…
- ASHA says…

IDEA Part C

- **Early Intervention Services in Natural Environments Code 303.126**
  - Each system must include policies and procedures to ensure, consistent with other provisions in the part, that early interventions services for infants and toddlers with disabilities are provided
    - A. To the maximum extent appropriate, in natural environments; and
    - B. In settings other than the natural environment that are most appropriate, as determined by the parent and the IFSP team, only when early intervention services cannot be achieved satisfactorily in a natural environment
- **Natural Environments Code 303.26**
  - "settings that are natural or typical for a same-aged infant or toddler without a disability, may include the home or community settings, and must be consistent with the provisions of code 303.126 (Early Intervention services in natural environments).

What does DEC Say?

- **8 Guiding Principles: Leaders, Assessment, Environment, Family, Instruction, Interaction, Teaming and Collaboration, Transition**
  - **E1**: Practitioners provide services and supports in natural and inclusive environments during daily routines and activities to promote the child's access to and participation in learning environments
  - **F1**: Practitioners build trusting and respectful partnerships with the family through interactions that are sensitive and responsive to cultural, linguistic, and socio-economic diversity
  - **F6**: Practitioners engage the family in opportunities that support and strengthen parenting knowledge and skills and parenting competence and confidence in ways that are flexible, individualized, and tailored to the family's preferences
  - **INS5**: Practitioners embed instruction within and across routines, activities, and environments to provide contextually relevant learning opportunities
  - **INT3**: Practitioners promote the child's communication development by observing, interpreting, responding contingently, an providing natural consequences for the child's verbal and non-verbal communication and by using language to label and expand on the child's requests, needs, preferences, or interests

ASHA continued

- **Position Statement: Roles and Responsibilities of Speech-Language Pathologists in Early Intervention**
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Ponder This…

- So, if we are to use the patient's natural environment…
- And respect the patient's culture and background…
- Should the SLP provide food/drink for PO trials?*
  - Exception being inpatient stay

https://www.flickr.com/photos/potentialpast/5582667252

Postural Supports

Postural Supports

Timing is KEY

Want to reconnect the

Brain-Mouth-Gut?

Then Let's Connect the

Brain-Mouth-Gut!!

Teach their ***Mouth*** to eat, while their ***Brain*** and ***Gut*** are

EATING

Preparatory Phase Cues

- Give the Play-by-Play
- Pick **ONE** verbal cue that is family first language
  "Eat, Eat, Eat"
- ***Critical*** for Cortical Vision Impairment

Medicine Pacifier

Medicine Pacifier

"Hercules"

6/9/2016

7 months old

Infant Techniques

Pacing

- Transition Sucking
  - 6-10 suck/swallow/respiration with ***disorganized*** breathing during pause/burst
- Immature Sucking
  - Less than 30 suck/swallow/respiration per burst…with swallow and respiration during that burst
- Mature Sucking
  - Up to 30 suck/swallow/respiration at a 1:1 rate

Chin & Cheek Support

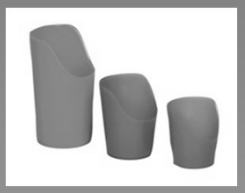
- Lateral Cheek Support
  - To stabilize cheeks and produce tighter labial seal
  - Increase alertness for feeding
- Mandible Support
  - May help establish a more efficient rhythm

(Hwang, Yea-Shwu, et al, 2010)
(Law-Morstatt, L., et al 2003)

Bottle Suggestions

Hard Nosed Sippy Cups

Cup Variations



Know your Taste Buds!

- **Change the Temperature**
  - Drinks
  - Foods
- **Know your Spice Rack**
  - Sweet
  - Salt
  - Sour
  - Bitter
  - Umami

Roach, M. (2013).
Running, C.A. (2016).

Case Studies

Case #1 "Hercules"

"Hercules"

- Born at 31.2 weeks
- Cleft of his hard/soft palate
- c/o not "latching"
- G-Tube placed
- Poor communication between ALL disciplines involved
- Transferred to different MD practice with "Special Needs Coordinator"
- Then the magic happened…

Now…

Case Study #2 "Ladybug"

- Born at 37 weeks via c-section at a specialty hospital in NE
- Intrauterine diagnosis of Esophageal Atresia
- NUMEROUS Surgeries
- G-Tube
- In and Out and In as treating SLP
- Importance of referrals
- Importance of thinking "outside the box"

"Ladybug"

Behold…
The Power of The Sauce!

Still Curious?

This was just a brief overview…Do you have additional questions?

I would recommend the following resources…

*"Everything from Bottles and Breathing to Healthy Speech Development: Nobody Ever Told me or my Mother That!" by Diane Bahr, MS CCC-SLP

*Super Duper Handy Handouts "Oral Motor Developmental Milestones" by Megan-Lynette Richmond, MS CCC-SLP

*"Feeding Infants & Toddlers: Strategies for Safe, Stress-free Mealtimes" by Jessica McCarthy, MS CCC-SLP

ASHA's SIG 13

*ASHA's Practice Portal!!!

*ASHA's IPP Grant Videos

Questions

Thank You!

HeartWood Speech Therapy, LLC

www.heartwoodspeechtherapy.com

References

- See Attachments