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Advanced Topics for the Evaluation and Treatment of Torticollis

Presented by:
Lisa J Roehl, PT, DPT
Board-Certified Clinical Specialist
in Pediatric Physical Therapy

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About Me

- Physical Therapist with 10 years of experience within pediatrics, focus on neurological patient populations and infants.
- Trained in TheraSuit® and TheraSuit Method®, with provision of an intensive therapy model.
- Board-Certified Specialist in Pediatric Physical Therapy in 2019.
- Advanced Therapy Solutions, Kids, Greenville, SC

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Learning Outcomes

After this course, participants will be able to:

- Identify at least two differential standardized testing and observational measures for the evaluation of a child (0-18 months old) with torticollis.
- Identify at least three signs of asymmetrical preference within early motor development for a child in supine, prone, and sitting.
- Identify at least two signs of torticollis and the effect on early vision development, upper extremity control, and preference, and reciprocal movement development.
- Identify at least three advanced treatment strategies for the progression of symmetry in early gross and fine motor development specifically for vision, upper extremity control, crawling, pulling to stand and ambulation.
- Screen, evaluate and implement frontline treatment strategies for the child with torticollis ranging from 0-3, 3-9, 9-16 months old, recognizing the influence of torticollis beyond cervical range of motion impairments.

CONTINUED

Key factors of Torticollis and postural presentation

Posture of the head and neck from unilateral shortening of the sternocleidomastoid (SCM) causing the head to tilt in one direction and rotate in the opposing direction

Named for the side of the involved SCM (named for the side of the tilt)

Involvement into the shoulders, trunk, pelvis and hips

Q1

Causes & contributors to torticollis

- Intrauterine positioning
- Multiple birth pregnancies
- Breech presentation
- Trauma during labor and delivery

Q5

CONTINUED

Torticollis effects on postural presentation

- First line:
  - Head tilt to the right
  - Mild left cervical rotation
- Second line:
  - Asymmetrical jaw line
  - Ear flare on right side
  - Right shoulder elevation
  - Right shoulder/trunk retraction
  - Right trunk lateral flexion > Left
  - Right hip flexed > Left
  - Right hip external rotated

CONTINUED

Standardized testing and Objective Measurements

- NOT an exhaustive list
- Email other recommendations to contribute to a resource list
- 2013 Section on Pediatrics of the American Physical Therapy Association created an evidence-based clinical practice guideline.
- Updated in 2018, reviewed every 5 years.
- Informs clinicians and families as to whom to **monitor, treat, and/or refer and when and what to treat.**
- 17 action statements
- For infants born preterm, recommended to documenting both chronological and corrected ages
  - Use the corrected age for developmental testing, assigning the severity classification, and designing the plan of care

CONTINUED

Congenital Muscular Torticollis Severity Classification System

- **Who:** Infants from 0-12+ months with passive cervical rotation range of motion difference
- **Purpose:** To grade the level of severity of the range of motion deficits based on the infant's age at the physical therapy evaluation
- 3 factors to consider in severity
  - Age, Range of Motion and Presence of SCM mass
- **Implementation means:** Objective visual assessment
- **Tools:** Goniometer*
- **Time to complete:** 0-15 minutes*

Grade Severity	Definition
Grade 1 – Early Mild	Infants between 0-6 months of age with only postural preference or a difference between sides in passive cervical rotation of less than 15°
Grade 2 – Early Moderate	Infants between 0-6 months of age with a difference between sides in passive cervical rotation of 15°-30°
Grade 3 – Early Severe	Infants between 0-6 months of age with a difference between sides in passive cervical rotation of more than 30° **or an SCM mass.**
Grade 4 – Later Mild	Infants between 7-9 months of age with only postural preference or a difference between sides in passive cervical rotation of less than 15°
Grade 5 – Later Moderate	Infants between 10-12 months of age with only postural preference or a difference between sides in passive cervical rotation of less than 15°

Q7

Grade Severity	Definition
Grade 6 – Later Severe	Infants between 7-9 months of age with a difference between sides in passive cervical rotation of more than 15° or between 10-12 months of age with a difference of 15° to 30°
Grade 7 – Later Extreme	Infants between 7-12 months **with an SCM mass** or between 10-12 months of age with a difference between sides in passive cervical rotation of more than 30°
Grade 8 – Very Late	Infants and children older than 12 months of age with any asymmetry, including postural preference, any difference between sides in passive cervical rotation, or an SCM mass.

