Chiropractic adjustments plus massage and kinesio taping in the care of an infant with gastroesophageal reflux

TRACY A. BARNES, D.C., D.I.C.C.P.

ABSTRACT

Objective: To present a clinical case of how chiropractic adjustments supported by the application of Kinesio Tape was of benefit in a case of and infant with gastroesophageal reflux.

Design: A case study.

Setting: Private practice.

Patient: A 3-month-old infant presented to a chiropractic office with history of gastroesophageal reflux (GER) of one-month duration.

Treatment and Results: Following two treatments of chiropractic full-spine adjustments, abdominal myofascial massage and the application of a corrective Kinesio Taping method, the infant's incidence of regurgitation and associated symptoms decreased and later resolved.

Conclusion: This combination of treatment has not been cited in previous literature. This case report highlights a protocol of care for the infant with GER and suggests the need for further investigation.

Key words: chiropractic, adjustment, gastroesophageal reflux (GER), infant, massage, Kinesio Tape

INTRODUCTION

Gastroesophageal Reflux (GER) is the most common esophageal disorder in children of all ages.[1] It is defined as a condition that develops when the reflux of stomach contents causes troublesome symptoms and/or complications.[2] Regurgitation/vomiting, excessive crying, daily hiccups, respiratory symptoms, arching and refusal to feed are frequent symptoms.[3]

The pathophysiology of GER is transient relaxation of the lower esophageal sphincter along with inhibition of peristalsis of the esophagus. The available treatment methods are feeding habit and sleeping position changes, medications and anti-reflux surgery. The differentiation of colic and gastroesophageal reflux (GER) must be considered but may prove challenging, as there are common and overlapping symptom complexes. Colic is a poorly defined state of prolonged or excessive crying in young infants who are otherwise well. Classic pediatric texts cite more than 3 hours per day of irritability or crying on more than 3 days per week for more than 3 weeks in a child younger than 4 months of age. Absence of any defined organic basis for the irritability is critical. By contrast, GER is defined as effortless regurgitation of gastric contents; it is extremely common in infants. GER occurs physiologically at all ages, and most episodes are brief and asymptomatic. GER may progress to gastroesophageal reflux disease (GERD). Physiologic reflux (the normal GER of infancy) is the more common form. Most infants eventually outgrow the symptoms by the end of the first year of life.[4,5]

Tracy Barnes, D.C., D.I.C.C.P.
Private practice, Louisville, Kentucky, USA.
Email: tabarnes@aol.com

HISTORY AND EXAMINATION

A 3-month-old Caesarean section delivered infant presented to the chiropractor with increased episodes of 'spitting up.' The child's pediatrician had diagnosed her with GER. She had been breastfed from birth, initially experiencing latching difficulties and then refusing to nurse, according to her mother. She was then supplemented with a milk-based formula.

On exam, palpation revealed restriction of the thoracic spine with subluxation at T6-7. Upper cervical and pel-vic subluxations were also noted. McMullen's reverse fencer inversion analysis of upper cervical position was used to assess for cervical spine subluxation. The atlas was subluxated superiorly and laterally to the right (C1 ASR).[6]

Anterior dishing of the spinous processes from T5-7 was noted on static palpation with slight wincing noted on palpation to these areas. The child's gluteal crease was right deviated with a decreased distance of the right PSIS to S2 noted in relation to the left indicating the sacrum was subluxated anterior and inferior on the right (AI sacrum).

Significant abdominal rigidity was noted on exam with increased irritability on the application of inferior to superior pressure inferior to the xyphoid process and along the lower left rib line.

Primitive reflexes (Blink, Palmar grasp, Moro) were present as a normal finding of infant automatisms. Inversion of the infant showed significant full spine arching indicating dural tension from cranium to sacrum. The pediatrician had recommended medication but the mother had not filled the prescription and wanted to 'try something else first.'

