

Torticollis

Different Reasons,
Different Responses

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Goals for today

- Learn about the general types of causes of torticollis, and some specific examples of each cause
- Learn about specific strategies for treatment with the type of torticollis.
- During small group discussions, share strategies for sharing information about ocular torticollis and its causes with EI teams.
- Discuss IFSP collaboration options to support family priorities when infant/toddler issues are complicated

Clarifying Terms

- AHP – Abnormal Head Position
- Eccentric viewing
- Torticollis

Clarifying Terms

- AHP – Abnormal Head Posture/Position occurs when the head is deviated out of the normal primary straight head position.

<https://www.aapos.org/terms/conditions/8>

Clarifying Terms

- Eccentric viewing - ...is a method by which the person looks slightly away from the subject in order to view it peripherally with another area of the visual field.

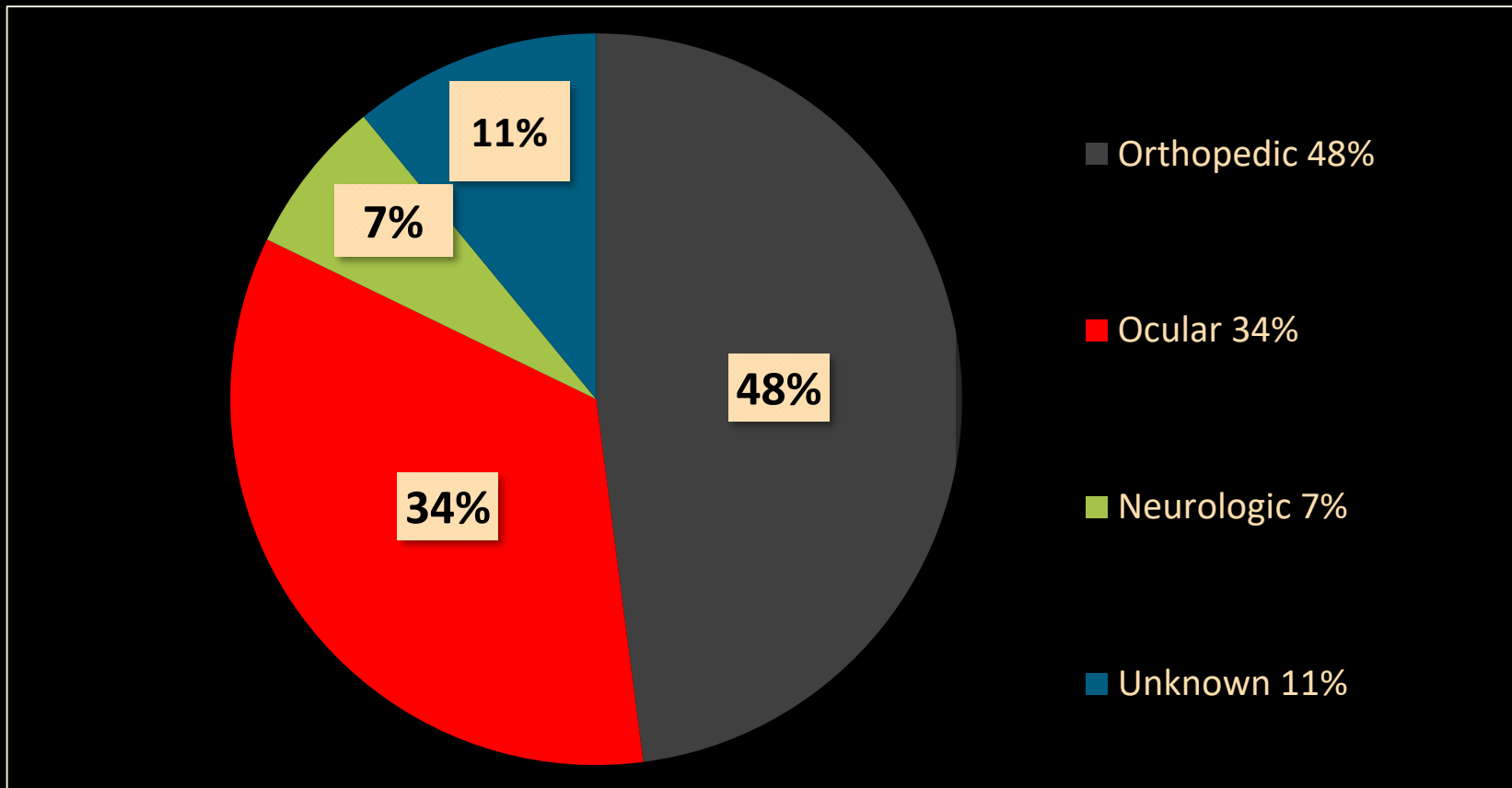
<https://www.enhancedvision.com/educational/eccentric-viewing.html>

Clarifying Terms

- Torticollis - a condition in which the neck muscles cause the head to turn or rotate to the side.

