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Case Series

Congenital muscular torticollis: an Orl's perspective

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ABSTRACT

Congenital muscular torticollis usually results from the shortening or excessive contraction of sternocleidomastoid muscle. Delay in diagnosis and appropriate early therapeutic evaluation can lead to permanent disability. We would like to report two rare cases with congenital muscular torticollis who underwent surgery followed by aggressive physiotherapy. We would like to emphasise the need of an early diagnosis and intervention which leads to best outcome. This can prevent progressive physical deformity. Surgeons should offer the patient with option of release and repair of sternocleidomastoid muscle as it gives excellent result in view of mobility and appearance for child.

Keywords: Congenital muscular torticollis, Sternocleidomastoid muscle, Sternocleidomastoid Z plasty

INTRODUCTION

Congenital muscular torticollis usually results from the shortening or excessive contraction of sternocleidomastoid muscle.[1] the word torticollis is from Latin origin meaning twisted neck.[2] it is also known as wryneck. Wry neck is from an old English word Wrigan meaning twisted or distorted.[3] though a benign condition, which can resolve spontaneously if diagnosed early. If left untreated can lead to plagiocephaly, hemifacial hypoplasia, body distortion and mandibular deformities. Delay in diagnosis and appropriate early therapeutic evaluation can lead to permanent disability.

Due to its rarity, variability in its clinical scenarios and associated anomalies it forms a very important aspect for all head and neck surgeons. Would like to report two cases with congenital muscular torticollis who underwent surgery followed by aggressive physiotherapy. Discussed etiology, clinical evaluation, modalities of management.

CASE SERIES

Case 1

A 12-year-old male child presented to ENT OPD with complaints of limited movement of neck on the right side since birth. He was fourth born child with no other family history for similar complaints. No other ENT complaints. Detailed medical history revealed a breech presentation with full term normal vaginal delivery. However, there was no history of forceps, vacuum, prolonged labour or any trauma, prior head and neck surgery and previous infections. Patient was poorly built with disproportionate facial appearance. On examination head was inclined towards right side with chin turned to opposite side. Range of movements were reduced on the right side of neck with a very taut, short thickened and non-tender right sternocleidomastoid muscle. Other ENT and neurological examination were normal.

Chest X-ray, radiographs of cervical spice, hips and lower extremities were normal. Patient was diagnosed as a case of right congenital muscular torticollis. CT scan was done to rule out any mass lesions underlying the muscle. Patent was already on aggressive physiotherapy since a year without any improvement.

Patient was planned for unipolar release of right sternocleidomastoid muscle. Patient was kept in supine position with rotation of head to the opposite side. A transverse incision over right sternocleidomastoid muscle about 1.5 cm above the clavicle placed. Incision

deepened and subplatysmal flaps elevated both superiorly and inferiorly. Right sternocleidomastoid muscle exposed and dissected freely along its entire length. Sternal and clavicular heads identified. Clavicular head released using bipolar close to its insertion and sternal head released more cephalad. The surrounding fibrosed deep cervical fascia also released all around. Due to extreme tautness of the muscle, Z-plasty was avoided. Internal jugular vein preserved with careful dissection. Wound closed in layers. Postoperative period was uneventful. Child was started on aggressive physiotherapy from fifth postoperative day for a duration of 2 months. Ophthalmic rehabilitation given. There was significant improvement in child's neck movement after a month of follow up.

Figure 1: Pre-operative picture of patient with right congenital muscular torticollis.

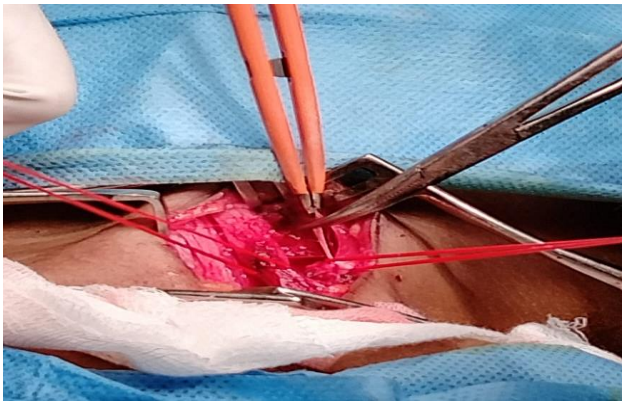

Figure 2: Intra-operative picture of right sternocleidomastoid muscle.

Case 2

A 15-year-old male child presented to ENT OPD with complaints of difficulty in moving neck to the left side since birth. There were no complaints of fever and pain. He was a first-born child without any family history of congenital anomalies. No other ENT complaints. Detailed history revealed a prolonged labour with a caesarean section due to breech presentation. No other contributory history. On examination left side of neck was shortened with head tilted to opposite side and a very taut nontender left sternocleidomastoid muscle palpated. There was significant facial asymmetry due to left cranio-orbito zygomatic flattening. Other ENT and neurological examination were normal. All the radiographs of c-spine, chest, hips and lower extremities were normal with no evidence of mal development and dislocations.

Patient was diagnosed with left congenital muscular torticollis and was planned for left sternocleidomastoid muscle release and Z-plasty. Left cervical incision given over sternocleidomastoid muscle and identified. Freed all along its posterior border. Sternal and clavicular heads released. Suturing of the distal sternal head with proximal clavicular head using 3-0 vicryl was done. Wound was closed in layers. Postop period was uneventful. Patient was started on physiotherapy and neck strengthening exercises from fifth postoperative day for a duration of 2 months. Patient showed marked improvement in range of motion of neck after a month of follow up.

