



“EXPERIENCES IN THE SUCCESSFUL MANAGEMENT OF FIVE CASES OF STERNOMASTOID MUSCULAR TORTICOLLIS”

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**ABSTRACT**

Congenital muscular Torticollis is a rare musculoskeletal disorder characterized by unilateral shortening of the Sternocleidomastoid muscle. Producing deformity of the neck with flexion of the neck towards the same side and the chin facing the opposite shoulder. We treated six cases, and of which five are due to congenital Sternomastoid shortening (unilateral) and another case with fusion of cervical vertebrae causing Torticollis and Klippel Feil Syndrome with cleft of the soft palate which was also repaired.

**KEYWORDS :** Torticollis – Muscular Torticollis – Sternomastoid tenotomy

**Case Reports:**

**Case (1):**

Female child 6 years old with Sternomastoid Torticollis on left side present since birth. Lower polar Sternomastoid release was done followed by use of cervical collar and physiotherapy of the neck for six months. The child recovered completely and has no problem in further development of the face (Fig 1 A & B)



FIGURE 1: A. PRE OPERATIVE B. 2 YEARS POST OPERATIVE

**Case (2):**

Female aged 16 years with congenital Torticollis (rt. Side). Lower polar Sternomastoid release was done and two years follow up showed good recovery and has no developmental problems in the face even though, the treatment was delayed. (Fig 2 A & B)



FIGURE 2: A. PRE OPERATIVE B. 2 YEARS POST OPERATIVE

**Case (3):**

Female aged 16 years with congenital Torticollis on rt. Side. Release of Sternocleidomastoid muscle was done on rt. Side (lower polar) and since there is skin shortage a single Z plasty was done. Healed very well and was given physiotherapy for one month.



FIGURE 3: A. PRE OPERATIVE B. 1 MONTH POST OPERATIVE

**Case (4):**

15 years old girl having a prominent sternal head of

Sternocleidomastoid and Torticollis on rt. Side. Release of sternal head was done and kept on physiotherapy and cervical collar for three weeks. She recovered completely and had no further problems (Fig 4 A & B).



FIGURE 4: A. PRE OPERATIVE B. 3 WEEKS POST OPERATIVE

**Case (5):**

Female child 6 years old with Klippel Feil Syndrome due to fusion of cervical vertebra and deviation of the neck to the left. Low hair line and elevated scapula on left side. Scoliosis was present. Group II isolated cleft palate was present. Cleft Palate was repaired for improvement of speech and was later referred to Paediatric and Ortho Surgeon for further management (Fig 5 A, B, C, D, E & F) of the vertebral anomaly.



FIGURE 5: A. KF SYNDROME B. CLEFT SOFT PALATE C. PRE OPERATIVE D. 3 WEEKS POST OPERATIVE E. X RAY CERVICAL SPINE F. LATERAL VIEW

**Case (6):**

Male child 7 years, having congenital muscular Torticollis on the left side. Lower polar release of Sternomastoid muscle was done and cervical Collar was advised. Six months follow up showed very good result and was very happy and comfortable. (Fig 6 A & B)



FIGURE 6: A. PRE OPERATIVE B. 6 MONTHS POST OPERATIVE

**DISCUSSION:**

Torticollis, otherwise called Bent neck can occur due to various causes. More common of these is Sternomastoid muscular Torticollis due to fibrosis and shortening and the neck is bent towards one side, most commonly towards the rt. side and more commonly seen in female sex. The occiput faces the shoulder on the same side and the chin towards the opposite shoulder. Very commonly occur due to fibrosis of the Sternocleidomastoid muscle due to varied etiological factors and requires surgical correction either unipolar or bipolar release of Sternomastoid muscle and the ideal age is 0 to 4 years. In this article I am presenting six cases and five of them due to shortening of Sternomastoid and were successfully treated by lower polar release of Sternomastoid muscle and all of them had very good improvement even though they were operated at the age of 6 years to 16 years. (1 to 5)

**Epidemiology:**

The incidence of Torticollis is 1 in 250 live births. Male, female ratio is 3 : 2 and Right Side Sternomastoid is more often affected than the left one. (6, 7)

**Sternomastoid muscle Anatomy:**

The inferior attachment has a medial (sternal) and lateral (clavicular head). The sternal head is tendinous and attached to the anterior surface of the manubrium sterni and the clavicular head is more muscular and is attached to the superior border of the medial 1/3 of the clavicle. As the two heads ascend, the clavicular head spirals behind the sternal head and blends with the deep surface and forms a thick unitary muscle; ascends up and inserted to the lateral part of mastoid process and lateral half of the superior nuchal line. (8)