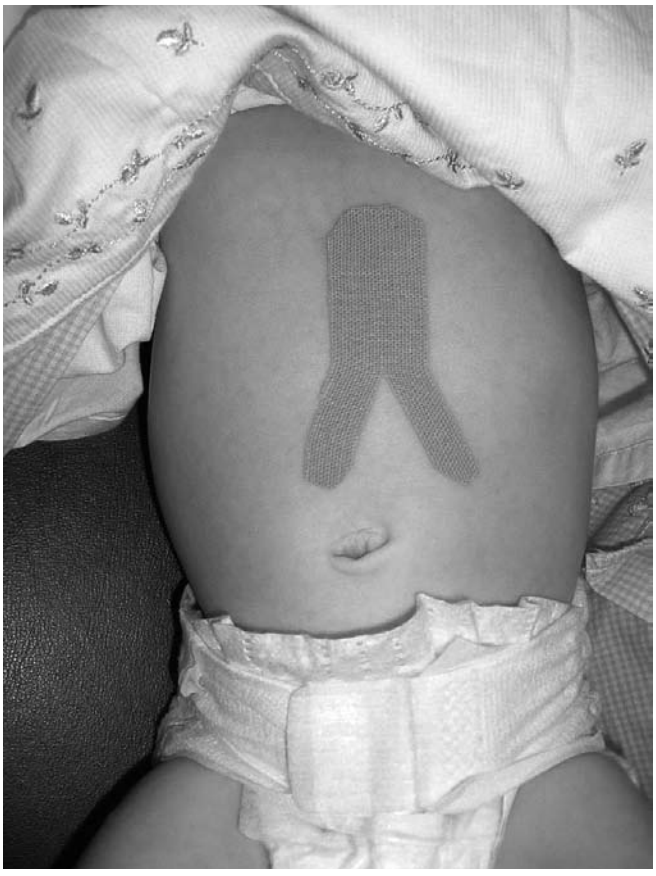
TREATMENT METHODS

Chiropractic adjustments were delivered at C1 on the right using a light force fingertip correction from lateral to medial with the child lying supine on a flat, non-segmented chiropractic table. Corrections at the C1 level were made on visits one through eight with no indicators showing subluxation at the C1 level on visits nine and ten.

A Logan basic technique contact at the right sacrotuberous ligament was used to correct for sacral subluxation. This contact was applied with the tip of the 5th finger for approximately two minutes on visits one to three and again on visits six to eight. Anterior thoracic spine corrections were made with a bilateral fingertip contact at T8 and a force being applied from posterior to anterior. These corrections were made on visits one to three and six to eight.

Clockwise abdominal massage was applied on each visit and was taught to the parent to continue at home on a 2-3x/day frequency. This massage involved the application of a non-allergenic lubricant/lotion starting at the right lower abdominal quadrant and continuing in a clockwise pattern along the path of the large intestine to the lower left abdominal quadrant. In addition massage strokes were applied from superior to inferior starting inferior to the infant's xyphoid process and along the lower rib line to umbilicus with the desire of resetting proper stomach position.

In addition to correcting noted spinal subluxations



and applying manual massage techniques, the application of Kinesio Tape was used. The Kinesio tape used with this patient was a 1" wide, approximately 3" long Y shaped cut strip of the waterproof variety of the product. The tape base was set over the lower sternum/xyphoid process and paper off tension was applied with no tension placed on the tape tails.

Parents were given pre-cut replacement Kinesio tape strips with instructions to leave the tape on for up to 3 days. They were told to remove the tape and wait 24 hours; then replace the tape in the same manner applied as described above.

Spinal subluxation corrections, massage and Kinesio Taping as needed were made in decreasing frequency from 3x/month to 1x/month over 6-month period.

After two adjustments, massage and tape applications in the first 2-week period, the mother noted that the child went from 'spitting up eight times a day to twice a day.' She noted that after three visits the child's reflux incidences increased until she realized that the infant's three-year-old sister had discovered the tape and unbeknownst to the

mother had 'ripped it off' the infant's abdomen. Once the tape was reapplied, the reflux frequency decreased again to 1-2x/day.

After six months of care, the mother stated that the child's rate of reflux had 'decreased dramatically' and was 'no longer a problem.' Medication prescription was never filled. On exam the child had decreased abdominal rigidity, irritability and crying episodes. Indicators for spinal subluxations were no longer present. The child was released from care to return on an as needed basis.

DISCUSSION

Chiropractic adjustments of subluxations allowed for improved neurologic stimulus specifically to areas providing sympathetic tone to the distal esophagus and cardiac opening of the stomach.[7] The efficacy of chiropractic adjustments on visceral symptomotology in infants is cited and explored in the literature by Biederman and Davies as well.[8,9] Massage techniques aided in manual correction of a stomach malposition that allowed for acid gastric contents to reflux into the esophagus.

A literature review reveals several studies, both individual case studies and randomized clinical trials that demonstrate relief of colic in infants undergoing chiropractic adjustments.[10,11,12,13,14,15,16,17] Two recent studies on chiropractic intervention for GER, one of which resulted in referral for co-management and the other, a clinical trial conducted on adults demonstrated findings that suggested both SMT and ischemic compression were found to be effective treatments for patients experiencing GERD symptoms, even at 6-month follow-up. Ischemic compression alone was more effective than SMT alone which may support the author's premise of the efficacy of Kinesio Taping as an ancillary modality.[18,19]

Kenso Kase, D.C. developed the Kinesio Taping method in 1973 as a way to aid the body's nervous, muscular, vascular and lymphatic systems without restricting range of motion.[20] The tape itself is a polymer elastic strand wrapped by 100% cotton fibers that is designed to mimic the qualities of the skin. It is applied to the skin and stays in place due to an acrylic, heat activated adhesive. Kinesio Tape is latex-free and can be worn for multiple days.

