



Case Reports

Chiropractic Management of Infantile Torticollis With Associated Abnormal Fixation of One Eye: A Case Report



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Abstract

Objective: The purpose of this case report is to describe the chiropractic management of a child with abnormal fixation of one eye and torticollis.

Clinical Features: A mother presented with a concern regarding her 23-month-old son who had a history of torticollis and an abnormal fixation of the right eye. She noticed the head tilt when he was about 7 months old and abnormal alignment of the right eye when the boy was 18 months old. At 15 months when he took his first steps, his head tilt became worse. At 21 months old, a neurological and orthopedic examination at the regional university children's hospital ruled out presence of a tumor of the cervical spine or posterior fossa. The orthopedist sent the baby for chiropractic evaluation and treatment. Chiropractic exam found decreased active and passive range of motion in the cervical spine and no evidence of mass or contracture of the sternocleidomastoid muscle. Segmental palpation showed a decreased joint play and pain reaction at level C1/C2 on the right.

Intervention and Outcome: The chiropractic treatment consisted of spinal manipulative therapy of the cervical spine in addition to massage and stretching of the neck muscles. Within a period of 4 weeks (3 chiropractic treatments) the torticollis was nearly resolved and the abnormal fixation of the right eye was no longer apparent. No relapse of the symptomatology was observed at a follow-up consultation at 26 months.

Conclusion: The patient responded favorably to chiropractic care, showing a possible mechanical spinal cause for his torticollis and for the secondarily developed abnormal fixation of the right eye.

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Introduction

The term *torticollis* means twisted neck and is derived from the Latin words “tortus” and “collum”.⁷ The condition stems from a musculoskeletal problem or

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an underlying non-musculoskeletal pathology.⁴ Musculoskeletal reasons for infantile torticollis include a tumor in the sternocleidomastoid muscle (SCM), an imbalance in the neck musculature or a dysfunction in the craniocervical junction.¹ In addition, abnormalities of the cervical spine, like the Klippel-Feil syndrome, can cause torticollis.² The non-musculoskeletal reasons for infantile torticollis could be ocular, neurological or due to auditory problems.²

The most common ocular causes of torticollis in all population ages are a congenital paralytic squint and congenital nystagmus.⁶ Kuschner^{6,7} stated that the underactivity of the superior oblique muscle is the most common ocular cause of torticollis in all ages. It is also stated by Kekunnaya⁸ that 74% of all patients with unilateral paresis of the superior oblique muscles have torticollis. In a patient with true ocular torticollis, the condition results from the body trying to assist its vision in one or more ways:⁶ to improve vision, to bring the field of vision into a central area, to reduce eye discomfort, to strengthen binocular vision and to protect and relieve the eye from pain. With unilateral paresis of the superior oblique muscle the eye looks up and in slight adduction when looking straight ahead; a child will usually flex its neck laterally to the opposite side to compensate, but variations can occur.⁶

The reported prevalence of congenital muscular torticollis with a tumor in the SCM has ranged from 0.3% to 2%.³ The prevalence of muscular imbalance and dysfunction in the craniocervical junction causing torticollis is unknown.

The prevalence of the non-musculoskeletal causes of torticollis in children is unknown. Ballock (1996)⁴ studied 288 subjects with a mean age of 22.7 months and found that non-musculoskeletal causes of torticollis accounted for 18.4% of the total. Of all the non-musculoskeletal causes 22.6% had ocular etiology. Another study, a prospective consecutive case series from 2005,⁵ investigated the prevalence of different causes of torticollis in children presenting to primary care pediatricians. Of the 29 patients below the age of one year, 19 had orthopedic etiology, 4 ocular and 6 unknown problems. This is a small number of patients, but is, however, the only prospective study done on the prevalence of torticollis in infants.

Musculoskeletal and non-musculoskeletal torticollis can cause secondary functional deficits like unilateral breastfeeding problems and asymmetrical use of their hands.¹⁴ In addition, changes in form can develop because of torticollis, such as deformational plagiocephaly, facial scoliosis and infantile scoliosis.^{2,14}

There is a paucity of literature investigating or reporting on the chiropractic management of ocular torticollis in children. Therefore, this case report presents a case where abnormal fixation of one eye developed as a secondary complication to torticollis.

Case Report

Although the case report is of a low level of evidence, it is not without value,⁹ and it is the best way to share rare observations. Ethical considerations were considered and this case report includes pictures, with permission from the parents, to help illustrate the case. Written informed consent was obtained from the parents for publication of this case report and the accompanying pictures.

History

A mother with her 23-month-old baby, who had a history of non-resolved torticollis, consulted the author, a chiropractor in a private clinic. The boy is the first child of a married couple with an uneventful antenatal history. The mother gave a non-assisted spontaneous birth in week 38 + 0 in the local hospital. Birth weight was 3000 grams, length 47 cm. Except for minor jaundice, the results of the postnatal examination were excellent. Fussiness and crying were present at night for the first few months, otherwise he was a healthy boy with normal developmental milestones.

The head tilt was noticed by the mother when the boy was about seven months old. The head tilt was to the left, with a rotational component to the right. She informed her pediatrician, but he saw no reason to investigate further. Pictures of the child as young as 4 weeks of age seem to show this head tilt could have been there at this age (Fig 1). At 15 months, he took his first steps; the head tilt became worse.

In addition, the mother had noticed abnormal alignment of the right eye and she consulted a pediatric ophthalmologist when the boy was 18 months old (Figs 2 and 3). The ophthalmologist noticed that the boy's right eye was adducted, when looking straight ahead, but made no any abnormal findings in his examination, which included a careful examination of the extra-ocular movements. When the boy was 21 months old, a neurological and orthopedic examination was made by specialists at the regional university children's hospital during which the presence of a tumor of the cervical spine or posterior fossa was ruled

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