Congenital Muscular Torticollis

By Warren Hammer, MS, DC, DABCO

Congenital muscular torticollis usually presents during infancy with fibrous contracture of a unilateral sternocleidomastoid (SCM) muscle, causing the child’s head to tilt to the tightened side. Limited neck motion or a palpable tumor within the muscle often are present. During this period, symptoms may resolve spontaneously and/or reappear at any time. An SCM tumor of infancy is a lateral neck mass affecting children between the ages of 2-4 weeks. It may or may not be associated with congenital muscular torticollis. Most of the time, it resolves spontaneously in four to eight months. Pseudotumor and congenital muscular torticollis probably represent different manifestations of SCM muscle fibrosis.

Congenital muscular torticollis is not considered a static and fixed deformity, but has far-reaching effects on the craniofacial growth and development of the spine. The most common treatment is stretching, with a positive outcome of 90 percent. Surgical treatment is indicated when a patient has undergone at least six months of controlled manual stretching and has residual head tilt; deficits of passive rotation; lateral bending of the neck less than 15 degrees; and a tight muscular band or tumor. Surgery usually is not considered for those under one year of age.
A consistent relationship between congenital muscular torticollis and dysplasia of the hip is widely accepted. However, the coexistence rate of these two disorders has been reported with variations from 0 percent to 20 percent. For this reason, it is important to take radiographs of the hip, especially in a child under one year of age with muscular torticollis.

There are instances of breech delivery and torticollis, although it has been noted that torticollis was not related to delivery method. Birth trauma appears to be the main etiological factor in congenital muscular torticollis. A study revealed two findings hitherto unreported: mandibular hypoplasia may be a useful early sign of this condition, and the side affected may depend on the side of shoulder delivered first. More studies, however, are required to confirm these findings.

Since torticollis is a nonspecific symptom, it may be associated with a variety of conditions. In one study, 4,138 new patients were evaluated. In 60 patients, torticollis was either the sole symptom, or one of the symptoms leading to consultation, with a number of different diagnoses established (see chart above).

Atlanto-axial rotatory fixation is a rare cause of childhood torticollis. It may occur spontaneously or may be associated with trauma, upper respiratory tract infection or congenital abnormalities of the cervical spine. Presentation usually involves persistent torticollis and "cock-robin" deformity of the neck. Displacement of the lateral mass of the atlas and the eccentric position of the odontoid peg can be seen in the plain films. A computed tomography (CT) scan excludes fractures and confirms atlanto-axial rotation. The
superimposition of CT images demonstrates a way of diagnosing subluxation. MRI offers better soft-tissue differentiation, and allows assessment of the integrity of the transverse ligament.\textsuperscript{9}

Congenital muscular torticollis usually is seen in newborns, infants and children, but may also present in adolescents and young adults. It should be included in the differential diagnosis of cervical dystonia as one of the nondystonic causes of abnormal head posture. A 17-year-old boy presented with a 10-year history of progressive head tilt to the right. Bilateral posterolateral cervical pain was mild, and he was fully functional. The right SCM muscle was prominent without rotation of the head to the left. The SCM had a cord-like consistency on palpation. Magnetic resonance (MR) and CT scan imaging of the neck musculature suggested fibrous tissue within the substance of the muscle. This was confirmed histopathologically when the right SCM was surgically explored and resected. Combined use of MR and CT scan of neck muscles may be of help in the diagnosis.\textsuperscript{10}

A study in \textit{JMPT} presented a case of congenital muscular torticollis in a 7-month-old male infant with significant head tilt since birth. There was significant spasm of the left SCM and trapezius muscles, a left lateral atlas and suboccipital joint dysfunctions. Excellent results were obtained with chiropractic manipulation; trigger point therapy; specific stretches; pillow positioning; and exercises.\textsuperscript{11}

It appears it may be wise to utilize high-resolution ultrasonography when evaluating a congenital muscular torticollis (CMT) patient. CMT is now considered a dynamic disease in which the pathologic characteristics of affected SCM muscles change with time, rather than remaining a fixed and static deformity. The ultrasound can distinguish the arrangement and composition of the muscle fibers, and there is a correlation between clinical and ultrasonographic features.\textsuperscript{3} Type I fibrosis showed a localization, and type II (a diffuse type) was shown by a mixture of fibrous tissue and normal muscle fibers in the involved SCM.

Type I and type II fibrosis may represent a transitional state and develop types III and IV, which represent an irreversible state of CMT in which there is severe fibrosis with nearly complete absence of normal muscle tissue. Types III and IV fibrosis initially may contribute to the persistent symptoms up to advanced age and the high incidence of surgical intervention.\textsuperscript{3} Consequently, it is possible that if the patient is a type I or II, conservative treatment may be adequate, while type IV patients may require a surgical approach.

\textit{References}


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