

Excessively crying babies: are they all the same? Evidence-based case report

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ABSTRACT

A case report of a five-month-old infant suffering from infantile colic investigated different etiologies of cries and the application and efficacy of chiropractic management. Normalization of crying behavior was noted after a short trial of chiropractic therapy.

Keywords: pediatrics, colic, infantile, chiropractic, cry babies.

Introduction

Crying is the primary way infants express themselves. However, some infants will never settle, even when their needs appear to have been met and every method to soothe them has been trialled.¹

Consequences of incessant crying range from high levels of parental stress and postnatal depression to economical burden, due to high costs of treating these babies, as well as child maltreatment like Shaken Baby Syndrome which can result in brain damage.^{1,2}

Despite conscientious efforts to soothe the child, concerns for the infant drives parents to seek professional support. The incessant crying baby is the most common presentation to several healthcare professionals in the first sixteen weeks of life. Parents seek reassurance as well as an appropriate intervention that results in elimination or at least some reduction of presenting symptomatology. Chiropractors, or other alternative approaches, are usually sought after initial presentation to the pediatrician.^{1,2}

Case report

The parents of a five-month-old boy presented to a chiropractic clinic complaining of excessive and uncontrollable crying, a short attention span, and difficulties with sleeping. The excessive crying behavior was noted immediately after birth and the parents reported at least five hours of inconsolable crying a day, starting in the late afternoon and lasting until around 10 p.m.

Birth history revealed a difficult and exhausting birth process, which exceeded 30 hours and required ventouse vacuum intervention. Immediately after birth, the newborn required tube feeding due to low blood sugar levels. Tube feeding made breast feeding challenging as these babies of-

ten show defensive behavior around the mouth.³ The mother trialled breastfeeding for 7 weeks and then switched to formula feeding by bottle due to concerns that baby was irritable at breast and hungry after nursing.

After changing to formula, the infant began experiencing reflux, for which he was prescribed Gaviscon. Difficulties with flatulence were treated with Simethacone.

Clinical examination revealed tension in his right upper trapezius, right sternocleidomastoid and a left rotation restriction of T1. Significant muscle spasms and stiffness were noted throughout his spinal musculature and there was a slight restriction of the right sacro-iliac joint.

Visiting a chiropractor was the last attempt to find a solution for these parents. They had consulted several other healthcare professionals who diagnosed their concerns as colic and suggested that the infant would outgrow the condition by 3 months of age. At intake, the infant was 5 months old and was still experiencing the same symptoms.

This case report explores the evidence, investigates the distinctions between infant cries, and interrogates whether chiropractic therapy is an appropriate intervention.

Method

A search was conducted in April 2017 using Pubmed, Medline, Cochrane Database, the Index to Chiropractic Literature and the AECC Library. The following keywords were used: Excessive crying, infant, colic, chiropractic and outcome. In all, 1,045 articles were sourced and 16 articles were retrieved as relevant for this report.

The evidence

A single etiology for excessive infant crying is unknown.

Over time healthcare professionals have been able to differentiate potential etiologies for infant’s crying behavior. As a didactic tool, Halpern and Coelho,² used the following classification: 1) normal/physiological crying, 2) excessive crying, secondary to disease or discomfort/pain and 3) without an apparent cause, also referred to as colic. In recent times, colic has more frequently been called excessive crying of infancy.

The most well-known definition for colic was published in 1954 by Wessel: “Bouts of crying amounting to more than three hours a day for more than three days a week for more than three weeks.”⁴ The underlying cause of colic has still not been found. Some research suggested that it can be a manifestation of abdominal discomfort, allergy or psychological problems,⁵ while others suggest that there’s a strong biomechanical or neurophysiological component.⁶ The differential diagnosis includes:

1. **Colic:** This could better be characterised as infant nocturnal inconsolable crying syndrome, describing its chief characteristics, rather than trying to determine its etiology (Table 1). Colic crying usually begins in the first 7-10 days of life, results in long crying bouts at the end of the day, which is often inconsolable. However, feeding and sleeping are preserved in colic babies. It is far more common in babies having a difficult birth,⁷ which may give a hint to biomechanical or neuromusculoskeletal etiology and why chiropractic care has been shown to have some efficacy.⁸

