

Response of Primary Torticollis to Physiotherapy

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ABSTRACT

Objective To determine the response of torticollis including sternocleidomastoid tumor to physiotherapy and positioning.

Study design Descriptive case series.

Place & Duration of study Department of Paediatric Medicine at Chandka Medical College (CMC), Shaheed Muhatarma Benazir Bhutto University, Larkana, from January 2007 to June 2008.

Methodology All children with swelling at the side of neck, difficulty in head movement, not feeding on one side of breast and with the history of prolonged or difficult labor, were included. Diagnosis of torticollis and /or sternocleidomastoid tumor was based on history and physical examination of the swelling in the neck. They were advised physiotherapy and proper position as per protocol for 4 weeks to 24 weeks. Patients were reviewed at 4 weeks interval for response to physiotherapy. The data were analyzed by SPSS version 10.0.

Results A total of 170 patients of torticollis were enrolled during the study period. Most of the cases were below four weeks of age (n 61- 35.9%) with overall male to female ratio of 1.4:1. The common presentation of torticollis were excessive cry with neck movement (n105, 61.7%), followed by sternocleidomastoid tumor or swelling on side of neck (n 95, 55.09%), history of prolonged/difficult labor (n 84, 49.04%) and not feeding from one side of breast (n 75, 44.11%). Major physical signs were head tilt on one side in all cases and swelling in right side of neck in 95(55.09%) cases. 154 (90.60%) patients improved completely within 4 weeks to 4 month of physiotherapy while 15 (8.80%) cases showed partial improvement.

Conclusion Majority of cases completely improved on physiotherapy and rest showed considerable improvement.

Key words Torticollis, Sternocleidomastoid tumor, Physiotherapy.

INTRODUCTION:

Torticollis or wry neck results from tightness and shortening of one or rarely both sternocleidomastoid muscles.^{1,2,3} Congenital muscular torticollis (CMT) is further divided into three groups, sternocleidomastoid tumor group (SMT), those with tightness of the sternocleidomastoid muscle (SCM) but no clinical "tumor" as muscular torticollis (MT).^{2,4} Postural torticollis (POST) is the term used to describe those patients with congenital torticollis

who have all the clinical features of torticollis but with no demonstrable tightness nor tumor of the sternocleidomastoid muscle.^{2,3,4} Usually these patients present with a visible or sometimes palpable swelling (40-50%), often referred to as a sternocleidomastoid tumor.^{2,4} It often persists until they are aged one year. It is rarely bilateral and may be seen in older children in whom the mass was not previously identified.^{5,6} The mass is generally 1-3 cm in diameter, a painless swelling in the substance of the sternocleidomastoid muscle and develops in neonates at the age of 2-3 weeks.^{2,7,8}

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In infants, the tumor is firm, and the patient's head is tilted and flexed to the side of the fibrosis and chin (face) turned toward opposite side.^{9,10} About 50-70% of SCM tumors resolve spontaneously during the

first year of life with minimal residual deficits.^{2-4,10} Early physiotherapy is initiated if there is any difficulty in rotation from fibrosis and most of the patients respond to it. Surgery is recommended for resistant cases after 6 months of physical therapy.¹¹⁻¹³ In this study role of physiotherapy in patients with torticollis was further elucidated.

METHODOLOGY:

This descriptive case series was conducted at Paediatric outpatient department of Chandka Medical College Hospital Larkana from January 2007 to June 2008. All new patients from birth to 1 year of age with diagnosis of congenital torticollis without any associated syndrome were included. Patients with torticollis due to other causes like cervical spine anomalies etc were excluded.

The diagnosis of torticollis was made on clinical grounds in presence of one or more symptoms like swelling at the side of neck, difficulty in head movement with presence of head tilt etc. All patients were followed up at four weekly interval with documentation of the head tilt, active and passive range of rotation and side flexion of the neck, facial asymmetry, size of the tumor and time of disappearance of tumor, and treatment duration. They were subjected to physiotherapy and proper positioning of neck. Patients were reviewed at an interval of 4 weeks for response to physiotherapy and data was analyzed by using SPSS 10.0. Descriptive statistics like frequency, percentage, mean and standard deviation were computed.