Key factors to consider with the Congenital Muscular Torticollis Severity Classification System

- 3 factors to consider in severity
- Effect on examination and discharge practices
  - Less emphasis or input on intervention
- Passive range of motion measurement

Muscle Function Measure

- **Who:** Infants age 0-10 months
- **Purpose:** To assess potential neck muscle imbalance in children with CMT
- **Implementation means:** Objective visual assessment
  - 0-4 point assessment
- **Tools:** Visual scale only
- **Time to complete:** 0-15 minutes

Reference Values for Range of Motion and Muscle Function of the Neck in Infants by: Ohman, Anna Maria PT, MSc and Beckung, Eva R.E. PT, PhD, Pediatric Physical Therapy Journal

- Muscle function is estimated by holding the infant horizontally using the lateral head righting reaction.
- Norms for Muscle Function:
  - 2 months = 0-2
  - 4 months= 1-4
  - 6 months= 2-4
  - 10 months 3-4
- Grading is estimated in relation to the horizontal line
  - 0=below
  - 1=on the line
  - 2=slightly over
  - 3=high over
  - 4=very high over

Q10

Alberta Infant Motor Scale

- Who: Infants age 0-18 months
- Purpose: To assess child's sequential development of motor milestones from birth to independent walking; norm-referenced
- Implementation means: Objective visual assessment
  - Circle positions in Prone, Supine, Sitting and Standing
- Tools: None required
- Time to complete: Untimed, no minimum or maximum trials
- Shows gross motor presentation, DOES NOT give credit or attention to asymmetry

Q8

Peabody Developmental Motor Scale-2

- Who: Infants birth to 5 years old
- Purpose: To measure gross and fine motor developmental status; norm-referenced
- Implementation means: Objective visual assessment
  - 0, 1, 2 scoring specific positions and requirements
- Tools: Various tools standardized to test
- Time to complete: 45-60 minutes
- Shows gross motor presentation, DOES NOT give credit or attention to asymmetry

Bayley Scale of Infant and Toddler Development

- Who: Infants age 16 days to 42 months
- Purpose: To assess 5 distinct scales of development for the child
  - Cognitive, Language, Motor, Social-Emotional and Adaptive Behavior
- Implementation means: Objective visual assessment
  - 0,1 score
- Tools: Standardized kit
- Time to complete: 30 – 70 minutes
- Shows gross motor presentation, DOES NOT give credit or attention to asymmetry

Torticollis presentation affecting early infant motor development

- Asymmetrical positioning
- Loss of “chaos”
- Predictability
- Persistence of asymmetrical positioning affects the whole body and emerging early development

Supine

- Persistent head rotation and tilt
- Typically seen a unilateral chin tuck, scapular protraction and elevation
- Persistent/strong ATNR