DISCUSSION

Torticollis from Latin torus (twisted) and collum (neck) was defined by Tubby in 1912 as a deformity, congenital or acquired characterised by inclination of head to the side of taut sternocleidomastoid muscle with chin turned to the opposite side.[4] Congenital muscular torticollis is a painless benign condition usually presenting during infancy. It has an incidence of 0.4%.[5] Among the congenital musculoskeletal anamolies congenital muscular torticollis occupies third position after dislocation of hip and club foot.[6] Congenital muscular torticollis appears to have a male predominance with a ratio of 3:2.[1,7] In our study we had two male children. It has a predilection towards left side of neck, where as we had it on left side in one case and on right side in other.[8]

Torticollis has an elaborate list of causes with muscular torticollis being the most common cause (Table 1).[2]

Table 1: Differential diagnosis of torticollis.

Non-osseous	Osseous
Muscular	Congenital cervical spine malformations: Occipito cervical invagination, atlas malformation, Klippel-Feil syndrome.
Ocular (muscle palsy)	Rotatory fixation (C1-C2): Trauma, respiratory tract infection, cervical adenitis.
Neurogenic tumours: Cerebellar, spinal cord.	
Syndromal: Sandifer syndrome (torticollis and gastro-oesophageal reflux)	
Spasmodic	
Neurological (brachial plexus injury)	

Children with CMT can be assigned to one of three groups: 1. Children with a palpable swelling or pseudotumor of the sternocleidomastoid; 2. Children with SCM tightness but no tumor; 3. Children with all features of muscular torticollis without muscle tightness or tumor.[9] According to intrauterine theory, abnormal intrauterine position and early descent contribute for congenital muscular torticollis. In vascular theory, venous occlusion of sternocleidomastoid muscle due to position causes fibrosis and shortening of muscle.[10] In our cases, the intrauterine theory fits in for explanation due to the abnormal intrauterine position breech.

Diagnosis is mainly through clinical examination, where on palpation sternocleidomastoid muscle is very taut and fibrosed. Investigations are mainly done to rule out any associated anamolies and other neurologic and osseous causes. Torticollis is commonly associated with plagiocephaly. Other anamolies include webbing of neck and axilla, ptosis, micrognathia, cleft palate, contractures of limb and scoliosis.[11]

Physiotherapy can be used only under one year of age. Surgery is indicated when patient fails to respond to physiotherapy.[12] In our cases we performed Z- plasty in one patient and a unipolar release of both sternal and clavicular heads in another. We would like to highlight the need of careful dissection to protect major vascular structures like internal jugular vein. Both techniques had almost similar results. Both patients showed marked improvement after aggressive physiotherapy. Recurrence rate is about 3% according to literature.[13] We have not found any recurrence in our patients.

CONCLUSION

Torticollis is a very unusual benign condition of the head and neck region. Though many are unaware, it has a comprehensive list of etiology. Hence, the diagnosis needs an elaborate clinical history including even the perinatal period and a vigilant clinical examination. Imaging is essential to rule out structural and neurologic causes.

We would like to emphasise the need of an early diagnosis and intervention, which leads to best outcome. This can prevent progressive physical deformity. Surgeons should offer the patient with the option of release and repair of sternocleidomastoid muscle as it gives excellent result in view of mobility and appearance for the child. This will improve the overall behaviour of child and leads to betterment of quality of life. The earlier treatment given can reduce significant burden on both child and parent.

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REFERENCES

1. Hulbert KF. Torticollis. Postgrad Med J. 1965;41(481):699-701.
2. Lee J, Lim SY, Song HS, Park MC. Complete tight fibrous band release and resection in congenital muscular torticollis. J Plast Reconstr Aesthet Surg. 2010;63:947-53.
3. Hyman CA. Chiropractic adjustments and congenital torticollis with facial asymmetry: a case study. ICA Rev. 1996;4:1-59.
4. Ranjan RK. Rajesh Kumar Ranjan, Manish Kumar, Abhijit Subhash, Saurav Kumar and Pankaj Kumar. Int J Orthop. 2017;3(4):615-7.
5. Uhing MR. Management of birth injuries. Clin Perinatol. 2005;32:19-38.
6. Bredenkamp JK, Hoover LA, Berke GS, Shaw A. Congenital muscular torticollis. A spectrum of disease. Arch Otolaryngol Head Neck Surg. 1990;116(2):212-6.
7. Clarren SK, Smith DW, Hanson JW. Helmet treatment for plagiocephaly and congenital muscular torticollis. J Pediatr. 1979;94(1):43-6.
8. Sonmez K, Turkyilmaz Z, Demirogullari B, Ozen IO, Karabulut R, Bagbanci B et al. Congenital muscular torticollis in children. JOtorhinolaryngol Relat Spec. 2005;67:344-7.
9. Cheng JCY, Tang SP, Chen TMK. The clinical presentation and outcome of treatment of congenital muscular torticollis in infants. A study of 1,086 cases. J Pediatr Surg. 2000;35:1091-6.
10. Graham J. Congenital Muscular Torticollis. In Jones KL. Smith's Recognizable Patterns of Human Deformation. Philadelphia: Saunders. 2007;130-40.
11. Froster-Iskenius UG, Waterson JR, Hall JG. A recessive form of congenital contractures and torticollis associated with malignant hyperthermia. J Med Genet. 1998;25:104-12.
12. Burch C, Hudson P, Reder R, Ritchey M, Strenk M, Woosley M. Cincinnatti Children's Hospital Medical Center; Evidence-based care Guideline for Therapy Management of Congenital Muscular Torticollis. Pediatric Physical Therapy. 2009;240-90.
13. Wirth CJ, Hagena FW, Wuelker N, Siebert WE. Biterminal Tenotomy for the treatment of congenital muscular torticollis. J Bone Joint Surg Am. 1992;74:427-32.

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