- Several hours of crying predominantly in the late afternoon or evening
- Crying is often inconsolable, but for feeding
- Crying bouts begin at 7-10 days of age
- Baby sleeps well
- Baby feeds well
- Baby is healthy and growing
- Associated with difficult or assisted birth or very rapid birth process
- Manual therapy has shown some efficacy
- Is said to spontaneously resolve at 12 weeks of age, but this has been refuted by the research but likely occurs in a percentage of cases

Table 1. Features of the colic baby.

2. **Severe crying syndrome:** This is the severe end of the crying spectrum and has been termed irritable feeding crying infant with disordered sleep (IFCIDS).⁹ Again, it is merely a descriptive term that refers to the constellation of the features of this type of crying expressed by infants (Table 2).^{1,9} However, this may describe the extreme end of the colic crying scale or, more likely, it may be a regula-

tory disorder of the child since it involves poor feeding and sleeping as well as crying.

- High intensity cries, more common in evening but often occurs throughout the day as well
- Feeding problems
- Sleep disorders
- General irritability, baby is never happy
- Paroxysmal fuss, cry patterns that are difficult to console
- 1-9 months of age
- More common in males than in females (60:40)

Table 2. Features of the IFCIDS (irritable feeding crying infant with disordered sleep) baby⁸

3. **Excessive crying of disease** represents less than 5% of cry babies. However, the first rule is always to rule out any serious illnesses or pathologies. It is important that the signs of illness are referred immediately to an appropriate health care professional if they present. Signs of illness are seen in Table 3.¹

- Lethargy
- High fever
- Central cyanosis
- Dehydration
- High respiratory rate
- Tender abdomen
- Bulging fontanelle
- Projectile vomiting
- White tongue + red rash
- Growth chart irregularities
- Non-blanching rashes and purple spots
- Excessive drooling + difficult swallowing

Table 3. Signs of serious illness or pathology¹

Cow’s Milk Protein Intolerance (CMPI) and Gastro-Esophageal Reflux (GER) are commonly diagnosed in babies that show excessive crying behavior as part of the pain of those disorders and shouldn’t be diagnosed as ‘colic’ as they have a known etiology.^{1,4,10}

4. **Musculoskeletal dysfunction** such as the Irritable Infant Syndrome of Musculoskeletal Origin (IISMO)⁸ and Kinematic Imbalance due to Suboccipital Strain (KISS)¹¹ belong to this category. This is the type of child that cries a great deal due to uncomfortable posture. They are consolable as soon as they reach a comfortable (termed antalgic) position. The underlying cause is biomechanical dysfunction which may be linked to a difficult birth process and possibly to

intra-uterine constraint or interventions such as forceps and ventouse. It is important that infants in this category receive treatment to relax their physical discomfort as in most cases they do not like sleeping supine and thus they do not meet the back-to-sleep programme set by government guidelines to reduce the risk of Sudden Infant Death Syndrome (SIDS). Chiropractors have demonstrated some success in treating babies to improve supine sleep.¹²

Is chiropractic manipulation effective for the excessive crying baby? A 2012 Cochrane review⁸ identified six randomized controlled trials evaluating the efficacy and effectiveness of manipulative therapies for infantile colic. Four of the trials were chiropractic interventions; two were osteopathic. Overall the studies concluded that manipulative therapy had a significant effect to reduce the daily hours of crying. The amount of daily crying was reduced by more than one hour. Additionally, there was a positive change in the duration of sleeping. One study stated that chiropractic therapy and placebo have the same effect. However, the overall effect was beneficial to reduce crying in the baby. Cochrane concluded that there was moderate evidence that manual therapy treats colic successfully and that more research is needed.