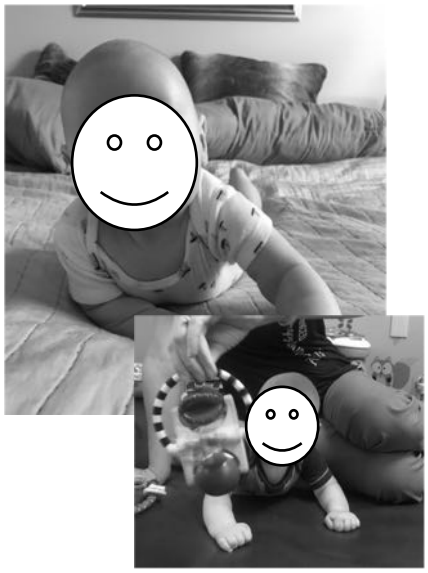
Supine Key Motor Milestones

- 1-2 months:
  - Asymmetrical UE movement patterns
  - Poor physiological flexion
- 3-5 months:
  - Poor midline orientation
  - Strong ATNR
- 4-6 months:
  - Poor UE cross midline for rolling onset
  - Unilateral hand reach for feet
- 6+ months
  - Poor core flexion forward with asymmetrical ascent

Q9

Prone

- Persistent head rotation and tilt
- Same rotation and tilt, affects movement differently
- Against gravity movement pattern
- Influential point of vision distortion



- Prone: Inability to hold head at midline
  - Unilateral attention and coordination for advancing mobility

Prone Key Milestones

- 1-2 months:
  - Asymmetrical preference or poor tolerance of physiological flexion
- 3-5 months:
  - Whole poor neutral weightshift
  - Immature chest COM
  - Preference for Landau posturing
- 5-7 months:
  - Unilateral weightshift and UE preference in reaching
  - Preference of UE extension for push off for roll from prone to supine
- 6-8 months:
  - Asymmetrical pivoting
- 7-9 months:
  - May see avoidance of quadruped as a whole or lack of any crawling phase
  - Asymmetrical army crawl
  - Early onset of modified four-point quadruped
- 8-10 months:
  - Preference in UE reaching

Q9

Sitting

- Will laterally flex towards side of tilt
- Residual postural effects into the trunk and UE
- Delayed UE protective reactions
- Poor transitions into and out of sitting
- Influential point for early hand dominance and strength

Sitting Key Motor Milestones

- 1-2 months:
  - Asymmetrical preference with upright posture
- 3-5 months:
  - Head drop over shoulder with rotation in one direction
  - Head drop towards chest with rotation in other direction
  - Asymmetrical UE arm traction in pull to sit
- 4-6 months:
  - Asymmetrical scapular/shoulder position
  - Asymmetrical UE protective reactions
  - Asymmetrical reaching
- 6+ months
  - Poor core flexion forward with asymmetrical posture

CONTINUED

Treatment strategies

- Passive stretches
  - First choice of intervention
- Contraindications:
  - Down Syndrome
  - Ruptured or lax ligaments
  - Shunt
  - Arnold-Chiari malformations
  - Compromised respiratory or circulatory system
  - Infection

Q6

CONTINUED

Treatment strategies

- Focus on midline
- Activation to opposite side of tilt
- Periods of influence during bilateral skill development

Treatment strategies

Closer Look: Crawling

- One of the most complex positioning affected by torticollis
- Lack of symmetry prevents reciprocal movement
- Retained STNR
- Early transition to pull to stand
- Limiting very important milestone for UE/core/LE strengthening

Quadruped

- Shortened UE reach and shortened LE push on side of tilt
- Lengthened reach on side of rotation (opposite of tilt)
- Head drop below horizontal

Q4

Seated mobility

Crawling: Treatment strategies

- Progress pelvic/trunk dissociation
  - Transitions from sit<>prone
  - Head extension
  - Alternating UE reaching for visual objects
  - Crawling OVER obstacles, Tunnels for forced quadruped
  - Modified bear stance
- Promote symmetry
  - Add light weight to preferred limb
  - Manual assist for push-off
  - Crawl over uneven surfaces – force balance reactions

Crawling: Treatment strategies

Crawling:
Residual effects in the older child:

- Residual reflex presentation
  - STNR, ATNR
- Lack of reciprocal whole-body movements
  - Delayed stair climbing, tricycle/bicycle, climbing playground
- Poor bilateral coordination
  - Jumping jacks, contralateral movements

