

THE REDUCTION OF ASTHMA SYMPTOMS AND MEDICATION AFTER CHIROPRACTIC CARE

Thomas A. Brozovich D.C.¹

¹ Clinical Sciences, Palmer College of Chiropractic, Davenport, IA USA

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ABSTRACT

Objective: To discuss the chiropractic management of a patient with asthma who was treated using chiropractic care.

Clinical features: A 5-year-old male with a history of asthma for 3-1/2 years sought chiropractic care for his asthma symptoms, which included tightness of the chest, shortness of breath, nasal congestion, and nonproductive cough that were not responding to allopathic treatment.

Intervention and Outcome: He was adjusted based on location of his subluxations (intersegmental joint dysfunction). He had 5 treatments over 3 days. Treatment consisted of chiropractic adjustment to the cervical and thoracic region. We observed a quick and drastic reduction in his symptoms and he has been able to reduce all of his medication over the next few months with the exception of a rescue inhaler of albuterol, which he needs only infrequently.

Conclusion: The patient responded favorably to chiropractic care, which resulted in almost complete reduction of his asthma symptoms. (Chiropr J Australia 2017;45:138-143)

INTRODUCTION

A 5-year-old patient receiving chiropractic care for asthma symptoms is not common. According to the National Center for Health Statistics, approximately 12% of US children use some type of alternative therapy. About 3% used manipulation therapy. Asthma was identified as one of the 10 most common conditions for which US children under the age of 18 sought alternative therapy.(1) A systematic review of chiropractic care for non-musculoskeletal conditions suggested that chiropractic care provided benefits to patients with asthma. (2) The chiropractor's treatment is typically intended to reestablish joint function, reduce inflammation, decrease nerve irritation/compression and to reestablish homeostasis. On occasion, symptoms other than musculoskeletal symptoms may respond to chiropractic care. In a study of 36 subjects ages 6-17 with asthma symptoms who received chiropractic spinal manipulative therapy in addition to their medical co-management revealed that pulmonary function tests, quality of life questionnaires, asthma severity, peak flow measurements, and symptoms all improved after 3 months of active chiropractic care. (3)

Asthma is a complex disease with many presentations. It presents difficulty in making an accurate diagnosis in young children. (4) Symptoms of asthma frequently began at a very early age. Asthma with genetic etiology is less likely to respond to care. Asthma due to environmental reasons is more likely to respond to complementary and alternative medicine. Cytokines regulation which control the production of IgE and polymorphisms in genes appear to be genetic factors in asthma. (5)

Exposures to environmental factors early in life appear as a major role in the maturity of the immune system. Exposure to microbial products, foods, allergens, stress, and infections at an early age matures the immune system and makes allergies less likely. (6,7) Manual manipulative therapy has been shown to be complementary to pharmacological therapy and to help in the management of respiratory diseases. (8) A study using questionnaires to assess the use of chiropractic care for asthmatic children found that chiropractic care did improve quality of life and reduce asthma severity. (9) The most common symptoms associated with asthma are tightness in the chest, shortness of breath, coughing, wheezing, and mucus production. (10) The origin of the word *asthma* was coined by Hippocrates, from the Greek word *asthaino*, meaning to gasp for breath. (11)

CASE REPORT

A 5-year-old male accompanied by his mother sought care for asthma symptoms. He had begun experiencing difficulty breathing, gasping for air, nasal flaring and chest retraction when he was 16 months old. He was seen by his pediatrician and was initially given antibiotics. After multiple trips to the pediatrician, the mother felt the antibiotics were not helping. She decided to take him to a second pediatrician, who diagnosed him with asthma. He was then placed on theophylline, steroids, and an albuterol inhaler. He had been hospitalized multiple times for 3-4 day periods so he could undergo breathing treatments. This treatment continued from age 16 months through 5 years old. The parents were performing breathing treatments at home daily and were worried about maintaining 4 breathing treatments a day when he begins attending school. The parents decided to bring him in for evaluation and chiropractic care.

