

# CASE STUDY

## Resolution of Colic in an Eight Week Old Infant Undergoing Chiropractic Care: A Case Study

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### Abstract

**Objective:** To report the outcome of chiropractic care using light impulse finger adjustments on an 8 week old infant who was diagnosed with infantile colic.

**Clinical Features:** An 8 week old female patient presented to the office with classic symptoms of colic. It was reported by the mother that the patient cried for up to 5 hours at a time and that she appeared to wince in pain upon making a bowel movement. The crying spells often lasted well into the night.

**Interventions and Outcomes:** The treatment protocol was limited to chiropractic spinal analysis using static, motion and muscle palpation followed by chiropractic care using light impulse finger adjustments in the supine and side posture positions. The segmental levels that were addressed were C1 and T11. Plan of care included 8 visits over 4 weeks. Improvements were seen after one visit and complete resolution of the symptoms were seen after 8 visits. After one year mom reports that the condition has not returned and the patient is a healthy, thriving one year old.

**Conclusion:** The case of an 8 week old infant with colic is presented. Significant improvement, followed by complete resolution of the condition was observed following the initiation of chiropractic care. More research is certainly warranted in the area of colic and the potential benefits of chiropractic care. The minimally invasive approach of chiropractic adjustments and results observed in the literature suggests that chiropractic could be included in the treatment protocols for infants who present with the condition of colic.

**Key Words:** *Chiropractic, vertebral subluxation, colic, infantile colic, adjustment, muscle palpation, somato-visceral, somato-autonomic, gastrointestinal*

### Introduction

Infant colic is characterized by episodes of inconsolable crying in a baby for which no apparent reason can be found. According to the University of Maryland Medical Center<sup>1</sup> infantile colic is suspected if the baby exhibits the following:

- Cries for more than 3 hours
- Generally the same time each day
- At least three days a week
- Baby pulls the legs up and makes tight fists when crying
- May exhibit a hard abdomen
- May burp and pass gas often
- The crying sounds are as though the baby is in great pain
- The baby spits up frequently after feeding.

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The diagnosis of Infantile Colic is often vague and inconclusive, often relying solely upon symptomatology, which are often dramatic and upsetting not only to the child but the family as well. Feeding and sleep become irregular and are frequently interrupted with episodes of intense crying. It is difficult to soothe the baby, no matter what the parents do.

Colic can be frustrating and upsetting for any parent and especially so for the new mom. It is emotionally distressing not being able to understand the reason for the crying and being unable to console the baby. Colic usually appears a few weeks after birth and continues until the baby is about three to four months old. It is important to exclude other reasons that may cause the baby's discomfort before coming to the conclusion that a baby has colic.

Obvious reasons for the baby's discomfort include hunger, being too hot or cold, being overtired or ill or sensitivity to foods.<sup>1,2</sup> Recent literature suggests the cause of many cases of Infantile Colic to be related to the infant spine<sup>3</sup> and that chiropractic care, specifically gentle spinal adjustments, to be an effective approach in treating the patient with colic.<sup>3-9</sup>

## Case Report

### *History*

An 8 week old female patient presented to the clinic with symptoms of colic which included crying for up to five hours. The crying often started at 10 am and would last well into the night, which persisted for 7 weeks prior to the first adjustment. The patient was unable to sleep or breastfeed due to the crying. The patient also exhibited signs of pain with bowel movements which is described as high pitched crying and wincing.

Often the patient would awaken during the night crying and in obvious distress or was unable to fall asleep. The patient also had diarrhea which was accompanied with screaming and crying. The patient was prescribed Hyoscyamine (marketed under the trade name Levsin) which is used to control symptoms associated with disorders of the gastrointestinal (GI) tract. It works by decreasing the motion of the stomach and intestines and the secretion of stomach fluids, including acid and is also used in the treatment of bladder spasms, peptic ulcer disease, diverticulitis, colic, irritable bowel syndrome, cystitis, and pancreatitis.<sup>10</sup>

### *Pre-natal History*

This was the mother's first child and she anticipated having a natural hospital delivery. At 20 weeks of gestation, the mother was diagnosed with Hydro-nephrosis, which is renal dysfunction resulting from renal compression or urinary tract obstruction, thus causing increased intra-tubular or intra-renal pressure and local ischemia.<sup>11</sup> It was later discovered during C-section that the baby's head was compressing her right kidney which was due to the baby being in a semi-transverse position. The mother was prescribed Hydrocodone (marketed under the trade name Vicodin) and several antibiotics for this condition.

### *Birth History*

The patient and her mother were in distress after 18 hours of labor and were transported to the emergency room where the mother was given ptocin to induce labor and an epidural for the pain. Other drugs prescribed in the ER were for nausea and migraine. The patient eventually delivered via cesarean section.

During the procedure the baby was found to be in a semi-transverse position with her head located on the left side of the pelvis and her back-side over mom's right kidney. A semi-transverse position during labor occurs when there is a failure of the baby to turn and engage in the birth canal which normally occurs at 34 weeks of gestation in two thirds of multiparous and 1/3 of nulliparous women.<sup>12</sup> The baby may fail to turn and engage in the birth canal for various reasons, one of which is utero-constraint.<sup>13</sup>

### *Chiropractic Examination and Findings*

The patient was crying and in obvious distress during her first visit. The patient was examined in the supine and side posture positions. The following spinal examination findings were recorded. Regarding the upper cervical spine, C1: slight hyper-tonicity of the superior oblique and C1-C2 inter-transverse musculature on the right; slight hyper-tonicity of the inferior oblique musculature on the left; posterior C1 TP upon static palpation; noticeable P-A inter-segmental motion restriction of the atlas on the right; visual inspection revealed slight left head tilt. Regarding the lower thoracic spine (T11-T12): slight hyper-tonicity of the right multifidus musculature at the T11/T12 vertebral level; posterior right T11 transverse process upon static palpation; noticeable inter-segmental motion restriction of the T11/T12 vertebral motor unit; right short leg; hyper-tonicity of the right thoraco-lumbar paraspinal musculature. Thus, examination findings revealed two areas of subluxation specifically C1 (atlas) which was found to be mal-positioned lateral and posterior on the right (RP Palmer-Gonstead); and T11 which was found to mal-positioned in right rotation (PL Palmer-Gonstead).

