Asia-Pacific Chiropractic Journal

ASRF CASE REPORT PROJECT

Improved scoliosis in 13-year-old female: A case report

Emilio Marsilla-Alarcon, Ruth Postlethwaite and Clare McIvor

Abstract: *Objective/Clinical Features* 13-year-old female presented with the primary concern of scoliosis. There was no history of major surgeries or significant diseases, illnesses, or comorbidities. The patient practices Taekwondo and her reported hip and left knee pain was preventing her from training. The preliminary radiological evaluation revealed a scoliosis of 13°, with dysmetria of 14 millimetres. Bipedal stabilometry was used for the posturography evaluation. The Index Eyes Open - Closed was performed with a starting score of 93. Her average angle Left-Centre-Right: -4.45 with eyes open and -3.76 with eyes closed.

Intervention/Outcomes The patient attended 12 appointments. Chiropractic checks and adjustments were performed with *Diversified Technique*. Evaluation of vertebral subluxations were performed with leg checks, motion palpation, algometry, and thermography.

Conclusion Further research should examine the possibility that improvements of scoliosis under chiropractic care may be related to an increase in proprioceptive ability and spinal/skeletal adaptability

Indexing Terms: Chiropractic; Subluxation; Adaptability; scoliosis, proprioception.

Introduction

Scoliosis is a lateral curvature of the spine commonly diagnosed in adolescents. (1) While some conditions may occur as a comorbidity, such as cerebral palsy or muscular dystrophy, the cause is as yet unknown. Chiropractic case report data has traced Scoliosis diagnosis to children as young as 2½ years of age, despite the normal age of presentation being 10-15 years with the highest prevalence occurring between the ages of 11 and 14. (2, 3, 4)

Early research on the condition suggested that proprioception, a person's sense of where they are in space, may be a contributing factor in idiopathic scoliosis. (5) This was then further examined in 2017 when a study suggested that adolescent idiopathic scoliosis may in fact neglect proprioceptive information. As recent studies have shown chiropractic care to increase proprioception (joint position sense), and other research suggests early screening and intervention increases outcomes for scoliosis patients, it is reasonable to suggest that chiropractic care may be investigated further as a

... Proprioception, essential for postural stability, is considered a factor in this case of scoliosis in a 13yo ♀. Sophisticated postural measurement documented the improvement in this case ...

management modality for scoliosis. (7. 8. 9)

The current case report examines a case of scoliosis under subluxation-based chiropractic care.

Background

A 13-year-old female presented for chiropractic with a primary concern of scoliosis. At the time of presentation, she had no history of surgery or significant diseases, illnesses, or comorbidities. The patient also reported hip and left knee pain. As a Taekwondo practitioner with no history of notable trauma, her pain had worsened to the point where it would no longer allow her to train.

She listed her pain as 8/10 on the numerical pain scale when performing a deep squat. Given her high level training and competition, this was a significant increase in pain and decrease in function from her normal experience.

Examination

Upon presentation, a thorough examination was undertaken which included preliminary radiological evaluation. This revealed a scoliosis of 13°, with dysmetria of 14 millimetres. Her preliminary posturography evaluation was then performed using bipedal stabilometry.

A *Freemed* baropodometric platform (Rome, Italy) and FreeStep software v.1.0.3 (Rome, Italy) were used to measure the stabilometric parameters. The Index Eyes Open – Closed was performed with a starting score of 93. Her average angle Left-Centre-Right: -4.45 with eyes open and -3,76 with eyes closed.

Management

Following this examination and history, the patient commenced a care plan comprising 12 visits without other attached treatment. She had no other treatment during this time. Chiropractic checks and adjustments were performed with *Diversified Technique*. Evaluation of vertebral subluxations were performed with leg checks, motion palpation, algometry and thermography. The patient also underwent an evaluation in a *Posturometer* before and after each of the 12 visits.

An average of three adjustments were performed per visit. The radiological evaluation was done in the German clinic in the city of *Puerto Varas*, before and after the chiropractic care.

Outcomes

Following the 12-session course of care, a post-chiropractic care x-ray was completed (almost three months later). This revealed a significant reduction of the scoliosis, which now measured only 6°, with dysmetria of 7 millimetres. Posturography results revealed a score of 314 on the Index Eyes Open-Closed test, with an average angle (Left – Centre – Right) of -0,67 with eyes open and -1,06 with eyes closed. This represented a clinically significant increase in stability and a clinically significant decrease in the severity of the scoliosis.

The patient reported that her pain upon performing overhead squats had dropped to 2/10 on the numerical pain scale after five sessions, and at the completion of the 12-week course of care, she was back to training and competing normally.