<https://medlineplus.gov/ency/article/000749.htm>

Causes of AHP in children



American Journal of Ophthalmology. Volume 140,
Issue 1, July 2005, Pages 65.e1-65

Torticollis Causes

1/5 children have a non-muscular cause

(Karen Karmel, PT, PCS, LMT from TORTICOLLIS;
Differential Diagnosis, Assessment and
Treatment, Surgical Management and Bracing)

Determining cause

“When the cause of an abnormal head posture is not obvious, a multi-disciplinary approach including ophthalmologic, neurologic, and orthopedic specialists may be helpful.”

American Journal of Ophthalmology

Volume 140, Issue 1, July 2005, Pages 65.e1-65.e6

Determining cause

Interdisciplinary collaboration between ophthalmologist, pediatrician, pediatric surgeon, ENT specialist and neurologist is mandatory in establishing the etiology of AHP.

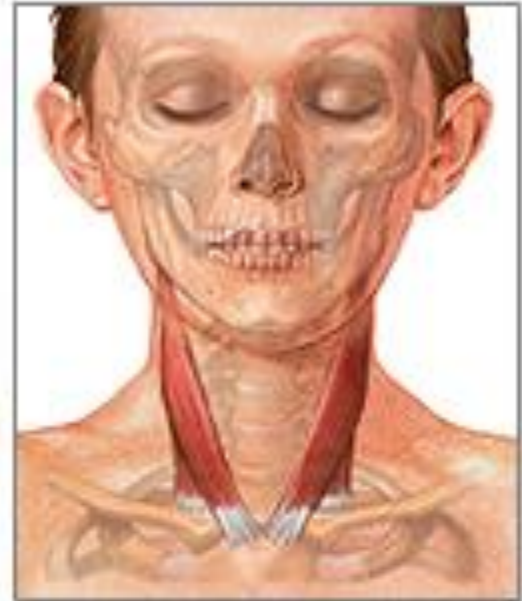
[Oftalmologia](#). 2011;55(1):10-26. **Understanding ocular torticollis in children.**

Torticollis

- Torticollis Meaning: Twisted neck; origin of name: Tortus (twisted); Collum (Neck)
- Neck is tilted to one side; decreased active neck rotation to same side

What muscles are impacted in Torticollis?

- Trapezius muscle
- Sternocleidomastoid muscle
- The SCM muscle is shortened in Torticollis
- Action of Sternocleidomastoid (SCM):
- **Unilaterally: contralateral cervical rotation, ipsilateral cervical flexion**
- **Bilaterally: cervical flexion, elevation of sternum and assists in forced inhalation.**



Sternocleidomastoid muscle stretches from the sternum to the skull behind the ear

"Wry neck"

Possible Causes of Torticollis:

- Positional
- Benign Paroxysmal Torticollis
- Sandifer Syndrome
- Neurological
- Trauma
- Hearing
- Reflux (Positional)
- Inflammatory Conditions, such as pharyngitis
- Symptomatic Hiatal Hernias
- Anomaly of the Cervical Spine
- Ocular
- Klippel-Feil syndrome

Congenital Torticollis

Congenital Torticollis:

- Congenital Muscular Torticollis (CMT):
Unilateral fibrosis of the Sternocleidomastoid Muscle
- Cause: unknown; many possible theories including: direct injury, ischemic injury, rupture of the muscle and infectious myotitis, neurogenic injury, intrauterine positioning

Positional Caused Torticollis:

Intrauterine malpositioning or constraint

Only holding or turning head to one side

positioning preference (sidelying, on shoulder)

position of crib

breastfeeding/feeding

ventilator

[Pediatr Rev.](#) 2014 Feb;35(2):79-87; quiz 87. doi: 10.1542/pir.35-2-79.

<https://www.ncbi.nlm.nih.gov/pubmed/24488831>

Positional Caused Torticollis:

May lead to

- Weakened truncal muscles
- Fine motor delays
- Visual perception
- Lack of head control
- Positional plagiocephaly
- Gross motor delays
- Head tilt

[Pediatr Rev.](#) 2014 Feb;35(2):79-87; quiz 87. doi: 10.1542/pir.35-2-79.

