CASE STUDY

Resolution of Chronic Constipation in an Infant Undergoing Chiropractic Care: A Case Report & Selective Review of Literature

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Abstract

Objective: To report on successful chiropractic care in the case of an infant with constipation.

Clinical Features: A nine month old infant was presented for chiropractic care. She developed constipation after her mother stopped breastfeeding. Upon examination, subluxations were revealed at atlas and sacrum.

Interventions & Outcomes: Diversified full spine protocol was utilized and adjustments were administered when warranted. She was seen one time per week. After the first adjustment, her mother reported an increased frequency of bowel movements. By the third week her mother reported only occasional constipation. After five months of care the constipation had resolved.

Conclusion: The patient in our case showed improvement in the symptoms of chronic constipation after one chiropractic adjustment. After five months of care the constipation resolved. The results in this case suggest that chiropractic adjustments might have a positive effect in the management of chronic constipation in children, however more research is warranted.

Key Words: Constipation, chiropractic, diversified technique, subluxation, pediatrics

Introduction

Constipation is identified clinically as reduced frequency of defecation, painful or difficult bowel movements and hard stool consistency. Constipation is defined as “the slow movement of feces through the large intestine.”¹

Chronic constipation is among the most common digestive complaints in the United States, seriously impacting national health status.² The highest incidence occurs among the pediatric and the geriatric populations. A common misconception regarding constipation in children is that it gradually resolves at the time of puberty; however, studies suggest that in 50% of pediatric constipation cases the symptoms become chronic. The chronicity of the condition may significantly interfere with the emotional growth and development of the child.³

It has been reported that in cases of onset within the first year of life, 63% of patients continued to have symptoms for 5 years.⁴ It is also suggested that in 30% of cases the symptoms become intractable.⁵

Chronic constipation is the most common chief complaint to pediatricians and accounts for 30% of all visits to pediatric gastroenterologists.⁶ The commonly prescribed treatments include laxatives, dietary and behavioral modification, biofeedback, and disimpaction.⁶ The standard treatment

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protocols are based mainly on clinical results and not on evidence based studies.3

The major cause of constipation is believed to be an inadequate fiber intake; however, there is little evidence to support this, given the marked differences observed between gender, race, and socio-economic status.7 Many pediatric patients do not respond to treatment, suggesting that the exact pathophysiology of constipation in children is not known.6

Case Report

History

A nine month old Hispanic female was presented by her mother with a chief complaint of constipation for chiropractic consultation. Her mother advised that she had been suffering from constipation since she stopped breastfeeding, about 5 months prior. Her mother advised that she would go up to two days without having a bowel movement, which resulted in straining when she did need to defecate. The mother described the feces as hard and dry. Upon further questioning, it was revealed that she had been on several different formulas since the mother stopped breastfeeding. These formulas included Similac, Alimentum, Enfamil, and Nutramigen.

Health history revealed she was the 4th child. She was birthed via an induced labor at 42 weeks of gestation. Her weight at birth was 8 pounds and 5 ounces; length was 20 ¼ inches. No forceps were used during the delivery. She was born with a heart murmur. She also had a history of ear infections.

She had two falls, one three months before starting care, when she fell from a stroller. The second fall occurred three weeks after starting care, when she fell from a sofa.

Examination

Physical examination disclosed a normal developing, well nourished Hispanic infant. She had a ¼ inch functional short left leg in the supine position. Subluxations were revealed in the atlas and sacrum vertebra using palpation. Range of motion restrictions were noted upon rotation, flexion and extension. Taut and tender fibers were present at the atlas and sacrum. Gluteal deviation was observed.

Intervention

The care plan consisted of once a week visits. Adjustments were administered at atlas and sacrum when warranted. Full spine diversified technique was utilized each visit, but was adapted to be age appropriate for the patient. The atlas adjustments consisted of sustained contact. Adjustments at sacrum involved a series of High Velocity, Low Amplitude Thrusts (HVLAT). Observation of the gluteal folds was used to determine side of sacral fixation and contact.