Discussion

This case report adds to the existing evidence that suggests chiropractic care may be helpful in the management, and even improvement, of scoliosis. Given the evidence positing a link between proprioception and scoliosis, it is suggested that further research examines the possibility that

improvements of scoliosis under chiropractic care may be related to an increase in proprioceptive ability and spinal/skeletal adaptability.

Further research is required to confirm this and to further explain the mechanisms behind such improvements.

Ruth Postlethwaite
BBiomedSc
Writer, ASRF

Clare McIvor
BBus(Admin),
GD Comms(ProfWrit,Edit),
GD(Psych)(Cand)
Writer, ASRF

Emilio Marsilla-Alarcon
DC
Private practice of chiropractic
quiroautonomo@gmail.com

Cite: Marsilla-Alarcon EM, Postlethwaite R, McIvor C. Improved scoliosis in 13-year-old female: A case report. Asia-Pac Chiropr J. 2022;2.6. URL apcj.net/papers-issue-2-6/#EmilioScoliosis

References

1. Staff writer (2022). "Scoliosis". Mayo Clinic, https://www.mayoclinic.org/diseases-conditions/scoliosis/symptoms-causes/syc-20350716 retrieved 01 March 2022
2. Rosen, M., and Blum, C., 2021. Management of a 2 ½ year old female with a 35 degree scoliosis and 2 hemi-vertebrae: case report. Asia Pacific Chiropractic Journal. https://www.apcj.net/site_files/4725/upload_files/Rosenscoliosis.pdf?dl=1
3. Gutknecht S, Lonstein J & Novacheck T 2009, 'Adolescent Idiopathic Scoliosis: Screening, Treatment and Referral', A Pediatric Perspective, vol. 18, no. 4, pp. 1-6.
4. [2] Sabirin J, Bakri R, Buang SN, Abdullah AT & Shapie A 2010, 'School Scoliosis Screening Programme – A Systematic Review', Medical Journal of Malaysia, December issue, vol. 65, no. 4, pp. 261-7.
5. Barrack RL, Whitecloud TS 3rd, Burke SW, Cook SD, Harding AF. Proprioception in idiopathic scoliosis. Spine (Phila Pa 1976). 1984 Oct;9(7):681-5. DOI 10.1097/00007632-198410000-00005. PMID: 6505836.
6. Assaiante C, Mallau S, Jouve JL, Bollini G, Vaugoyeau M. Do adolescent idiopathic scoliosis (AIS) neglect proprioceptive information in sensory integration of postural control? PLoS One. 2012;7(7):e40646. DOI 10.1371/journal.pone.0040646. Epub 2012 Jul 17. PMID: 22815779; PMCID: PMC3398941.
7. Fong DY, Cheung KM, Wong YW, Wan YY, Lee CF, Lam TP, Cheng JC, Ng BK, Luk KD, 'A population-based cohort study of 394,401 children followed for 10 years exhibits sustained effectiveness of scoliosis screening', Spine J. 2015 May 1;15(5):825-33. DOI 10.1016/j.spinee.2015.01.019. Epub 2015 Jan 20.
8. Haavik H, Murphy B (2011), "Subclinical Neck Pain and the Effects of Cervical Manipulation on Elbow Joint Position Sense," Journal Manipulative and Physiological Therapeutics, Vol. 34, Is. 2, 2011:88-97, DOI https://doi.org/10.1016/j.jmpt.2010.12.009
9. Learman K, Myers J, Lephart S, Sell T, Kerns J, and Cook C (2009), "Effects of Spinal Manipulation on Trunk Proprioception in Subjects with Chronic Low Back Pain During Symptom Remission," JMPT, Vol 32, Number 2, pp. 118-26

About the chiropractor

Emilio Marsilla-Alarcon, Chiropractor, graduated from the C*entral University of Chile*, certified in Thompson and MPI, currently works in the cities of Puerto Varas and Puerto Montt at the *SurQuiropráctica* chiropractic center.

Also by this author

Alarcon EM, Postlethwaite R, McIvor C. Resolution of severe hypoacusia and first degree tinnitus concomitant with chiropractic care. A case report. Asia-Pac Chiropr J. 2022;2.5. URL apcj.net/papers-issue-2-5/#Emiliohypoacusia

About the Case Report project

This Case Report is a part of the ASRF Case Report Project 2021, a project designed to gather client studies from chiropractors and transform them into much-needed case reports, focused on the effects of chiropractic care on clinical presentations highly relevant to chiropractic, such as stress, immunity and adaptability. This project was made possible by the generous fundraising and contributions of ASRF supporters.