<https://www.ncbi.nlm.nih.gov/pubmed/24488831>

Treatment of torticollis

- Referral to pediatrician and/or orthopedic surgeon
- Physical Therapy
- Occupational Therapy
- Electrical stimulation
- Stretching/
- Strengthening
- Positioning
- Midline activities
- Foam collar
- TOT collar

Possible negative outcomes if torticollis is not treated:

- Muscle contractures
- Delays in development
- Plagiocephaly
- Craniofacial Asymmetry
- Impact on visual gaze, tracking, etc.
- Decreased social interaction
- Decreased postural control
- Decreased Sensory Body Image

Possible negative outcomes if torticollis is not treated:

- Asymmetrical muscle strength
- Asymmetrical movement patterns
- Decreased coordination; balance
- Poor Orientation to Midline
- Delayed/Impaired protective reactions
- Scoliosis
- Shortening of Shoulder and Rib Cage Muscles
- Need For Surgical Intervention

TOT Collar



The TOT Collar use is added to the conservative treatment of infants with congenital muscular torticollis. The TOT Collar is designed to provide a noxious stimulus to the lateral aspect of the skull. The user moves away from this stimulus towards a new central corrected position.

Another collar drawing



More Causes of Torticollis

- Trauma
- Hearing Impairment
- Inflammatory Conditions, such as pharyngitis
- Symptomatic Hiatal Hernias
- Anomaly of the Cervical Spine

Ocular Torticollis Abnormal Head Posture (AHP)

The incidence of ocular abnormal head posture (AHP) or torticollis is 5.6% in ophthalmological practice and 3.19% in pediatric ophthalmological practice.

Oftalmologia. 2011;55(1):10-26. **Understanding ocular torticollis in children**

AHP, Torticollis, Eccentric Viewing... or ALL OF THE ABOVE?

The abnormal head posture is adopted to improve visual acuity, maintain binocular single vision, center residual visual field with the body or for cosmetic reasons. Face turn is the most frequent abnormal head posture in pediatric ophthalmology.

Ocular Torticollis

Abnormal Head Posture (AHP)

Common diseases causing face turn are

- Duane syndrome
- Congenital fibrosis of extraocular muscles
- Nystagmus
- Refractive errors
- Visual field defects

Ocular Torticollis

Abnormal Head Posture (AHP)

Most frequent ocular causes of head tilt in children are

- Congenital nystagmus
- Superior oblique paresis
- Dissociated vertical deviation
- Brown syndrome, Refractive errors

Ocular Torticollis

Abnormal Head Posture (AHP)

Most common causes of chin-up or chin-down abnormal head postures are

- "A" and "V"-pattern strabismus
- Palpebral ptosis
- Nystagmus
- Refractive errors.

Treatment of Duane Syndrome

May involve surgery to

- Eliminate/reduce head turn
- Eliminate/reduce significant misalignment of the eyes
- reduce severe retraction (when the eyeball pulls into the socket as the eye moves toward the nose)
- improve upshoots and downshoots (when the eye deviates upward or downward with certain eye movements).

The success rate in eliminating an AHP is estimated at 79-100%.

Duane syndrome

<https://rarediseases.info.nih.gov/diseases/6288/disease>

Treatment of Duane Syndrome

Non-surgical treatment options include:

- Preferential seating
- Special rear-view mirrors during driving
- prisms placed on glasses to correct for the face turn (not common)
- vision therapy to treat secondary convergence insufficiency

Duane syndrome

<https://rarediseases.info.nih.gov/diseases/6288/disease>

When it gets tricky... Klippel-Feil Syndrome

- Scoliosis (curvature of the spine)
- Cervical dystonia (painful, involuntary tensing of the neck muscles)
- Hearing deficits
- Facial asymmetry, or other abnormalities of the head/face
- Torticollis
- Central nervous system abnormalities (including Chiari malformation, spina bifida, or syringomyelia), and/or neurological symptoms
- Duane syndrome or other eye (ocular) abnormalities

<https://rarediseases.info.nih.gov/diseases/10280/klippel-feil-syndrome>

How do teams decide what to do?

CASE STUDY

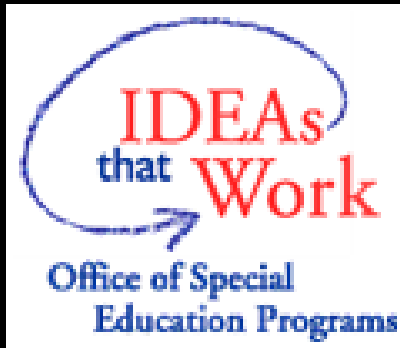
IN GENERAL, let's discuss what factors you would want to bring to the table in a conversation about PRIORITIES for this child in the case study? Not specific facts about the child, but **PRINCIPLES** to keep in mind when in discussing complex issues?

“What are mom's current concerns? Future concerns? How might that impact priorities?”

Thank you!
Questions?

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Evaluations



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