Closer Look: Upright Mobility

Pull to stand, Cruising and Early Ambulation

- Further advancement of early bilateral coordination
- Inability or poor mechanics to isolate LE to assume half kneel or asymmetric LE lead in pull to stand
- Cruising onset to one direction with poor weightshift
- Rotated pelvis in ambulation
  - Poor balance reactions

Closer Look: Upright Mobility

Pull to stand, Cruising and Early Ambulation

Upright Mobility: Treatment strategies

- Progress pelvic/trunk dissociation
- Promote symmetry
  - Half kneel
  - Standing with trunk rotation
  - Straddle stand with UE reaching for unilateral weightshift
  - Tall kneel (with or without UE assist)
  - Standing with neutral pelvis (stand with posterior wall support or stand on narrow block/stool)
- Stepping over small objects
- Half stance
- Slides (supine to sit)

Upright Mobility: Residual effects in the older child:

- Poor gait mechanics
- Poor dynamic/spontaneous balance reactions
- Increased falls beyond age-anticipated
  - "Fall patterns"

Closer Look: Vision

- Lack or delay in eye head dissociation
- Vision drawn to one direction
- Less frequent tracking across whole arc
- Eyes off neutral, horizontal

Prone

- Head drops to side of tilt
- With rotation, watch ear to shoulder
- Same side as tilt, eyes stay in line to horizontal
- Opposite side as tilt, eyes drop below horizontal

Sitting

- Vision drops off horizontal with rotation over shoulder
- Observe rotation to both directions at end range

Supine

- Drawn to one direction
- Less likely to view gaze directly above self

Q3

Vision:
Treatment strategies

- Progress head-eye dissociation
  - Block the body, and focus on eye movement only
  - Engage visually FIRST
  - Track across the whole arc
  - Focus on EACH position – supine, prone, sitting, quadruped, standing.

Vision:
Residual effects in the older child:

- Limited midline focus
- Limited eye head dissociation
  - Poor eye convergence
- Leading eye may become dominant

Closer Look: Hand Dominance

- Persistent/strong ATNR
- Poorly integrated STNR
  - Poor reciprocal progression
- Scapular influence

Supine

- Limited hand to mouth
- First point of hand dominance
- Poor midline progression for hands to mouth, self soothing

Sitting

- Delayed UE protective reactions
- Side of tilt, UE tends to be withdrawn in high guard
- Poor transitions into and out of sitting
- Limited scapular movement, limiting overhead reaching
- Ease of use of opposing hand
  - Influential development point for fine motor development

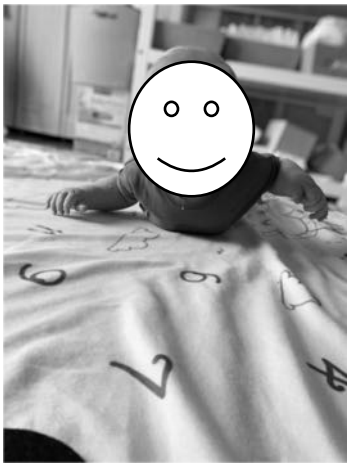
Q2

Prone

- Shortened reach on side of tilt
  - Scapular retraction
  - Shoulder elevation
- Immature patterning of elbow behind shoulder
- Poor shoulder/hand strength due to asymmetrical weightbearing

Hand dominance: Treatment strategies

- Focus on Strength AND Coordination
  - Crossing midline
  - Reciprocal UE movements
  - Against gravity reaching



Hand Dominance: Residual effects in the older child:

- Persistent immature reflexes (more frequent startle, immature reflexes due to delayed or no integration)
- Early onset of hand dominance
- Poor midline coordination
  - Poor hand-eye coordination
- Poor bilateral/reciprocal coordination
- Poor hand grasp/shoulder strength (no crawling, UE weightbearing)