The child was a 40", 32 pound, 5-year-old male. Review of systems revealed: hot and dry skin, temperature 102° orally; otoscopic exam revealed red, inflamed, bulging, tympanic membrane bilaterally. Internal nasal exam revealed inflamed edematous mucous membrane with excessive yellowish mucus formation. His throat was mildly red with noticeable postnasal drainage. Auscultation of the lungs revealed normal breath sounds with a nonproductive cough noted throughout the exam. Palpable lymph nodes were noted in the anterior and posterior cervical region. Chiropractic exam using instrumentation, static and motion palpation revealed subluxations at C1 and T3. The remainder of the examination was negative.

Management and Outcome

Initial treatment consisted of: 5 treatments over 3 days. Treatment consisted of chiropractic manipulation to the cervical and thoracic region based on location of subluxations (intersegmental joint dysfunction). The dysfunction identified of C1 was a right superior lateral fixated displacement, indicating an ASR listing. The dysfunction identified on T3 was a right posterior superior fixated displacement, indicating a PRS listing. C1 and T3 were noted to have decreased range of motion during motion palpation exam. We adjusted the subluxations located at C1 and T3. We utilized a cervical chair, Gonstead technique for adjusting C1. T3 was adjusted using prone single-hand contact, Gonstead technique.

Following the first adjustment, we saw a drop in the fever from 102° orally down to 99.8° orally in 4 hours. Over the next few days we saw a complete reduction and normalization of the fever to 98.6°. We also saw complete reduction of the red, inflamed, bulging, tympanic membrane bilaterally. Internal nasal exam revealed normal mucous membrane with normal mucus formation and color. The throat revealed no redness or postnasal drainage. Auscultation of the lungs revealed normal breath sounds. His mother stated that there was a considerable decrease with his nonproductive cough and he was sleeping better at night. The patient was brought in by his mother periodically when mild symptoms appear to be returning. Chiropractic care was rendered during these mild exacerbations and helped reduce the symptoms before they became severe and he needed medication.

After seeing the improvement in her child over several months the mother spoke with her pediatrician and explained the improvement and changes following chiropractic care. Some resistance was felt by the mother from the pediatrician but he discontinued the theophylline, albuterol inhaler and suggested only using albuterol as a rescue inhaler. Since the first year of chiropractic care his need for his rescue inhaler has been extremely rare and seems to be primarily during increased physical activity only.

DISCUSSION

The patient's history, symptoms, and physical exam findings agreed with the medical's doctor's diagnosis of asthma. He was been diagnosed with asthma medically at 16 months of age. He had been treated medically with theophylline, steroids, albuterol inhaler and breathing treatments from the time of his initial diagnosis through the beginning of chiropractic treatment. During that time the mother indicated there was really never any indication that his condition was improving. Only after initiation of chiropractic care did the mother feel that there was a considerable change to the better in his condition. This improvement was confirmed by the reduction of symptomatology seen in the first week of chiropractic care. Since that time the periodic exacerbations that he experienced resolved prior to the need of medication under chiropractic care.

This case raises questions related to the underlying etiology of his asthma. There are multiple causes of asthma, including both genetic and/or environmental causes. How might chiropractic care lead to change in his asthma symptoms without the change of

any other medical treatment? Parasympathetic nerve fibers originating from the vagus nerve penetrate the lung parenchyma. When these nerves are activated they secrete acetylcholine and cause bronchoconstriction. Asthma, with its increased autoimmune response causes bronchiolar constriction and superimposed parasympathetic stimulation can worsen the condition. (12) Chiropractic manipulation may affect the autonomic nervous system. Misalignment of the spine may cause localized spinal segmental reflexes affecting both the brainstem and the upper and lower motor neurons of the spine and their synapses. (13)

The presence of subluxation may have impacted the patient's asthma. We saw nearly immediate changes following the initial chiropractic adjustment and almost complete resolution of his asthma symptoms in just 3 days.