Outcomes

After the first adjustment, the patient started to have more frequent bowel movements, but the feces were still hard and dry. After the second adjustment, the mother consulted her pediatrician whom prescribed Miralax, a fiber powder that seemed to be helping with the constipation. At this time several fruits were introduced into the patient’s diet.

Three weeks into her care, the mother reported some occasional constipation. Five months after the start of care the mother reported that patient was doing well with more frequent, softer and normal stools. She reported the constipation had completely resolved.

Discussion

Literature suggests there is a direct correlation in the anatomy and physiology between the sacrum and the large intestine. We propose two possible mechanisms as to how the adjustment may have helped in the resolution of the constipation. The first mechanism encompasses the idea that the sacral adjustment had a direct impact on the peristalsis of the large intestine, resulting in an increased frequency of bowel movements.1,12 The rectum is positioned anterior to the sacrum therefore a sacral adjustment may result in anterior motion of the rectum. This could cause a mechanical distention of the rectum.

When the myenteric plexus receives the stimulus, this could increase peristalsis. As peristalsis approaches the anus, the internal anal sphincter relaxes to allow defecation to occur. It must be noted that the external anal sphincter, as it is under voluntary control, was not taken into consideration as the infant was not toilet trained. The defecation reflex is fortified by the parasympathetic defecation reflex.12

The second possible mechanism stems from the fact that the adjustments of atlas may also have had an effect on the resolution of the constipation in this patient. According to Gray, fibers from the terminal division of the posterior Vagus nerve reaches the small and large intestines as far as the splenic flexure.1 Therefore, adjustments of atlas may affect the function of the Vagus nerve.1,10

In this case, atlas and sacrum were both adjusted therefore affecting the parasympathetic nervous division of the autonomic nervous system. The parasympathetic division arises from cranial nerves and from sacral spinal levels S2 to S4. It is involved in more sedentary functions, such as increasing gastric secretions and peristalsis.13

Review of Literature

A review of the chiropractic literature revealed several cases of resolution of constipation while undergoing chiropractic care.8,11,14-21 This supports the notion of chiropractic care as an alternative approach to manage constipation in infants.

Studies have indicated that chiropractic care yields positive outcomes in cases of pediatric constipation. Marko8 described the case of a 10 month old female who suffered from constipation after transitioning to solid foods. After being treated using Chiropractic Biophysics Technique, her symptoms improved.8

Quist and Duray reported resolution of constipation in an 8-year-old male after treatment with diversified adjusting technique and abdominal massage.9 In another study, Eriksen...
reported improved bowel function in a 5-year-old with chronic constipation after using Grostic technique.\textsuperscript{10} Hewitt also reported a case of a 7-month-old with chronic constipation, in which bowel function returned to normal after treatment with full spine and cranial adjusting.\textsuperscript{11}

Redly reported on the case of an elderly patient with chronic constipation that resolved under care. This patient reported having bowel movements from zero to three times a week. She was adjusted primarily in the lumbar spine with high velocity, low amplitude diversified adjustments for five weeks.\textsuperscript{14}

Duray and Quist reported on a case of an 8 year old whose constipation was resolved after a month of utilizing Thompson assessment and adjustments at the S2 tubercle. Thirteen years after treatment, the patient was still having normal bowel movements. Their proposed mechanisms included the fact that the sacral adjustment directly affected the pelvic splanchnic nerve. As the fibers course through the sacral canal as part of the cauda equina they emerge from the pelvic sacral foramina as part of the anterior primary rami of S2, S3 and S4; misalignment of the sacrum can cause traction of the nerve.\textsuperscript{9} The other possible mechanism is related to segmental facilitation. They referred to Korr's hypothesis that somatic dysfunction may affect the functioning of viscera innervated by the same segmental levels.\textsuperscript{9}