Case Study 0-3 months: Logan

Initial Evaluation age: 1 month, 3 days

- Full term pregnancy
- Frank Breech presentation
  - Noted in last trimester
  - Inability to correct
- Born via c-section
- Immediate presentation of right torticollis

CONTINUED

Alberta Infant Motor Scale [Standardized Test]

Subscale Scores

Measure	Raw Score
Prone	2
Supine	1
Sit	1
Stand	1
Total Raw Score	5
Percentage Total	50th

Notes

Logan participated well in standardized testing. Results may be considered accurate and valid to patient's current level of gross motor performance. He presents in transitions between active, alert and quiet, alert. Easily interacts with PT.

Logan presents with overall gross motor skills within the 50th percentile for his age of 1 month and 23 days. Most limiting for Logan is persistent cervical right lateral flexion. He prefers to visually gaze and rotate to the left, however his lateral tilt is more dominating to his gross motor performance. This posturing prevents Logan from tracking and sustaining visual gaze fully. He will elevate his head in prone, with significant right lateral flexion. He is unable to actively rotate head out of position in gravity eliminated supine. In upright positioning patient keeps head in persistent left rotation to 65-75 degrees. He is max assist for rolling, with limited flexion positioning at this time. He presents with poor physiological flexion in prone, and requires manual assist to calm in position.

This ASYMMETRICAL preference and limited prone tolerance will continue to be monitored and addressed with progression of age-typical gross motor skills.

CONTINUED

- Started OT and PT immediately
  - Mom pediatric OT
- 2x/wk

Name	Notes
Cervical ROM	Facilitated with emphasis on passive range of motion for bilateral lateral flexion and rotation in supported supine and upright sitting. Limited tolerance at initiation, however calms with gentle sensory input. Emphasis on midline assistance after stretch completed. Pt preference to rotate to full left rotation without agitation, mild agitation with supported right rotation. Palpable right SCM tightness.
Prone	Facilitated supported prone over therapy ball with gentle bouncing for calming. Requires mod assist to keep head at midline with head lift to 45 degrees. Preference for right lateral tilt grossly 35 degrees if left unsupported. Manual cues to emphasis more physiological flexion patterning due to Frank breech position in utero and limited flexion tolerance in prone.
Sitting	Facilitated supported upright sitting. Focus on active cervical extension to midline with visual gaze. Pt preference to gaze to the left, however noted more neutral head positioning in rotation today. Provided min to mod assist to promote forward neutral gaze. Pt with heavy focus to sustain for brief periods.

CONTINUED

- Reduced to 1x/wk after 6 months
- Best response to stretching
- Cervical positioning near resolved
- Residual effects
  - Early UE and vision integration
  - All periods of mobility

Case Study 3-9 months: Kaden*

(name changed)

- 6 month old name, referral for torticollis and plagiocephaly
- Twin gestation, born at 34 weeks, NICU stay for 3.5 weeks
- Preference for right gaze

CONTINUED

Subscale Scores

	Raw Score
Prone	7
Supine	4
Sit	7
Stand	3
Total Raw Score	21
Percentage Total	Between the 50th-75th

Notes

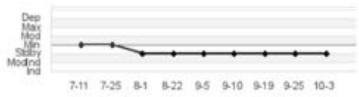
[redacted] participated well in standardized observational testing. He presents in active, alert to agitated state, per mom due to tiredness and teething. He did not transition easily to PT for any direct handling, however was receptive to parental engagement at periods. Results may be considered precise and valid to patient's current level of gross motor performance and used to initiate a plan of care.