In the trachea and bronchi not occupied by cartilage plates, and the bronchioles, the walls are composed mainly of smooth muscle. Many obstructive diseases of the lung are from excessive contraction of the smooth muscle. Conditions also causing restriction include edema occurring in the walls, and mucus collection in the lumen. If subluxation complex causes compression of the sympathetic innervation of the bronchiolar musculature and bronchial tree, the result would be bronchial constriction. Sympathetic stimulation of the adrenal gland will lead to the release of norepinephrine and epinephrine, which causes dilation of the bronchial tree. Subluxation at T7-T11 causes compression of the sympathetic nervous system and a subsequent decrease in formation of norepinephrine and epinephrine in the blood, resulting in constriction of the bronchial tree. A subluxation complex at C1 will have the same result if the subluxation at C1 causes irritation to the parasympathetic nerve fibers. These parasympathetic nerve fibers, derived from the Vagus nerve, penetrate the lung parenchyma and causes constriction of the bronchioles. These parasympathetic nerves secrete acetylcholine, which causes constriction of the bronchioles. When irritation occurs to these parasympathetic nerves, an increase in nerve activity, signal, occurs, which would result in constriction of the bronchioles. (12)

The sympathetic nerves at the level of T2-T4 innervate the bronchi. A subluxation at T3 causing compression of the sympathetic innervation to the lungs causes the lungs to become more sensitive to norepinephrine. This phenomenon is called denervation supersensitivity. Following sympathetic denervation to the lungs, denervation supersensitivity causes the blood flow to decrease much more than before sympathetic denervation in response to norepinephrine. The blood vessels become 2-4 times as responsive to norepinephrine following denervation. Subluxation causing sympathetic innervation loss to the lungs will also cause direct control of the bronchioles and result in bronchoconstriction. (12, p.729)

CONCLUSION

This case study of a 5-year-old male with asthma following chiropractic treatment suggests that his asthma symptoms were reduced and controlled with chiropractic care. The quick and sudden change following chiropractic treatment eliminates natural

history, which is seen sometimes in the allergenic type asthma cases where children outgrow the asthma. He was able to reduce the use of medications and demonstrate that chiropractic care reduced the chances of the symptoms worsening during episodes of exacerbation. Further investigation is warranted.

REFERENCES

1. Barnes PM, Bloom BS. Complementary and alternative medicine use among adults and children: United States, 2007 National Health Statistics Reports, 12 (2008), pp. 1-24
2. Hawk C, Khorsan R, Lisi AJ, Ferrance RJ, Evans MW. Chiropractic care for nonmusculoskeletal conditions: A systematic review for implications for whole system research. *J Altern Complement Med* 2007;13:491-512
3. Bonfort G, Evans R, Kubic P. Chronic pediatric asthma and chiropractic spinal manipulation: A prospective clinical series and randomized clinical pilot study. *J Manipulative Physiol Ther* 2001;24:369-377
4. Martinez F, Wright A, Taussig L. Asthma and wheezing in the first 6 years of life. The Group Health Medical Associates. *N Engl J Med* 1995;332:133-138
5. Gern J, Lemanske R. Infectious triggers of pediatric asthma. *Pediatr Clin North Am* 2003;50:555-575
6. Taussig L, Wright C, Holberg C. Tucson children's respiratory study: 1980 to present. *J Allergy Clin Immunol* 2003;11:661-675
7. Bisgaard H. The Copenhagen Prospective Study on Asthma in childhood (COPSAC): design, rationale, and baseline data from a longitudinal birth cohort study. *Ann Allergy Asthma Immunol* 2004;93:381-389
8. Noll DR, Shores JH, Gamber RG, Herron KM, Swift J. Benefits of osteopathic manipulative treatment for hospitalized elderly patients with pneumonia. *J Am Osteopath Assoc* 2000;100:776-782
9. Bronfort G, Hass M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. *Chiropr Osteop* 2010;18:3
10. Blum CL. Role of chiropractic and sacro-occipital technique in asthma treatment. *J Chiropr Med* 2002;1:16-22
11. Monti RL. Mechanisms and chiropractic management of bronchial asthma. *Dig Chiro Econ* 1981;24:48,50-51
12. Hall J. Guyton and Hall textbook of medical physiology, 12th edition, 2011:465-475
13. Gibbs AL. Chiropractic co-management of medically treated asthma. *Clin Chiropr* 2005;8:140-144