Eriksen discussed the effect of upper cervical care in a five year old with constipation. She was adjusted using the Orthospinology procedure and experienced a bowel movement the next day without the use of medication. The patient started experiencing 4-6 bowel movements per week instead of one bowel movement per week with the aid of medication. He proposed that spinal cord traction could cause irritation of the hypothalamospinal fibers of the spinocerebellar tracts resulting in altered parasympathetic nerve function.\textsuperscript{10}

Alcantara\textsuperscript{15} reported on the successful chiropractic care of pediatric patients with constipation in a case series. The first infant was 21 months old suffering with constipation since birth and bowel movements every 3-4 days. The feces were described as hard and large causing rectal bleeding. The patient was adjusted using high velocity, low amplitude thrust and activator technique. The treatment plan consisted of being seen three times per week for three weeks. After two months of care, the infant was experiencing regular bowel movements, but the feces were still hard. This was the case until dairy and wheat were removed from his diet.

Alcantara also discussed a 7 month old female with a complaint of constipation since she was 2 months old, in the case series. The mother described the feces as hard and pellet like. Her care plan required two visits per for three weeks. The patient was adjusted with the Activator at atlas and right ilium. At the second visit, her mother reported that she was having bowel movements without straining every 1-2 days.\textsuperscript{15}

The last case in the series reported on a 21 month old female with encopresis and severe constipation with bowel movements once a week since the age of 10 months. The patient was adjusted using high velocity low amplitude thrust at L4 and L5 vertebral subluxations. This resulted in an immediate bowel movement. The constipation was resolved within three months.\textsuperscript{15}

In a review of the literature, Holbrook compared the results from six different cases and concluded that “a chiropractor treating a patient with childhood constipation should see results following the first adjustment up to one week following the first adjustment. Constipation in a child should be resolved in 1-3 weeks depending upon the underlying condition and possibly the age."\textsuperscript{15,16}

More recent case studies have been documented in the literature as well that display successful chiropractic care in the treatment of constipation.\textsuperscript{17-21}

Batte reported on the case of a two week old male with a history of abdominal distention, constipation, gas, sleep disturbances, and excessive crying. Upon commencing chiropractic care using Logan Basic technique, he had an immediate bowel movement. By the 16th adjustment, it was reported that he was having regular bowel movements.\textsuperscript{17}

Alcantara and Davis reported similar results in two of their cases as well.\textsuperscript{18,19} Chiropractic care proved to be successful when treating a 7 year old male and a neonate with constipation. The elder case had this complaint for several years prior to seeking care. Although, the constipation was chronic, upon commencing care, he immediately experienced a bowel movement. On the 4th visit, his mother reported that his medical check-up showed clear intestines; this was a first in a long time. It was noted that when he went 10 days without care, the frequency of the bowel movements decreased. But upon returning to care, regular bowel movements resumed.\textsuperscript{18}

In another case, an 11 week old male was presented for care with complaints of excessive crying and constipation. Gonstead technique was utilized to address subluxations at atlas and sacrum. On the second visit, the mother advised that he had his first bowel movement without assistance following the first adjustment. Over a 10 week period, he attended 14 visits, which yielded a positive outcome. He was having several bowel movements a day.\textsuperscript{19}

Similar results were also reported by Horkey who reported on the successful chiropractic care of a 6 year old female with constipation.\textsuperscript{20} Swaminathan and Hanson also reported on improvements in a child with gastroesophageal reflux disease, constipation, and deformational plagiocephaly following chiropractic care.\textsuperscript{21}

The patient in our case showed improvement in the symptoms of chronic constipation after one chiropractic adjustment. After five months of care the constipation resolved. The results in this case suggest that chiropractic adjustments may have a positive effect in the management of chronic constipation in children.

**Conclusion**

Successful chiropractic care was described in the case of a nine month old infant with constipation. More research to investigate the effectiveness of chiropractic care for...
constipation in children and infants is warranted.

Reference