The etiological factors may be (9 to 14)

- A) Congenital
- Sternomastoid muscle contracture /Tumor
  - Congenital abnormality of cervical spine
  - Ocular problems like squint or visual field defects.
  - Congenital defect in hearing.
- B) Acquired causes:

Habitual, Posterior cranial fossa tumors, lesions of cervical spine, trauma, Pharyngeal infections, spasmodic or drugs like certain psychotropic drugs, Phenothiazine group etc.,

Fibromatosis colli that develops in Sternomastoid muscle may appear as Sternomastoid tumor at birth or may appear in the 1<sup>st</sup> week after birth.

Etiology is unclear

- Arterial or venous obstruction?
- Intrauterine malposition? Leading to ischemic contracture of SCM muscle. Birth trauma (ex. Forceps delivery) has also been implicated.

**Treatment:**

- Sternomastoid tenotomy (Uni or Bipolar)
- Skull traction intermittent
- Splints, Cervical Collar, Torticollis brace

Ideally for optimum results treatment should start at 0 - 4 years of age.

**CONCLUSION:**

Of all the causes of Torticollis, Sternomastoid muscular Torticollis due to congenital causes is most common, and most of these cases can be corrected by unipolar or bipolar release of Sternomastoid muscle preferably before the age of 4 years. Most of our cases gave very good results even though they were operated even at the age of 16 years. The release should be done by transverse incision parallel and above the clavicle, the anterior muscle sheath, muscle and posterior

muscle sheath needs complete release and care is to be taken to avoid injury to the important structures. It is very interesting to observe that in one of our cases only clavicular head is involved and in another case only sternal head is involved and release of these contracted heads of the muscle (lower polar) gave excellent results. There was no necessity to go in for bipolar release of the Sternomastoid muscle in any of our cases even though all of them came at a later age than 0 – 4 years. We subjected part of the sternomastoid muscle for histopathology, but all showed normal muscular appearance.

**REFERENCES**

- Tubby AH. Deformities and Diseases of Bones and Joints, 2<sup>nd</sup> ed., Vol.I, London, England:MacMillan; 1912.p.56.
- Wei JL, Schwartz KM, Weaver AL, Orvidas LJ. Pseudotumor of infancy and congenital muscular Torticollis: 170 cases, Laryngoscope 2001; 111:689-95.
- Davids JR, Wenger DR, Mubarak SJ. Congenital muscular Torticollis: Sequela of intrauterine or perinatal compartment syndrome. J Pediatr Orthop 1993;13:141-7.
- Tang S, Liu Z, Quan X, Qin J, Zhang D. Sternocleidomastoid Pseudo tumor of infants and congenital muscular Torticollis: Fine-structure research. J Pediatr Orthop 1998;18:214-8.
- Hollier L, Kim J, Grayson BH, McCarthy JG. Congenital muscular Torticollis and the associated craniofacial changes. Plast Reconstr Surg 2000; 105:827-35.
- Cheng JC, Au Aw. Infantile torticollis: A review of 624 cases. J Pediatr Orthop 1994;14:802-8.
- Colonna P. Congenital Torticollis. Va Med Mon (1918) 1927;53:794-6.
- Coventry MB, Harris LE. Congenital muscular Torticollis in infancy; some observations regarding treatment. J Bone Joint Surg Am 1959;41-A:815-22.
- Do TT. Congenital muscular torticollis: Current concepts and review of treatment. Curr Opin Pediatr 2006;18:26-9.
- Ballock RT, Song KM. The prevalence of nonmuscular causes of torticollis in children. J Pediatr Orthop 1996;16:500-4.
- Porter SB, Blount BW. Pseudotumor of infancy and congenital muscular Torticollis. Am Fam Physician 1995;52:1731-6.
- Berlin H. The differential diagnosis and management of Torticollis in children. Phys Med Rehabil Clin N Am 2000;14:197-206.
- Cheng JC, Chen TM, Tang SP, Shum SL, Wong MW, Metreweli C. Snapping during manual stretching in congenital muscular Torticollis. Clin Orthop Relat Res 2001;384:237-44.
- Joyce MB, de Chalain TM. Treatment of recalcitrant idiopathic muscular Torticollis in infants with botulinum toxin type A. J Craniofac Surg 2005; 16:3217.