

Pediatric Torticollis with Allergies and Head Injury

Nancy Martin-Molina, DC, QME, MBA, CCSP

Case History

E.G. was a one-year-old female African-American who has had torticollis for two months. She resides with her mother, a single parent, and with her eight-year-old sister. Her mother's full-time work necessitates frequent daycare use. The mother brought her daughter to the chiropractor after evaluation by the medical generalist and pediatrician failed to resolve her "tilted neck condition." The mother explained that E.G. was thrown overhead, up and into the air, which startled her and consequently caused the torticollis. Mother stated that E.G. had been thrown repeatedly into the air, and cumulative trauma of a decelerating nature was described. The next day the patient's neck was noted to be tilted upon breast-feeding.

The patient's past medical history was remarkable for preceding symptoms such as "allergic rhinitis" and slight cough. Exposure to high winds, dust, molds in home and pollens caused her respiratory complaints to increase. The mother was an existing clinic patient recently accepted for care. On the mother's "report of findings" visit, she brought her youngest daughter in for an examination. The mother disclosed that she was concerned about her daughter's overall general health because of both children's upper respiratory conditions and repeated antibiotic use.

On physical examination, E.G. weighed 10 kg, and was well-developed and well-nourished. She appeared alert, afebrile and in no apparent distress when sitting on her mother's lap. Her general appearance revealed a laterocollis and mild degree of agitation, with forceful crying upon examination, though demonstrating a normal mental status and intact airway. Slight nasal flaring was noted on respiratory rate secondary to nasal congestion/rhinorrhea. No airway stridor, drooling or "croupy" cough quality was observed.

Three basic questions to ask the caretaker in the evaluation of a child with nasal congestion revolve around problems with respiration-stridor, retractions, and phonation. Are there changes in cough quality, voice changes, or laryngeal competence regarding cough and aspiration with feeding? E.G.'s mother denied any of these associated symptoms.

Chiropractic assessment yielded joint fixation of the upper cervical vertebrae. Asymmetry in the position of the sternocleidomastoid muscles with slight soft tissue swelling was noted. Pinna tugging did not illicit any overt purposeful withdrawal away from the examiner, indicating the unlikelihood of any active ear infection.

Radiographic imaging studies were not performed to evaluate her spine.

Discussion

This case illustrates the typical clinical findings of torticollis. Although the patient did have upper cervical rotary subluxation, other potential difficulties were related to the effects of "shaken baby syndrome" and a tertiary allergic disorder that led to the patient's upper respiratory tract disorder.

Torticollis or *cervical dystonia* is the most common dystonia. Cervical dystonia affects the muscles of the neck, causing the head to turn or pull to the side. Cervical dystonia may also pull the neck forward (anterocollis), backward (retrocollis), or tilt the head toward the shoulder (laterocollis). The muscle contractions may be tonic (causing a sustained posture of the head), clonic (causing jerking movements of the head), or a mixture of both.

There is often a gradual worsening of symptoms over the first two to five years after onset, followed by a "plateau" or stabilization of the condition. Approximately 15-20 percent of those with cervical dystonia may experience a spontaneous remission. This usually occurs within the first five years after onset and may be temporary or long-term.

Allopathic traditional treatment consists of a variety of pharmacological medications, including nonsteroidal anti-inflammatory drugs.

The chiropractic definition of *torticollis* (or "wry neck") is simply a rotational deformity of the upper cervical spine (neck) accompanied by contractions of the sternocleidomastoid muscle. Causes may be congenital, such as a fibrous tumor, or they may be acquired/traumatic, resulting from trivial or frank trauma. Torticollis may also be caused by bacterial or viral infection.

The potential for an infectious urgent as the cause of torticollis is important to access in the pediatric patient. Cough quality assessment in pediatrics as a possible site of airway obstruction is important to observe. Croupy, high-pitched cough demonstrates subglottic narrowing, and croupy low-pitched cough demonstrates tracheal narrowing. Airway obstructions beside the most obvious (foreign objects) that affect this age group that experiences upper respiratory tract disorders, would be of the *infectious* category (such as supraglottitis and laryngotracheobronchitis). The latter condition is typically benign, but may on occasion follow an upper respiratory infection for 3-4 days followed by inspiratory stridor. Presentation is a mild fever and croupy or harsh cough.

Listening to the pediatric patient helps inform the chiropractic clinician of the location of the difficulty. The airway, if compromised, has a characteristic sound-stridor. Inspiratory stridor suggests an upper respiratory tract problem; epiglottic, and subglottic edema, such as croup, produce inspiratory stridor. (Incidentally, the pediatrician had recently placed the 8-year-old sibling on Dimetapp Allergy for allergic rhinitis, 2 mg every 4-6 hours.) *Recurrent croup* occurs more often in families with a positive history of allergy. Symptoms and signs relating to airway obstruction in the pediatric patient include: foremost stridor; heart (apical) rates above 160/minute (denoting severe obstruction); and drooling, which occurs due to an inability to swallow, as a result of airway swelling/edema and retractions (suprasternal, substernal and intercostal).

The pediatric anatomy and physiology of respiration make a child more susceptible to potential compromise of function. Anatomically, children are nasal breathers. Even in a resting state, they work much harder than adults to breathe. Additionally, children have large tongues that fit into relatively small oral cavities, with retruded mandibles. The adult larynx sits at the fifth cervical vertebrae; in an infant, it may sit at the third cervical vertebral body, and with swallowing, elevates even higher. The subglottic region immediately beneath the vocal cords is much smaller in a child. Any compromise of the subglottic region can have a profound impact on the infant's airway, while a similar degree of swelling in an adult has particularly no effect on respiration.

In the early 1970s, Caffey described the "shaken baby" syndrome, which identified infants with no external signs of injury, but on further examination exhibited altered levels of consciousness, retinal hemorrhage and either subdural or subarachnoid hematomas. The postulated mechanism of injury is not actually the shaking of the child, but rather induction of a significant *decelerating* force.

Following head injury in the childhood and adolescent years, the most significant deficits continue to be in the areas of attention and concentration; difficulties with selective and sustained attention, perseverance, self-monitoring, vigilance, and concentration. Problems with short and long-term verbal and visual memory, higher integrative thought planning, problem-solving, strategy formation, and flexibility of thought, have also been documented. Young children, typically under the age of 10 years, can manifest symptoms characteristic of attention deficit disorder (ADD) without the hyperactive component, whereas preadolescents and adolescents may experience depression, anxiety, irritability, volatility, etc.

Results

After the initial visit the torticollis resolved within 48 hours. The family was educated; the torticollis condition was explained and provided with information so that future biomechanical lesions of the spine did not go left untreated. Follow-up care of the patient was performed, and outlined preventative procedures were released. The eight-year-old sibling began receiving chiropractic treatment the subsequent day. Presently, the children are happy, well-adjusted and less prone to upper respiratory tract conditions. The torticollis has not returned.

References

1. Gaultieri, CT. The problem of mild head injury. *Neuropsychiatry, Neuropsychology, & Behavioral Neurology* 1995; 8:2, pp. 127.
2. Beer, SR. Cognitive effects of mild head injury in children and adolescents. *Neuropsychology Review* 1992; 3:2, p. 281.
3. Wilkins, EW. Acute upper airway obstruction in the child. *Emergency Medicine* 1991; 23:591-601.

Nancy Molina, DC
San Juan Capistrano, California
nmolina@fea.net

JULY 2000