Kinesio Taping in this case, was applied with the idea of maintaining corrected stomach position and stimulating proprioceptive response from the skin surrounding the upper abdominal area. It is seen as an adjunct to spinal subluxation correction and enhances the work of myofascial massage.

CONCLUSION

An infant with GER had a positive response from care that included chiropractic adjustments, massage, and the use of the Kinesio Taping method. Parents found the home application of Kinesio taping easy to use.

Other cases need to be studied and documented to evaluate the combination of KT with chiropractic adjustments on infants with GER. These applications are worth study in a larger population base.

REFERENCES

1. Chawla S. Gastroesophageal reflux disorder: a review for primary care providers. *Clin Ped* 2006; 45:7-13.
2. Vakil N et al. *Am J Gastroenterol* 2006; 101:1-21.
3. Gupta SK. Presenting symptoms of nonerosive and erosive esophagitis in pediatric patients. *Dig Dis Sci* 2006; 51:858-63.
4. Colic. In: Schwartz MW, Bell L, Bingham P, et al (eds). The Five Minute Pediatric Consult. 3rd ed. Philadelphia, Pa: Lippincott Williams and Wilkins; 2003: 264-265.
5. Gastroesophageal reflux. In: Schwartz MW, Bell L, Bingham P, et al (eds). The Five Minute Pediatric Consult. 3rd ed. Philadelphia, Pa: Lippincott Williams and Wilkins; 2003: 378-379.
6. McMullen M. Assessing upper cervical subluxations in infants under six months. *Intl Rev Chiro* March/April 1990: 39-41.
7. Gray's Anatomy, 29th edition, Philadelphia: W.B. Saunders Co., 1973
8. Biedermann HJ. Kinematic imbalances due to suboccipital strain in newborns. *Manual Medicine* 1992, 6: 151-156.
9. Davies NJ, Jaison JR. Chiropractic management of irritable baby syndrome, *Chiropr J Aust* 2007, Mar;37(1): 25-29.
10. Leach RA. Differential compliance instrument in the treatment of infantile colic: a report of two cases, *J Manipulative Physiol Ther* 2002, (Jan);25 (1): 58-62.
11. Wiberg JMM, Nordsteen J, Nilsson N. The short-term effect of spinal manipulation in the treatment of infantile colic: a randomized controlled clinical trial with a blinded observer *J Manipulative Physiol Ther* 1999 (Oct);22 (8): 517-522.
12. Sheader WE. Chiropractic management of an infant experiencing breastfeeding difficulties and colic: a case study. *J Clinical Chiropr Pediatr* 1999, 4(1): 245-247.
13. Van Loon M. Colic With Projectile Vomiting: A Case Study *J Clinical Chiropr Pediatr* 1998, Aug; 3(1): 207-10.
14. Killinger LZ and Azad A. Chiropractic care of infantile colic: a case study. *J Clinical Chiropr Pediat* rVol. 3 No. 1 1998. P. 203-206.
15. Cuhel JM, Powell M. Chiropractic management of an infant patient experiencing colic and difficult breastfeeding: a case report. *J Clinical Chiropr Pediatr* 1997, 2(2): 150-154.
16. Pluhar GR, Schobert PD. Vertebral subluxation and colic: a case

study. *J Chiropr Res and Clin Investigation* 1991; 7:75-76.

17. Klougart N, Nilsson N and Jacobsen J. Infantile colic treated by chiropractors: a prospective study of 316 cases. *J Manipulative Physiol Ther* 1989 (Aug);12 (4): 281-288.
18. Jonasson AK, Knaap SF. Gastroesophageal reflux disease in an 8-year-old boy: a case study, *J Manipulative Physiol Ther* 2006 Mar-Apr;29(3):245-7.
19. Hains G, Hains F, Descarreaux M, Gastroesophageal reflux disease, spinal manipulative therapy and ischemic compression: a preliminary study [clinical trial], JACAOnline. 2007 Jan/Feb;44(1):7-19, *http://www.acatoday.com/content_css.cfm?CID=2253.*
20. Kase K. Clinical Therapeutic Applications of the KinesioTaping Method. Tokyo: Ken Ikai Co. Ltd. 2003: 1-4.