[redacted] presents with overall gross motor skills between the 50th to 75th percentile for adjusted age of 5 months and 12 days (chronological age of 6 months and 28 days.) Most limiting for [redacted] is PERSISTENT cervical right rotation with preference to hold at 75-90 degrees. He prefers to visually gaze and sustain head at right rotation. He will rotate out to midline and left rotation, however only to grossly 45 degrees and he does not sustain this position. When placed in prone [redacted] is able to extend his head off the surface, and falls into excessive left lateral flexion and right gaze with head drop below horizontal. This posturing prevents [redacted] from tracking and sustaining visual gaze fully forward or into left rotation. He is limited to actively rotate head out of position in gravity eliminated supine. In upright positioning patient keeps head in preference for right rotation to 75-90 degrees. He is observed to assist in rolling with limited flexion positioning at this time. He is able to sit with scapular retraction and forward head posture. Limited pelvic stability to sustain unsupported at this time.

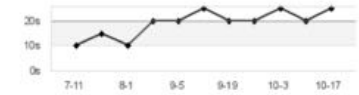
This ASYMMETRICAL preference will be addressed with progression of age-typical gross motor skills.

CONTINUED

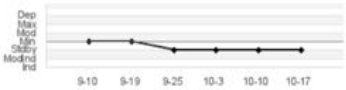
Short-Term Goal: (Started on 06/13/2019)
[redacted] will independently visually track and actively rotate head from full left rotation to full right rotation in supine.



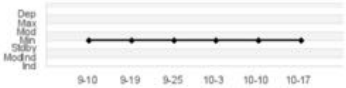
Short-Term Goal: (Started on 06/13/2019)
[redacted] will independently visually attend to object on the left (in supine or supported sit) for >20 seconds without manual assist.



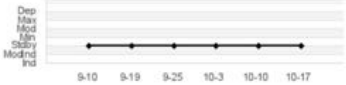
Short-Term Goal: (Started on 09/05/2019)
[redacted] will pull to stand on support surface with left lower extremity lead leg with minA or less.



Short-Term Goal: (Started on 09/05/2019)
[redacted] will demonstrate improved pull to stand on support surface with neutral foot position independently.



Short-Term Goal: (Started on 09/05/2019)
[redacted] will demonstrate improved symmetrical weight-shifting in sitting as evident by neutral pelvic positioning for at least 10 seconds independently.



Case Study 9-16 months: Carsen* (name changed)

Initial Evaluation age: 14 months

- Presents with return to PT with concerns for right hip contracture with right LE hip external rotation.
- Previously seen for left torticollis, at 2 months. Did not continue services at the time due to financial concerns.
- Parent reports previous resolution of torticollis, denies any observable asymmetries.
- Clear orthopedic review, no concerns for boney hip abnormalities.

Subtest

Measure	Raw	Standardized	Comments
Stationary	38	11	Average
Locomotion	86	13	Above Average

Notes

[redacted] participated well in standardized testing. Results may be considered accurate and valid to patient's current level of gross motor performance. He demonstrates Average to Above Average gross motor skill base, although concern is drawn to level of ASYMMETRY PRESENT (with favoring left LE) with compensatory RIGHT LE ABNORMAL POSITIONING in excessive external rotation.

Behavior in Assessment [Physical Findings]

Behavior:
Able to participate in standardized testing
Age appropriate cognition and behavior
Enjoys therapist's attention and interaction
Able to follow simple one step request

Comments

Active young male. Transitions easily between therapist and parent. Dislikes being offset in balance, or placed on different textures (ie does not like feel of crashpad on feet, dislikes therapy ball).

CONTINUED

General Strength [Physical Findings]

Comments
Strength: Asymmetrical preference for left sided control, as noted with left side body lead in ambulation, left LE lead to climb/stairs, and 3-5 degree left cervical tilt observed - especially in periods of agitation/fatigue. Limited right lateral trunk strength as noted by dislike of being offset in balance, especially with lateral leans on theraball or in suspending holding

Range of Motion: Observable right LE external rotation in standing and sitting, approximately 10-15 degrees. Within normal limits with passive range of motion to right hip.