### *Intervention*

The first visit was as follows. Regarding the C1 (atlas) subluxation, the patient was placed in the supine position. The adjustment involved a series of 2 to 3 light impulses on the right postero-lateral aspect of the C1 transverse process with tip of the right index finger. The vector of correction was posterior to anterior, lateral to medial and slightly superior to inferior. Regarding the T11 subluxation, the patient was placed in a side posture position.

The adjustment was a series of 2 to 3 light impulses on the posterior aspect of the right transverse process of the T11 vertebra with tip of the right index finger. The vector of correction was posterior to anterior. The patient received chiropractic care consisting of 8 visits over the course of 4 weeks. On each visit, chiropractic spinal analysis was performed pre and post adjustment and adjustments were performed, as noted above, on each visit as clinically indicated.

## Outcomes

The patient, on her initial visit, was crying and in obvious distress. She left the office, after her first adjustment, crying less and with less distress. She was scheduled for a second visit on the following day. On this visit the patient was sleeping and there were no signs of distress. The parents reported the following: “after her first visit, she slept the entire night. She did not have the crying spells and we reduced the medication to once per day. After two weeks of chiropractic care the parents reported the following “she (the patient) no longer takes her medication daily. She is now a happy baby. She eats, sleeps and has regular bowel movements with no pain. For the first time since she was born, she slept through the night.”

Complete resolution of the colic symptoms was seen after 8 visits over 4 weeks. A follow up discussion with the patient’s parents found that the colic symptoms have not returned and the patient has been very healthy.

## Discussion

When adjusting newborns, forces used are very gentle with little or no spinal rotation. When a vertebral subluxation is corrected in newborns, segmental movements are very subtle and the familiar sound of joint cavitation is rarely heard.

There is evidence suggesting that chiropractic may be effective in treating a wide range of childhood ailments, including colic.<sup>3-9</sup> Research supports the expanding acceptance that there exists a vital relationship between the spine and the proper function of visceral organs and systems. Lewit observed the effects of compromised neural integrity, due to blocked nerves at the spine upon vital functions of the body.<sup>14-17</sup>

There is further evidence to support the correlation between chiropractic spinal adjustments of the thoraco-lumbar region and spino-visceral reflexes affecting function of the gastrointestinal system. Sato and Budgell,<sup>15</sup> in their work on somato-autonomic and spino-visceral reflexes, show evidence of a relationship between autonomic stimulation and autonomic nervous system function.

Somato-autonomic reflexes are elicited by stimulation of somatic tissue of the musculoskeletal system, as what occurs following a chiropractic spinal adjustment. The result is an alteration in autonomic system function. Spino-visceral reflexes are somato-autonomic reflexes in which stimulation is directed towards specific tissues associated with the spine. They further state that there are many autonomic neurons in the thoraco-lumbar region providing innervation to specific organs.<sup>15</sup>

Hipperson<sup>3</sup> reported on a case study in which a 7-week old male infant was diagnosed with colic, reflux, and sleep disturbances. It was noted in the case history that this infant had a traumatic birth and went into distress during the final hour. The baby received chiropractic care three times a week for three weeks. After the fourth visit, symptoms of colic significantly decreased and sleeping habits improved. After seven visits, the reflux had resolved.

Klougart et al<sup>8</sup> conducted a prospective multicenter study involving 316 infants with colic. The study found 94% of the participants improved following chiropractic care. The authors concluded that chiropractic care is effective in treating infantile colic. These are two examples of the many studies which have shown the positive effect of chiropractic spinal adjustments for the condition of infantile colic.

The practice of chiropractic, according to the Association of Chiropractic Colleges (ACC),<sup>18</sup> focuses on the relationship between structure, primarily the spine and function as coordinated by the nervous system, and how that relationship affects the preservation and restoration of health. The ACC further states that “Chiropractic is concerned with the preservation and restoration of health, and focuses particular attention on the vertebral subluxation.

According to the ACC: “Vertebral subluxation is a complex of functional and/or structural and/or pathological articular changes that compromise neural integrity and may influence organ system function and general health.” Vertebral subluxation compromises neurological function and is a factor which must be considered in all disease conditions. Conversely a healthy spine, free of vertebral subluxation, is essential for proper neurological integrity and thus, is an important factor in the function and health of the body.

Many in the health care community believe colic to be a self-limiting condition, resolving in 3–4 months.<sup>2</sup> However, Miller and Phillips reported that infantile colic, which continues for 3–4 months has lasting and adverse effects on a child’s psycho-social development.<sup>7</sup> Moreover, colicky infants cause strain in the family dynamic, which can have devastating consequences.<sup>19</sup> The increasing body of evidence showing chiropractic to be effective makes a case for inclusion of chiropractic care in treatment protocols for colic patients.

## Conclusion

This case report reveals an 8 week old patient whose symptoms of colic resolved soon after the application of gentle chiropractic care. This finding is consistent with other chiropractic literature that shows similar results.

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