A prospective cohort study in 2012 investigated whether there was a difference in outcome between colic, IFCIDS and IISMO infants that have been treated with chiropractic manipulation. The study documented that in those infants considered to have a preponderance of musculoskeletal dysfunction (IISMO and colic) the average level of overall improvement was higher compared to the IFCIDS group.⁹

All previous studies looked mainly at the short-term effects of chiropractic treatment, but a British study in 2009 investigated the long-term effects of infant colic on a toddler. They compared two groups of children, one group of toddlers that had been treated successfully for infant colic by chiropractors during their infancy whereas the other group didn't receive any manual therapy. Results reported that untreated post-colicky infants demonstrated more negative behavioral patterns at two to three years of age.¹³ Parents of infants who have been treated with chiropractic care reported less difficulties with behavior as well as sleep patterns of their toddlers. All of this suggests that chiropractic treatment may have an effect on long-term sequelae or that treating it early may have longterm effects.¹³

It must be noted that there is little or no evidence, certainly no randomized controlled trials or literature reviews, on the effects of chiropractic treatment on infants older than three months who have been diagnosed with colic, IISMO or IFCIDS or any excessive crying syndrome.

Everyone is unique – Babies with excessive crying shouldn't be seen as a homogenous group but should be evaluated individually and should receive specific treatment based on their particular needs.⁹ More research is required to confirm that chiropractic therapy can reduce colicky symptoms, especially in infants over the age of three months.

Clinical implications

Different types of excessive crying require different approaches. Parents seek help from several different health-care professionals, until they get help or give up. Chiropractors may be the last resort and thus they may face the more complicated cases of the incessant crying infant. Being able to differentially diagnose the etiology for baby's cry is an essential skill for chiropractors so that only babies with a biomechanical irritation are treated and the others are sent to appropriate clinicians. The question, 'is infant colic an allergic response to cow's milk?' was asked by Miller and Hellstenius.¹⁰ This suggests that excessive crying can be more than a musculoskeletal problem and appropriate care is required. Further research into clinical implications of excessive crying is required as it is known that excessive crying in infants has a negative impact on infant-mother bonding, family life and behavioral patterns in older children.^{13,14}

Applying the evidence

Despite all efforts to soothe their child, concerns that their child is in pain or something is wrong with their infant drives at least 21% of families in the UK to seek care.¹⁴ This family had sought many types of care before presenting to the chiropractor. After the history and examination procedures, the parents were informed that the myofascial and articular restrictions identified were consistent with the infant's difficult birth process. They were informed of the current research that demonstrated that pediatric spinal manipulation in newborns up to the age of eight weeks was often successful to significantly reduce crying time if they presented before the age of six weeks. Because their child was five months old, and had already adapted to his situation, a short therapeutic trial was recommended to determine any benefit.

The parents consented to a trial of chiropractic treatment for their child. After five treatments over five weeks, both parents reported that their child was a lot more relaxed, he could settle to entertain himself, was less irritable, and his crying had reduced to the normal unit of less than two hours a day. The parents were very happy with the change, but we could not declare that the chiropractic therapy was the cause.

By its nature, a case review has severe limitations. It is a context-dependent observation so the positive results could represent spontaneous resolution. Also, the parents were

not blinded to treatment so their reported outcomes could be biased. Further, the medications that the child had been taking for over five months could have started to work after the chiropractic treatment began. However, in this non-standard care of excessive infant crying, that hadn't resolved in five months, a brief trial of chiropractic manipulation resulted in the desired outcome for the parents.

It can be concluded that there are different etiologies of excessive crying, each related to different underlying concerns. Even though the research isn't unanimous about whether chiropractic care does have a positive effect on ex-

cessive crying, there is evidence to suggest that chiropractic care is safe for the infant¹⁵ and that taking an excessively crying infant to a chiropractic will result in fewer hours of crying.¹⁶

Conclusion

There was insufficient evidence to apply to this case, so I proceeded with the parents's consent, with a trial of manual therapy. When a treatment is safe, a clinical trial to try to help the family is an appropriate way forward. Further research is required to document the etiology, the clinical implications and appropriate care for the different presentation of excessive crying in infants.

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