Gross Motor Activities [Physical Findings]

Activity		Notes:
Climbing playground	Impaired	Preference to lead with left LE, reduced to crouched posture if lead with right LE
Running	Impaired	Runs with left body lean, and right LE external rotation in more of a step-to pattern.
Transition to stand	Impaired	Bear stance, or with assumed holding an object in hands, will transition in left half kneel
Balance	Impaired	Dislikes movement on uneven surface. Will sustain normal stance on trampoline, but is hesitant to move or step out of initial base of support. Note right LE will assume neutral position upon reaching in static stance

Comments
Overall good skill base, although ASYMMETRICAL PREFERENCE for LEFT side in all tasks, with concern for right LE compensatory abnormal alignment.

CONTINUED

Short Term: (Started on 06/14/2016)
[ ] will independently ambulate over uneven surface for >5ft without loss of balance or avoidance indicating improved ankle balance mechanics.

Short Term: (Started on 06/14/2016)
[ ] will climb playground ladder with reciprocal or alternating leading LE, supervision only indicating symmetrical LE strength.

Short Term: (Started on 06/14/2016)
[ ] will independently sustain stance on incline for >30 seconds indicating improved dorsiflexion mechanics.

Short Term: (Started on 06/14/2016)
[ ] will independently descend an incline with neutral lower body positioning >75% of the trials indicating improved symmetrical strength and balance.

Short Term: (Started on 06/14/2016)
[ ] will independently jump up with positive ground clearance with bilateral LE take-off and land with control.

Short Term: (Started on 06/14/2016)
[ ] will to step up and down from 6 inch bench, with neutral alternating leading LE, supervision only.

Long Term: (Started on 06/14/2016)
[ ]'s family will be independent and consistent with comprehensive home exercise program.

Short Term: (Started on 06/14/2016)
[ ]'s family will verbalize a good understanding on gross motor and other functional mobility, strengthening, range of motion, physical endurance and gait management activities for inclusion in comprehensive home exercise program.

CONTINUED

Re-Assessment Summary

[redacted] is a 26 month old male evaluated on 6/14/16 upon referral from Dr. Cole with concerns for previous torticollis intervention and consequential right hip contracture with right LE hip external rotation. [redacted] has been seen on a weekly basis. He has improved stability in gait and strength of right leg, but continues to preference left in tasks requiring power.

In attempts to assist with LE alignment, [redacted] was provided with foot orthoses to assist with lower leg alignment. Over the past four months, the orthotics have greatly improved distal alignment, but highlight the persistent tightness and asymmetry in hip. SMOs are now recommended due to calcaneal eversion emerging.

[redacted] continues to have a good gross motor skill base, with continued predominant ASYMMETRICAL PREFERENCE (with favoring left LE) with compensatory RIGHT LE ABNORMAL POSITIONING in mild external rotation. He still has mild residual torticollis symptoms with left body lead in ambulation/running with step-to pattern for climbing and stairs, and mild visual left lateral cervical tilt.

Treatment has focused on symmetrical development and gait abnormality via stretching and functional training. [redacted] now tolerates right hip internal rotation nearly always with side sitting feet to left for right hip IR. He drags right foot leg less, but continues to have external rotation present especially when fatigued or performing novel skill. Slight lean over left> right. He continues to be good candidate for PT to address remaining and additional age appropriate goals.

Discharge Summary

[redacted] is a 29 month old male evaluated on 6/14/16 upon referral from Dr. Cole with concerns for previous torticollis intervention and consequential right hip contracture with right LE hip external rotation. [redacted] has been seen on a weekly basis. He has improved stability in gait and strength of right leg with very subtle preference for left LE.

To assist with LE alignment, [redacted] was provided with SMOs. Over the past two months, the orthotics have greatly improved distal alignment.

[redacted] has average to above average scores on PDMS-2.

Treatment focused on symmetrical development and gait abnormality via stretching and functional training. [redacted] tolerates right hip internal rotation always with side sitting feet to left for right hip IR. He is able to use right or left leg in functional tasks. Slight windswept effect to right still, but range of motion is normal and functional mobility symmetrical.

