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SEVERE CHRONIC ASTHMA: CHIROPRACTIC CARE IN A PEDIATRIC CASE

INTRODUCTION

Asthma is a respiratory system dysfunction, essentially an inflammation of the lungs which results in chronic breathing difficulty. It is characterized by variable and recurring airflow obstruction secondary to mucous production by the respiratory epithelium and bronchospasm. The common symptoms are shortness of breath, coughing, tightness in the chest and expiratory wheezing. There are multiple factors suspected to be involved in the etiology. Environmental, genetic, emotional and nutritional factors have an impact. [1] The word asthma, coined by Hippocrates, originates from the Greek word asthaino, meaning to gasp for breath or to pant. [2] The disorder is categorized as either 1.) extrinsic, allergic or 2.) intrinsic, nonallergic asthma. Extrinsic asthma accounts for about 90% of all cases and typically develops in children. In North America the condition affects about 7 million people between the ages of 5 and 14. It is the most common chronic illness in the pediatric population. It affects males twice as frequently as females among younger patients. There is a significantly higher rate of asthma in African-American and Hispanic children than in Caucasian children. Although the exact etiology of the condition is unknown, environmental triggers and genetic factors are known to be involved. Children whose parents have asthma are more likely to develop it themselves. There are studies that suggest that allergies contribute to a greater risk for developing asthma in children. Extrinsic asthma can be triggered by exposure to allergens such as plant pollen, molds, animal dander, and dust mites. Irritants to lungs can induce asthma or
aggravate an attack. There is evidence that food allergy is associated with an increased risk of asthma. [3] Exposure to smoke increases airway responsiveness and leads to an increased risk, especially in infants. There is evidence that the respiratory syncytial virus, which is the major cause of infant pneumonia, is implicated in the development of asthma. However; this infectious causal agent is an exception. In fact, it is proposed that early respiratory and intestinal infections may offer some protection against asthma. [4]

Severe asthma in children is diagnosed when any combination of chronic symptoms, acute severe exacerbations and persistent airflow limitation are present despite the prescription of multiple therapies. [5] If symptoms strongly suggest asthma, pulmonary function tests for vital capacity, peak expiratory flow rate and forced expiratory volume are performed to confirm the diagnosis. Testing is not typically used on children under the age of 2 years.

CASE PRESENTATION

Case History: In this case, the diagnosis of severe asthma was made when the patient was 17 months of age. The severity of the symptoms was such that the diagnosis was made without the use of testing. The pediatrician ruled out the possible co-morbidities of personal or family emotional and psychosocial disorders. The involvement of allergens and respiratory irritants in the home, such as smoking was ruled out, to the extent possible. This patient first developed breathing difficulties at the age of 9 months. The initial diagnoses included upper respiratory infection and middle ear infection. Antibiotic medication was prescribed on 6 different pediatrician visits. None of the medications proved effective for the breathing symptoms of wheezing and cough. Beginning at age of 1 year, the patient was treated for acute respiratory distress in the hospital emergency
room once each month. He was referred to a pediatric pulmonary specialist who made the diagnosis of severe asthma. Antibiotic and steroid medication was prescribed and breathing treatments were recommended for acute attacks. He continued to have persistent symptoms and acute episodes.

**Chiropractic Evaluation:** A 19 month old child was presented for chiropractic care by his parents with concern about the lack of improvement from severe chronic asthma symptoms. At the time he was experiencing constant breathing difficulty with exacerbations 1 to 2 times per week of varying severity. The patient appeared well nourished and showed no signs of developmental delay. The physical examination revealed wheezing and rapid respiration. Chiropractic examination revealed functional leg length inequality (FLLI), unilateral hypertonic paraspinal musculature, a persistent head tilt and thermal imbalance over the first cervical vertebrae (C1).

**Radiographic Imaging:** A neutral lateral cervical view and a nasium x-ray view were taken for assessment of osseous relationships using an upper cervical line-drawing analysis according to the Orthospinology technique.

**INTERVENTION AND OUTCOME**

The patient was seen on 18 visits over a seven month period. Specific adjustments were performed with contact over the transverse process of the first cervical vertebra (C1) utilizing the Orthospinology technique adjusting vectors with the KH 4 electric instrument. Postural distortion, thermal measurement at C1 and FLLI analysis was performed pre and post adjustment. The patient was adjusted on 6 of the 18 visits. Breathing difficulty began to reduce after 8 days. The frequency of episodes reduced to 1 per week after 5 weeks. The episodes of breathing difficulty were mild and less than 12
hours in duration. After 9 weeks there were no further episodes of wheezing, coughing or difficult breathing reported.

DISCUSSION

There are a growing number of studies published in the literature in which chiropractic care is shown to have a positive effect for patients with asthma. [6,7,8,9,10] There were no studies found involving patients as young as 19 months. Thus far clinical trials have not been conclusive in providing evidence to support the link between improvement of asthmatic symptoms and chiropractic interventions. [6] Most studies show results limited to reported and observed subjective symptomatic improvement. In a 2005 study, Gibbs reported subjective and objective improvements. Patients who were being treated by conventional pharmacological means had chiropractic manipulation added to the treatment which resulted in breathing capacity improvements based on peak flow meter results. [7] Although asthmatic symptoms can occur without a recognized allergic mechanism, immunoglobulin E (IgE) mediated inflammation is almost always associated. It is not known for certain why some individuals become asthmatics, while others who may be exposed to the same environmental factors do not become symptomatic.

Psychological and or physical stress is hypothesized by some researchers to be the causal agent. The stress response is associated with an increase level of circulating cortisol, resulting in immunity reduction and increased smooth muscle contractility. A reduction of immunoglobulin A (IgA), associated with respiratory epithelial lining, further increases susceptibility to smooth muscle spasm. Inhibition of catecholamine uptake compounds the condition of increased muscle contraction sensitivity. [11] An imbalance of the autonomic nervous system with a blunted B-adrenergic response and a hyper-
responsiveness of B-adrenergic and cholinergic systems contribute to bronchoconstriction in asthma. [12] The somato-visceral effects of spinal adjustments on immune system functions have been proposed as the link to improvement in the symptoms of asthma. Chiropractic spinal manipulation can elicit somato-visceral response. Specifically, cells involved in the inflammatory and immune response can be influenced. The somato-visceral effects of spinal adjustments on immune system function has been proposed as a link to improvement in the symptoms of asthma. [13]

CONCLUSION

In this case there is evidence to show a positive outcome from chiropractic care on the symptoms of severe chronic asthma in a child. More research is needed to assess the effectiveness of chiropractic care in pediatric cases of asthma; however considering the low risk involved a trial course of care is warranted, particularly when conventional pharmacological treatments prove less than effective in chronic cases. The lack of objective data is a weakness in this case, as in many similar studies. However, due to the age of the patient breathing force testing was not possible.
References


