

Orthotic Management of Congenital Muscular Torticollis

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What is Torticollis?

Torticollis is a condition where the head is bent to one side and rotated in the opposite direction due to a congenital shortening of the sternocleidomastoid muscle. This condition becomes apparent shortly after birth and is also known as "wry neck" syndrome. The causes of torticollis may be genetic, acquired, or idiopathic (occurring without a known cause) and may also develop later in childhood or adulthood. Acquired torticollis, which is often more difficult to treat, results from damage to the muscular or nervous system due to trauma or disease. In some cases surgical release of the tight sternocleidomastoid muscle is indicated followed by aggressive physical therapy to stretch the contracture. Often the surgeon is interested in orthotically managing the deformity by gradually moving the head into the correct position. The Fillauer Torticollis Orthosis has the advantage of being able to maintain the head in any position desired with respect to cervical flexion, abduction, and transverse rotation. Early physical therapy and positioning strategies in infancy improve outcomes in most congenital cases.

Diagnosis - Data

- Muscular torticollis is a common congenital musculoskeletal anomaly after dislocated hip and clubfoot.
- Incidence varying from 0.4% to 1.9%.
- No predilection for either sex.
- 6% to 19% (congenital muscular torticollis diagnosed at 3-12 months) have incidence of hip dysplasia in direct relation to the severity of the torticollis.

Types of Treatment

- Physical therapy — muscle stretching, PT and parental guidance.
- Surgery followed by physical therapy and orthosis.

Orthotic Indications and Goals

- Easy to fabricate; ease of donning/doffing.
- Comfortable for the patient; positional adjustments.
- Physiological positioning; stability.

Recommended Success Factors

- Accurate measurement and cast.
- Ease in donning/doffing and a comfortable fit.
- Multiplane positional adjustments.

Orthotic Design

- Height adjustment.
- Medio-lateral (M-L) angulation adjustment.
- Rotational adjustment.
- Antero-posterior (A-P) placement.
- Designed for right or left deformity.

Components

- Torticollis joint (a multiplane adjustable connector).
- Helmet/shoulder sections.
- Elastic Velcro straps.

Materials

- PE-Lite interface 3 mm.
- Velcro straps.
- Copolymer thermoplastic 1/8 inch — transfer paper to personalize.

Measurements

- Temporal head A-P.
- Temporal head M-L.

- Base of neck to mandible A-P.
- Temporal head circumference.

Patient Positioning

Stretch and exercise the patient to obtain the proper holding position during the plaster impression. Proper positioning and gentle manual stretching during assessment are important to record functional range of motion.



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Preparation for plaster impression, plaster splint of head & neck impression, preoperative fitting and delivery, and postoperative management should be planned in collaboration with the surgeon and physical therapist.

Plaster Impression and Fitting

- Apply first stockinette from base of neck to include shoulders.
- Apply second stockinette overlapping a minimum of 1 inch.
- Apply tape to secure stockinette.
- Plaster impression of torticollis side as indicated.
- Make needed multiplane adjustments.
- Confirm fit for contact at base of neck.
- Utilize elastic Velcro for comfort and security.
- Physician can easily adjust alignment and head position.
- Time of wear: three months full time, then three months night wear (typical protocol; individual regimen may vary based on age and severity).
- Stretching exercises performed by parents and therapist.
- Patient should be followed by the orthotist in addition to the physician during the initial three months.

Verify head position and confirm proper fit (lateral view). Evaluate and adjust elastic strapping as needed.

References

- Binder H., Eng G.D., Gaiser J.F., Koch B. Congenital muscular torticollis. Arch Phys Med Rehabil. 68:222-225, 1987.



- Wolfort F.G., Kanter M.A., Miller L.B. Torticollis. Plast Reconstr Surg. Sept. 2, pp. 682-692, 1988. M024/03-01.