CONTINUED

Case Study 16+ months: Daniel* (name changed)

Initial Evaluation age: 17 months

- Seen by Speech for feeding concerns
- History of severe plagiocephaly and cranial helmet
  - PT intervention about 4 months old
- Referred for scoliosis by referral from the SLP
- Parental concerns for "clumsy" behavior
  - Increased bruising and injury to left orbit after falls
- Mom reports early good milestone achievement, with crawling around 9 months, and walking around 10-11 months

CONTINUED

Measure	Raw	Standardized	Age Equivalent	Percentile	Comments
Stationary	38	10	18 months	50%	AVERAGE
Locomotion	88	10	17 months	50%	AVERAGE

Notes

participated fairly well in standardized testing today. He is easily distracted and very playful, and requires increased manual and verbal cues to follow direct commands. Results may be considered accurate and valid to patient's current level of gross motor performance.

All tasks are completed with MILD to MODERATE RIGHT cervical rotation, and LEFT sided body lead.

General Strength [Physical Findings]

Comments
Strength: Predominant LEFT sided body lead in ambulation with MILD RIGHT rotation preference. Will alternate LE in climbing. MILD RIGHT convexity of spinal rounding noted, however will reduce in ambulation, climbing and crawling. Persistent abdominal distension.

Range of Motion: Full passive to bilateral directions in cervical rotation and lateral trunk/cervical flexion. Preference to keep head rotated to mild right rotation at grossly 35-45 degrees from midline. Will actively rotate to full range with tactile cues to prevent early shoulder hike in left rotation.

Case Study: *Daniel

- EOW
- Attended 8 sessions
- Referred to vision therapy

Name	Notes
cervical AROM	Emphasis on bilateral rotation to full range during all interaction. Emphasis with visual cues to track from midline to full left range. Pt preference for mild right rotation at 35 degrees with eye gaze to "neutral" forward.
core strengthening activities	Facilitated for progression of trunk/pelvic dissociation and core control.
gait training	Facilitated with cues to keep body oriented neutral. Further advanced with ascend/descend incline, small/moderate surface level changes and stair/ladder climbing.
LE Strengthening	Facilitated with active climbing stairs/ladder, etc with emphasis on alternating leading LE. Pt will reciprocate by self today on small ladder. Further promoted with active climbing slide.

Key Components to consider during plan of care

- Parent education
- Sensory management/State control
  - For therapist AND parent
- Minimizing residual effects
  - Preventing the "outgrow" it idea
- Extensive, regularly updated HEP
  - Provide handouts
  - Allow parent to demonstrate
  - Allow videos during treatment
- Involve Speech and OT
  - Speech – review for tongue ties, feeding consult
  - OT – fine motor milestones, core/UE strength, reflexes

Important things to keep in mind

- Torticollis and plagiocephaly will not resolve without intervention
  - Parent and/or therapist
- Effects on postural and facial presentations
- Affects early fine and gross motor development
- Passive stretching is first line of intervention
- Residual effects may occur
  - Never skip crawling!
  - Encourage midline
- Always screen for history of torticollis if any asymmetry or coordination deficits present later in development

Frequent asked questions from parents

- Do I do anything wrong to cause my child's torticollis or plagiocephaly?
  - No, parents did not cause the torticollis, but habits can contribute.
- How long will this last? Will they outgrow it?
  - It may last throughout childhood, but now is the time to address as development progresses.
- How long will my child need therapy?
  - On and off for first year of life, or until progressing skills are symmetrical.
- Why does my baby need OT if they have PT? PT if they have OT?
  - Both can help. Coming from different developmental perspectives.

References

- As separate pdf supplied with course materials.
- Muscle Function Scale
- Physical Therapy Management of Congenital Muscular Torticollis 2018

Questions?

- Email: lisaroehl@advancedtherapysolutions.com