RESULTS:

One hundred seventy patients were studied. There were 103 (60.6%) males and 67 (39.4%) females. The age of study population was 1.7 ± 0.63 months. There were 96 (56.5%) patients 1 to 3 months followed by 61 (35.9%) of <1 month and 11 (6.5%) of 3 to 6 month of age. The mean size of tumor was 4.0 ± 1 (range 1cm - 6cm). In 75 (41.1%) cases no tumor was present.

The most common presentation was sternocleidomastoid tumor or swelling on side neck in 95 (55.9%) cases (table I). Most common group that caused torticollis was sternocleidomastoid tumor (table II). The lower third of sternocleidomastoid muscle was the most common site of the tumor (n 76 – 44.7%) followed by middle third (n 70 – 41.2%). History of difficult labor was present in 84 (49.4%) cases. On physiotherapy 154 (90.6%) cases improved completely within 4 weeks to 4 months while 15 (8.8%) cases showed partial improvement at 6 month post physiotherapy. In one case no improvement was noted.

Table I: Clinical Presentation

Presentation	Frequency	Percentage
Swelling on side neck	95	55.9
Excessive cry with neck movement	105	61.7
Not feeding one side breast	75	44.11
Prolonged /difficult labor	84	49.04
Head tilt on one side	170	100

Table II: Clinical Groups

	Frequency	Percentage
Sternocleidomastoid Tumor	95	55.9
Tightness of Sternocleidomastoid Muscle	56	32.9
Postural torticollis	19	11.2
Total	170	100.0

DISCUSSION:

Torticollis occurs in 0.4%- 2% of all births.^{1,2} The etiology is incompletely understood, although multiple theories exist, including intrauterine crowding or vascular phenomenon, fibrosis from peripartum bleeds, a compartment syndrome, and a primary myopathy of sternocleidomastoid muscle.¹⁴ A history of difficult birth was found in 30–60% of patients with torticollis. Most studies showed that 90-100% of infants with CMT who received early physiotherapy treatment improved within the first year of life.^{14,15} Majority of the studies showed male dominance with slight female preponderance in few series.^{11,16}

There are well-established associations between sternocleidomastoid tumor and a breech presentation, forceps delivery, and primiparous birth.¹⁷ In present study history of prolonged or difficult labor was found in half of the cases. Most cases of torticollis presented with sternocleidomastoid tumor in this study. In Cheng JC series 30.6% had SCM tumor while 85% of cases with torticollis had sternocleidomastoid tumor and 15% had postural torticollis in Tatli B study.¹⁶ In about 90% patients of Lower KC series neck mass was present.¹⁷

In most of studies left side of neck was involved. In study by Wei, J left side of the neck was affected in 54.1%, over 90% had a head tilt, and 2.4% had feeding difficulty as a result of the torticollis.¹⁵

In this study feeding difficulty as a result of the torticollis.¹⁵ In this study 55% patients had swelling on right side. Most common site for sternocleidomastoid tumor is middle third of sternocleidomastoid muscle but in Cheng JC series tumor was found clinically in the lower third of the sternocleidomastoid muscle in 35% and middle third in 40.4%.

One to three month was the most common age of presentation found in most studies. Most cases of pseudotumor of infancy (POI) presented earlier as compared to congenital muscular torticollis.¹⁵ In Das BK study two cases presented at neonatal age, 7 at infantile age and 5 were >1 year of age.¹¹ In study of Kumar B the swelling was noticed in all cases at the age 1- 8 week.¹² Overall prognosis of torticollis, may it be sternocleidomastoid tumor or congenital muscular torticollis or postural torticollis, is excellent. Most studies showed total resolution in 90% to 95% of cases.

In Cheng JC series 91.1% cases were totally improved by manual stretch therapy and active home treatment protocols.² In Wei J passive range of motion exercises were recommended as the initial treatment for 65.3% of patients; 11.2% of patients were referred for physical therapy and 95.4% had total resolution.¹⁵ In this study physiotherapy resulted in an acceptable response rate in high proportion of cases with complete resolution of symptoms.

CONCLUSIONS:

In torticollis early diagnosis, early active home positioning and stimulation program and manual stretching showed an overall excellent to good results in 91.1% with 5.1% requiring subsequent surgical treatment.

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